



Technical Guidance Committee Meeting

Minutes

Thursday, October 31, 2013

Department of Environmental Quality
Conference Room C
1410 N. Hilton
Boise, Idaho

TGC ATTENDEES:

Tyler Fortunati, R.E.H.S., On-Site Wastewater Coordinator, DEQ
Joe Canning, P.E., B&A Engineers
Bob Erickson, Senior Environmental Health Specialist, South Central Public Health District
David Loper, Environmental Health Director, Southwest District Health Department
Michael Reno, Environmental Health Supervisor, Central District Health Department
George Miles, P.E., Advanced Wastewater Engineering, Inc. (via telephone and GoToMeeting)

GUESTS:

Chas Ariss, P.E., Wastewater Engineering Manager, DEQ
Ryan Spiers, Alternative Wastewater Systems, LLC
AJ Maupin, P.E., Wastewater Program Engineering Lead, DEQ
Kellye Eager, Environmental Health Director, Eastern Idaho Public Health Department (via telephone and GoToMeeting)
Nathan Taylor, Environmental Health Supervisor, Eastern Idaho Public Health Department (via telephone and GoToMeeting)
Janette Young, Administrative Assistant, DEQ

CALL TO ORDER/ROLL CALL:

Meeting called to order at 8:15 a.m.
Committee members and guests introduced themselves.

OPEN PUBLIC COMMENT PERIOD:

This section of the meeting is open to the public to present information to the TGC that is not on the agenda. The TGC is not taking action on the information presented.

No public comments were submitted during the allotted agenda timeframe.



MEETING MINUTES:

July 18, 2013 Draft TGC Meeting Minutes: Review, Amend, or Approve

The minutes were reviewed and no amendments were proposed.

Motion: Michael Reno moved to accept minutes as presented.

Second: Bob Erickson

Voice Vote: Motion carried unanimously.

Minutes will post as final. See DEQ website and **Appendix A**.

August 8, 2013 Draft TGC Meeting Minutes: Review, Amend, or Approve

The minutes were reviewed and no amendments were proposed.

Motion: Michael Reno moved to accept minutes as presented.

Second: Bob Erickson

Voice Vote: Motion carried unanimously.

Minutes will post as final. See DEQ website and **Appendix B**.

OLD BUSINESS/ FINAL REVIEW:

4.2 Nonprofit Corporations

This TGM Section was posted for public comment. There were no public comments received on this section.

Joe Canning expressed concern regarding the ownership requirements listed under item 11 based on the fact that the O&M Entity always needs access to the system. Based on this the verbiage of this section was changed to state that they will always have an access easement.

Motion: Joe Canning moved that the TGC recommend final approval to DEQ for Section 4.2 Nonprofit Corporations as rewritten.

Second: Bob Erickson.

Voice Vote: Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix C**.

4.10 Extend Treatment Package System

This TGM Section was posted for public comment. There were no public comments received on this section.



Joe Canning had concerns regarding the requirements surrounding the replacement of ETPS systems that are not capable of meeting the requirements of the septic permit for the property. Clarification was added to this section to state that any replacement must be capable of meeting the requirements of the septic permit.

Motion: Michael Reno moved that the TGC recommend final approval to DEQ for Section 4.10 Extended Treatment Package Systems as amended.

Second: Joe Canning

Voice Vote: Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix D**.

DEQ Service and Testing Reminder – Explanation Letter

Letter 1 – It Has Come to Our Attention

Letter 2 – Voluntary Deadline to Comply

These letters were posted for public comment. There were no public comments received on any of the letters.

The TGC made a request to combine all three letter reviews and approvals into one motion. All three letters were reviewed. No changes were recommended by the TGC.

***Action Item** Mike Reno requested an additional letter be developed to be sent when an O & M has a bad sample and has failed to resample within 30 days.

Motion: Bob Erickson moved that the TGC recommend final approval to DEQ for all three letters with no changes.

Second: Joe Canning.

Voice Vote: Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix E, F, and G**.

Drainfield to Surface Water Setback Determination Guidance and Model

This proposed guidance document was posted for public comment. Public comment was received from two parties: HDR Engineering, Inc. and the Idaho Conservation League.

The letter from Michael Murray, Ph.D. Soil scientist at HDR Engineering and the letter from Susan Drumheller, North Idaho Associate at Idaho Conservation League were provided to the TGC. The public comment was discussed by the TGC.

Tyler Fortunati stated that today's motion on this guidance and model is strictly whether to implement this guidance and model in the subsurface sewage disposal program. Further guidance on how this guidance would be used in the program would be developed within the Technical Guidance Manual. The TGM section regarding this model would outline what would be considered a minimal acceptable outcome of the



model. If approved for implementation today the model would not be used until the TGM guidance regarding the model was provided final approval.

Motion: Michael Reno moved to implement the Drainfield to Surface Water Setback Determination Guidance and Model in the subsurface sewage disposal program and that DEQ move forward with development of TGM guidance regarding the model.

Second: Joe Canning

Voice Vote: Motion carried with a 4-1 vote.

See DEQ website and **Appendix H**.

9:24 a.m. Break

9:38 a.m. Meeting Resumed

1.4.2.2 Extended Treatment Package System Approvals

This TGM Section was posted for public comment. There were no public comments received on this section.

Motion: Bob Erickson moved that the TGC recommend final approval to DEQ of Section 1.4.2.2 Extended Treatment Package System Approvals.

Second: Joe Canning

Voice Vote: Motion carried with 4 ayes and 1 abstained.

Section will post to TGM as final. See DEQ website and **Appendix I**.

3.2.5 and 3.2.6 Equal Distribution and Serial Distribution

This TGM Section was posted for public comment. There were no public comments received on this section.

Motion: Bob Erickson moved that the TGC recommend final approval to DEQ of Sections 3.2.5 Equal Distribution and 3.2.6 Serial Distribution.

Second: Michael Reno

Voice Vote: Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix J**.

4.3 Vested Rights and Nonconforming Uses



This TGM Section was posted for public comment. There were no public comments received on this section.

Discussion by George Miles on the process homeowner needs to go through if the septic system does not have a septic permit. Mike Reno stated that the process presented in the section is what the health districts currently require. Tyler Fortunati stated that DEQ does not support the health districts issuing approvals of nonconforming systems that were installed without a permit or that did not receive an inspection prior to the system being covered without obtaining visual verification that the installation meets the requirements of IDAPA 58.01.03.

Motion: Michael Reno moved that the TGC recommend final approval to DEQ of Section 4.3 Vested Rights and Nonconforming Uses.

Second: George Miles

Voice Vote: Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix K**.

2.5 Ground Water Level

This TGM Section was posted for public comment. There were no public comments received on this section.

Discussion was held on the seasonal high water table versus normal high water table and the possibility of the normal high water table occurring over a six week period that did not include the seasonal high water table. This was addressed and presented in the meeting agenda.

Motion: Joe Canning moved that the TGC recommend final approval to DEQ of Section 2.5 Ground Water Level.

Second: Bob Erickson.

Voice Vote: Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix L**.

3.3 Wastewater Flows

This TGM Section was posted for public comment. There were no public comments received on this section.

The committee discussed whether the peak daily usage was to be used in system design or an overall flow average. Modification was made to the last paragraph to “average the peak daily usage”.



Bob Erickson expressed that the section should also apply to residential structures that cannot be addressed by the IDAPA 58.01.03 flow projections. The committee added language that indicates empirical data will be accepted for non-typical residential structures.

Motion: Bob Erickson moved that the TGC recommend final approval to DEQ of Section 3.3 Wastewater Flows as amended.

Second: Michael Reno.

Voice Vote: Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix M**.

4.25 Sand Mound

This TGM Section was posted for public comment. There were no public comments received on this section.

Joe Canning presented his drawings and notes on Sand Mound calculations. After some discussion, the committee recommended tabling this section until additional data could be gathered and the committee has time to fully review the changes and their effect on the sand mound design. Tyler Fortunati requested that additional comments for this section be sent in by mid-December so that they can be incorporated into the revised section prior to the next TGC meeting. George Miles will provide further review and comments prior to the next meeting.

*Action Items

- Revise the pressure distribution system section so it can be referenced in all pressurized designs and all pressurized systems are consistent.
- Include sweeping cleanouts in all pressurized designs that are accessible from grade.
- Include a monitoring port requirement over a system orifice that points up so that residual head can be tested throughout the system's life.

Motion: George Miles moved that the TGC table Section 4.25 Sand Mound for further review and revision.

Second: Joe Canning.

Voice Vote: Motion carried unanimously.

See **Appendix M**.

11:35 a.m. Break



12:00 p.m. Meeting resumed

2.2.3 The Method of 72 to Determine Effective Soil Depths to Porous Layers and Ground Water

Public comment was received on this proposed section asking for clarification on the maximum installation depth of medium sand in an in-trench sand filter design. Clarification was added to document that medium sand may be installed to any depth as long as it meets the requirements of the in-trench sand filter section of the TGM, but the drainfield (aggregate or gravelless product) may not be installed any deeper than four feet below grade.

Motion: Michael Reno moved that the TGC recommend final approval to DEQ of Section 2.2.3 The Method of 72 to Determine Effective Soil Depths to Porous Layers and Ground Water.

Second: Joe Canning.

Voice Vote: Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix O**.

NEW BUSINESS/ DRAFT REVIEW

4.24 In-Trench Sand Filter

David Loper asked that Figure 4-26 be moved up in the section below section 4.24.2.7.b where the figure is first referenced.

Motion: Michael Reno moved that the TGC recommend preliminary approval to DEQ of Section 4.24 In-Trench Sand Filter with the proposed amendments.

Second: Bob Erickson.

Voice Vote: Motion carried unanimously.

See **Appendix P** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov .

4.4 Easement

This section was reviewed and revised by the Deputy Attorney General for DEQ. The Attorney General's modifications were provided to the committee. The committee expressed concern that there is no longer a requirement to survey the easement area. The committee revised the section to require that the easement area be surveyed and monumented to allow the district to adequately assess the proposed site.



Motion: Michael Reno moved that the TGC recommend preliminary approval to DEQ of Section 4.4 Easement as amended.

Second: Joe Canning.

Voice Vote: Motion carried unanimously.

See **Appendix Q** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov

NEXT MEETING:

The next committee meeting is scheduled to be on February 6, 2014 from 9:15 a.m. – 4:00 p.m. at the DEQ State Office building.

Motion: Bob Erickson moved to adjourn the meeting.

Second: George Miles.

Voice Vote: Motion carried unanimously.

The meeting adjourned at 2:48 p.m.

TGC Parking Lot.

This is a running list of issues requested to be prepared and presented at a future TGC meeting.

- 4.20 Pressure Distribution System
 - Low Pressure Wastewater Handling System Guidance update
 - Revise the pressure distribution system section so it can be referenced in all pressurized designs and all pressurized systems are consistent.
 - Include sweeping cleanouts in all pressurized designs that are accessible from grade.
 - Include a monitoring port requirement over a system orifice that points up so that residual head can be tested throughout the system's life.
- Develop Operation and Maintenance requirements for section 4.22 Recirculating Gravel Filter and 4.28 Two-Cell Infiltrative System
- 4.7 Drip Distribution System
 - Adjust typical system components to minimum in section 4.7.1
- 4.9 Experimental System
 - Adjust the condition of approval relating to the site being acceptable for an approved alternative system to a basic alternative system
- Chapter 6
 - Update entire chapter and adjust section 6.5.2 to match the pumper rule requirements for permit renewal



State of Idaho
Department Of Environmental Quality
Technical Guidance Committee

- Develop a letter regarding failure to resample ETPS units upon failure of the first sampling event
-



Appendix A

Technical Guidance Committee Meeting Minutes

Thursday, July 18, 2013

Department of Environmental Quality
Conference Room C
1410 N. Hilton
Boise, Idaho

TGC ATTENDEES:

Tyler Fortunati, R.E.H.S., On-Site Wastewater Coordinator, DEQ
Joe Canning, P.E., B&A Engineers
Bob Erickson, Senior Environmental Health Specialist, South Central Public Health District
David Loper, Environmental Health Director, Southwest District Health Department
Michael Reno, Environmental Health Supervisor, Central District Health Department
George Miles, P.E., Advanced Wastewater Engineering, Inc. (via telephone and GoToMeeting)

GUESTS:

Chas Ariss, P.E., Wastewater Engineering Manager, DEQ
Kellye Eager, Environmental Health Director, Eastern Idaho Public Health Department
Ryan Spiers, Alternative Wastewater Systems, LLC
Janette Young, Administrative Assistant, DEQ

CALL TO ORDER/ROLL CALL:

Meeting called to order at 9:15 a.m.
Committee members and guests introduced themselves.

MEETING MINUTES:

April 18, 2013 Draft TGC Meeting Minutes: Review, Amend, or Approve

The minutes were reviewed and no amendments were proposed. No public comment was received on the minutes.

Motion: Joe Canning moved to accept minutes as presented.

Second: Michael Reno.

Voice Vote: Motion carried unanimously.

Minutes will post as final. See DEQ website and **Appendix A**.



OPEN PUBLIC COMMENT PERIOD: This section of the meeting is open to the public to present information to the TGC that is not on the agenda. The TGC is not taking action on the information presented.

No public comments were submitted during the allotted agenda timeframe.

ETPS SUBCOMMITTEE UPDATE:

Tyler Fortunati presented an update to TGC on what the ETPS Subcommittee has discussed and produced to date. The ETPS Subcommittee voted to move the recommended changes to the ETPS program to the TGC. The TGC will hold a special meeting on August 8th, 2013 at the DEQ State Office with GoTo Meeting access and conference bridge call available. The draft agenda for this meeting is posted online at: http://www.deq.idaho.gov/media/1009356-agenda_080813.pdf

REVIEW OF SOLIDO ETPS PRODUCT:

Discussion on the review of an ETPS product called SOLIDO. This product has not undergone NSF Standard 40 testing. It has undergone PIA testing for approval of TSS and CBOD₅ (PIA website can be viewed at <http://www.pia-gmbh.com/>). The manufacturer was given time to present information on the SOLIDO product but did not call in. The committee is not comfortable approving a system that has not undergone NSF Standard 40 testing.

Motion: Michael Reno moved that the TGC not approve the SOLIDO system unless it successfully passes NSF Standard 40 testing.

Second: George Miles.

Voice Vote: Motion carried unanimously.

PRESENTATION OF DRAINFIELD TO SURFACE WATER SETBACK DETERMINATION GUIDANCE AND MODEL:

Tyler informed the TGC that the presentation of Drainfield to Surface Water Setback Determination Guidance and Model has been moved to the August 8th, 2013 meeting. The guidance is still under review with the Attorney General's office. Tyler explained that the Attorney General has stated that in order to utilize the guidance an applicant would have to apply for a variance. The draft guidance will be distributed to the TGC members prior to the meeting.

OLD BUSINESS/ FINAL REVIEW:

Chapter 7 O& M Content

This TGM Section was posted for public comment. There were no public comments received on this section.



Motion: Bob Erickson moved that the TGC recommend final approval to Chapter 7 and the movement of Operation and Maintenance information into Section 4 under the respective systems as amended.

Second: Michael Reno.

Voice Vote: Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix B**.

4.6 Composting Toilet

This section was posted for public comment. There were no public comments received on this section. Tyler Fortunati reviewed changes and additions to this section. There was discussion regarding the allowable non-human wastes that can be disposed of in these types of systems. Additional clarification was added regarding non-human wastes.

Motion: David Loper moved that the TGC recommend final approval to DEQ of Section 4.6 as amended.

Second: Bob Erickson.

Voice Vote: Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix C**.

Chapter 3 Edits to Sections 3.1, 3.2.1, 3.2.2, and 3.2.4

This section was posted for public comment. There were no public comments received on this section. Bob Erickson asked that figure 3-1 be amended to add the 5 foot setback to the property line from the drainfield. Joe Canning asked that the drainfield label and arrow be moved over in figure 3-2. Tyler Fortunati stated that both changes would be made on the final document.

Motion: David Loper moved that the TGC recommend final approval to DEQ of Sections 3.1, 3.2.1, 3.2.2, and 3.2.4 as amended.

Second: Michael Reno.

Voice Vote: Motion carried unanimously.

All changes to Chapter 3 will post to TGM as final. See DEQ website and **Appendix D**.

Chapter 2 Edits to Sections 2.6.3 and 2.7.2

This section was posted for public comment. There were no public comments received on this section.

Motion: Bob Erickson moved that the TGC recommend final approval to DEQ of Sections 2.6.3 and 2.7.2 as amended.



Second: Joe Canning.

Voice Vote: Motion carried unanimously.

All changes to Chapter 2 will post to TGM as final. See DEQ website and **Appendix E**.

Chapter 1 Edits to Sections 1.1, 1.2, and 1.3 and Creation of Section 1.4

This section was posted for public comment. There were no public comments received on this section. Discussion was held regarding ETPS technologies and the approval process. Mike Reno would like to see a stricter standard for initial approval of ETPS units in the State of Idaho so the existing problem of failing technologies does not become a bigger issue than it already is. Mike Reno would like to move away from statistical analysis for setting performance standards for ETPS units and move to a performance based approval system utilizing systems already installed in other states. Tyler Fortunati discussed NSF Standard 360 that is based on field performance and grab sampling. Tyler Fortunati stated that this standard is relatively new and no ETPS technologies have undergone testing under this standard. Mike Reno asked that Tyler Fortunati distribute that standard to the TGC for their review and consideration. Tyler Fortunati stated that the standard would be distributed prior to the meeting on August 8th.

Motion: Michael Reno moved that the TGC recommend final approval to DEQ of Sections 1.1, 1.2, 1.3, and 1.4 as amended with the exception to table section 1.4.4.2 regarding ETPS product approvals until the August 8th, 2013 meeting.

Second: Joe Canning.

Voice Vote: Motion carried unanimously.

Sections 1.1, 1.2, 1.3, and 1.4 (with the exception of subsection 1.4.2.2 which is tabled until the August 8th meeting) will post to TGM as final. See DEQ website and **Appendix F**.

10:40 a.m. Break

10:50 a.m. Meeting resumed.

4.1 General Requirements

This section was posted for public comment. There were no public comments received on this section. Discussion was held regarding when an engineer should be required for grey water systems. The TGC's consensus on this issue is that an engineer should only be required if the grey water system has some form of pressurization included in the design.

Motion: Joe Canning moved that the TGC recommend final approval to DEQ of Section 4.1 as amended.

Second: David Loper.



Voice Vote: Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix G**.

NEW BUSINESS/ DRAFT REVIEW

3.2.5 and 3.2.6 Equal Distribution and Serial Distribution

Tyler Fortunati presented information on the public health district that had submitted public comments regarding failure rates of equal and serial distribution designs on slopes. The public comments are not backed by quantitative data but were stated to be based off of 25 years of observation and experience with failed systems on sloped sites. Joe Canning expressed his view that the best way to achieve serial distribution was through system pressurization. Discussion was held regarding different distribution designs on sloped sites using both serial and equal distribution.

Motion: David Loper moved that the TGC recommend preliminary approval to DEQ of Sections 3.2.5 and 3.2.6 as amended.

Second: Bob Erickson.

Voice Vote: Motion passed with a 4 Ayes and 1 Nay.

Section will post for public comment see **Appendix H** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

4.3 Vested Rights and Nonconforming Uses

Tyler Fortunati and David Loper participated in a meeting on July 17th, 2013 with DEQ's Water Quality Division Administrator and the Health District Environmental Health (EH) Directors. The Health District EH Directors accepted the proposed revision to this section of the TGM with a couple clarifications. The first clarification regards a subsurface sewage disposal system that is not approved (previously written as unapproved) which was clarified to be any system, regardless of installation date, that has not had a subsurface sewage disposal system permit issued for it. The second clarification is that an abandoned system is any system where the wastewater generating structure has been removed, regardless of the circumstance surrounding the structures removal. These amendments were made to the proposed revisions.

Motion: Michael Reno moved that the TGC recommend preliminary approval to DEQ of Section 4.3 as amended.

Second: Joe Canning.

Voice Vote: Motion carried unanimously.

Section will post for public comment see **Appendix I** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.



4.4 Easement

Discussion was held on the proposed revision to this section of the TGM. Discussion regarded the requirement of having an attorney prepare the easement and allowing the applicant and the second party to the easement prepare the easement themselves. Discussion also revolved around the requirement of surveying the easement before a permit is issued, after a system is installed, or whether to require a survey at all. Discussion was also held on the restrictions on easements regarding multiple transport pipes being placed in a single trench. David Loper stated that he would like to review this practice with the Health District Environmental Health Directors. Tyler Fortunati stated that he would also provide the section to the Attorney General's office for their review and comments.

Motion: Michael Reno moved that the TGC table Section 4.4 until reviewed by the Attorney General's office.

Second: Bob Erickson.

Voice Vote: Motion carried unanimously.

Section 4.4 was tabled see **Appendix J**.

The meeting was adjourned for Lunch.
Lunch 12:10 p.m. – 1:25 p.m.

2.5 Ground Water Level

Discussion was held regarding the use of low chroma mottles to determine the seasonal normal and high ground water levels. David Loper asked that the restriction on only utilizing low chroma mottles for replacement systems be removed. David Loper advocated that these are an adequate way to determine ground water levels when done in conjunction with the issuance of a restrictive permit for new construction that is protective of the ground water. David Loper also stated that the applicant can be provided with the option to monitor ground water to ease the requirements of the permit while they construct. Tyler Fortunati stated that he has observed several test holes where low chroma mottles are not present but ground water is and that relying on low chroma mottles alone is not fully protective of the ground water. Tyler Fortunati stated that Idaho Code §39-102.3.a states that the State of Idaho's ground water policy is to prevent contamination of ground water from any source to the maximum extent practical. Ground water monitoring ensures that this is done, where low chroma mottles and estimating water levels does not. Tyler Fortunati stated that if a permit is issued for a subsurface sewage disposal system and it does not meet the separation distances as required by IDAPA 58.01.03.008.02.c then the permit issuer is directly violating the subsurface sewage disposal rules. Tyler Fortunati stated that low chroma mottles are more appropriate for replacement systems when there is not an allowance for a full season of ground water monitoring due to a



public health issue. David Loper still advocated for the removal of the requirement to only use low chroma mottles for the estimation of ground water levels on replacement systems only with the compromise that the statement regarding ground water monitoring being the preferred method of determining ground water levels be left in place.

Joe Canning stated he would like to see a recommendation on when ground water monitoring records would not be accepted due to low snow pack. Michael Reno stressed that care should be taken when NRCS data indicate that snow levels are below 75% of normal snow-water equivalent. The TGC developed section 2.5.5 in response to this request.

Bob Erickson recommended changing the ground water monitoring period for seasonal runoff and spring rain events from February 15th through June 15th to February 15th through June 30th.

Joe Canning discussed Figure 2-4 Temporary ground water monitoring well design, and recommended adding emphasis of mounded soil sloping away from the top of the well. This should be done to help reduce the chance of surface runoff accumulating around the temporary monitoring well and moving down the side of the casing which gives a false reading of ground water levels. Tyler Fortunati stated that he would have this amendment added to the figure.

Motion: Joe Canning moved that the TGC recommend preliminary approval to Section 2.5 as amended and post for public comment.

Second: Michael Reno.

Voice Vote: Motion carried unanimously.

Section will post for public comment see **Appendix K** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

3.3 Wastewater Flows

Michael Reno asked that the inclusion of the non-domestic wastewater application checklist be added to section 3.3.1 and 3.3.2.

Motion: Michael Reno moved that the TGC recommend preliminary approval to Section 3.3 as amended and post for public comment.

Second: Joe Canning.

Voice Vote: Motion carried unanimously.

Section will post for public comment see **Appendix L** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

2:50 p.m. Break



3:00 p.m. Meeting resumed.

4.25 Sand Mound

Tyler Fortunati presented the suggested changes to this section regarding slope correction factors, which was in the TGC parking lot. All of the proposed changes are directly from the Wisconsin Mound Manual and are consistent with its recommendations.

Discussion was held regarding the spacing of laterals within the absorption bed. Recommended lateral spacing was added to the design requirements. Discussion was held regarding the diversion of surface runoff around the mound on sloped sites. It was recommended that this consideration be made by the design engineer.

Tyler Fortunati explained that he added a two foot perimeter of level medium sand out from the top of the absorption bed. This is a mound manual recommendation and was included into the checklist calculations for disposal area sizing.

Tyler Fortunati stated that the Wisconsin Mound Manual utilizes a linear loading rate for the disposal area sizing on sand mounds. Idaho's sizing requirements based off of soil design subgroups does not appear to correspond to the linear loading rates used in the mound manual. Tyler Fortunati included the slope correction factors directly out of the mound manual as requested. These correction factors dramatically increase the downslope length of the mound with increasing slope percentages. The TGC requested that the slope correction factors remain in place.

Motion: Michael Reno moved that the TGC recommend preliminary approval to Section 4.25 as amended and post for public comment.

Second: Bob Erickson.

Voice Vote: Motion carried unanimously.

Section will post for public comment see **Appendix M** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

2.2.3 The Method of 72 to Determine Effective Soil Depths to Porous Layers and Ground Water

Tyler Fortunati introduced this section as another tool that health district staff can use to determine effective soil depths when soil profiles are variable and do not meet the depths provided in the subsurface rules or TGM. The Method of 72 is used to determine effective soil depths to porous layers and ground water. The treatment units assigned to each soil design subgroup are consistent with the separation depths required in the TGC and subsurface rules. To find an effective soil depth the total soil profile below the drainfield must equate to 72 treatment units.



Discussion was held on how the Method of 72 compares to the percentage method used by some of the Health Districts. Bob Erickson requested an analysis of how the Method of 72 compares to the percentage method. The percentage method uses the total depth present compared to what is required for separation for that soil design subgroup.

Action Item: Compare the Method of 72 and the percentage method to determine how the two systems compare for use in variable soil profiles.

Motion: David Loper moved that the TGC recommend preliminary approval to Section 2.2.3 The Method of 72 to Determine Effective Soil Depths to Porous Layers and Ground Water as amended and post for public comment.

Second: Michael Reno.

Voice Vote: Motion carried unanimously.

Section will post for public comment see **Appendix N** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

4.24 In-Trench Sand Filter

Tyler Fortunati held discussion with DEQ's Water Quality Division Administrator regarding the requirement of a complex installer license for in-trench sand filters due to the way that IDAPA 58.01.03.006.01.b is written. The Wastewater Program's interpretation of this rule is that pressurized in-trench sand filters require a complex installer where gravity flow in-trench sand filters require a basic installer permit. Based on IDAPA 58.01.03.004.09 DEQ feels it would be appropriate in this instance for the TGC to define the need for a complex and basic installer permit following the guidelines described above.

This section was rewritten to be in line with Method of 72 and remove what appeared to be inconsistencies in separation distance requirements.

Discussion was held regarding pressurized systems and whether to reduce vertical setbacks if the system is pressurized. Joe Canning would like to see the pressurized design placed back into this section. Tyler Fortunati stated that in its current form it appeared to give reduced separation in porous soils and when the biomat forms on the medium sand the effluent could flow through the more porous soils with inadequate treatment based upon the subsurface rules. Joe Canning requested that a modified design be proposed to include envelopment of the drainfield with pressurization to keep the reduced separation distance. Tyler Fortunati stated that he would include the proposal for the next review.

David Loper would like to review these changes more closely and see the modified proposal before moving forward with preliminary approval.



Motion: Bob Erickson moved that the TGC table Section 4.24 until the October 31, 2013 meeting.

Second: David Loper.

Voice Vote: Motion carried unanimously.

Section 4.24 was tabled see **Appendix O**.

NEXT MEETING:

The next regular TGC meeting is scheduled to be on October 31, 2013, 9:15 a.m. – 4:30 p.m. at the DEQ State Office building. A special meeting for the TGC regarding changes proposed by the ETPS Subcommittee will be held August 8, 2013 9:15 a.m. – 4:30 p.m. at the DEQ State Office building.

Motion: David Loper moved to adjourn the meeting.

Second: Michael Reno.

Voice Vote: Motion carried unanimously.

The meeting adjourned at 4:10 p.m.



Appendix B

Technical Guidance Committee Meeting

Minutes

Thursday, August 8, 2013

**Department of Environmental Quality
Conference Room C
1410 N. Hilton
Boise, Idaho**

TGC ATTENDEES:

Tyler Fortunati, R.E.H.S., On-Site Wastewater Coordinator, DEQ
Joe Canning, P.E., B&A Engineers
Bob Erickson, Senior Environmental Health Specialist, South Central Public Health District
David Loper, Environmental Health Director, Southwest District Health Department
Michael Reno, Environmental Health Supervisor, Central District Health Department
George Miles, P.E., Advanced Wastewater Engineering, Inc. (via telephone and GoToMeeting)

GUESTS:

Chas Ariss, P.E., Wastewater Engineering Manager, DEQ
PaRee Godsill, Everlasting Extended Treatment, Inc.
Ryan Spiers, Alternative Wastewater Systems, LLC
Matt Gibbs, Infiltrator, Inc.
AJ Maupin, P.E., Wastewater Program Engineering Lead, DEQ
Kellye Eager, Environmental Health Director, Eastern Idaho Public Health Department (via telephone and GoToMeeting)
Raymond Keating, Environmental Health Specialist, Eastern Idaho Public Health Department (via telephone and GoToMeeting)
James Bell, Bio-Microbics, Inc. (via telephone and GoToMeeting)
Allen Worst, R.C. Worst & Company, Inc. (via telephone and GoToMeeting)
Janette Young, Administrative Assistant, DEQ

CALL TO ORDER/ROLL CALL:

Meeting called to order at 9:15 a.m.
Committee members and guests introduced themselves.

OPEN PUBLIC COMMENT PERIOD:

This section of the meeting is open to the public to present information to the TGC that is not on the agenda. The TGC is not taking action on the information presented.



No public comments were submitted during the allotted agenda timeframe.

ETPS SUBCOMMITTEE UPDATE:

Tyler Fortunati presented an update to TGC on what the ETPS Subcommittee has discussed and produced to date and what the TGC will be reviewing and approving today. He provided a brief overview of the process the Extended Treatment Package Subcommittee went through to create and revise the Extended Treatment Package System guidance documents that were presented to the TGC as part of this meeting.

NEW BUSINESS/DRAFT REVIEW:

4.2 Nonprofit Corporations

The Committee reviewed the proposed revisions and amendments to the Nonprofit Corporation guidance and structure. Tyler Fortunati stated that these changes will only impact newly proposed O&M Entities going forward and are not retroactive on previously approved O & M entities. Tyler Fortunati also stated it would be acceptable if existing O&M Entities decided to amend their bylaws to be in conformance with the program recommendations proposed in the revision of this guidance section. Discussion was held on whether DEQ could request Planning and Zoning Boards, or other similar County offices, to amend their subdivision ordinances to include a requirement that property owners notify O&M Entities of property ownership transfers through subdivision CC&Rs if the subdivision is engineered with ETPS septic systems.

Motion: Michael Reno moved that the TGC recommend preliminary approval of Section 4.2 Nonprofit Corporations and that DEQ issue the revised sections for public comment.

Second: Bob Erickson.

Voice Vote: Motion carried unanimously. See **Appendix A** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

4.10 Extended Treatment Package Systems

The Committee reviewed the proposed revisions and amendments to the Extended Treatment Package System guidance. Michael Reno suggested that a requirement be added that the service provider must submit documentation that the ETPS unit and its associated components have been installed according to the manufacturer's recommendations prior to the installation permit being finalized. The health districts cannot verify this for each technology since they have not been trained by the manufacturer. Tyler Fortunati stated that this requirement could be supported by IDAPA 58.01.03.005.15 and should be written into the installation permit.



Mike Reno would also like to see the submission of annual reports be required to be done by mail. This provides an incentive not to falsify records, reports, or test results through the threat of prosecution for mail fraud.

The committee asked that a few adjustments be made to some of the figures in this proposed section that included the addition of risers on the septic and ETPS tanks and the correction of a spelling error.

Michael Reno voiced concern over the lag time between when an ETPS unit is sampled in November and the test results show that the unit is out of compliance and the receipt of the report on July 31 when no corrective action is taken by the out of compliance ETPS unit. The unit may be operating out of compliance for several months with no attempt at fixing the system. Michael Reno would like to be able to issue a Notice of Violation to the O&M Entity for not following the retesting requirements. Tyler Fortunati clarified the Attorney General's comments on issuing an NOV. An NOV cannot be issued against an O&M Entity and can only be issued to a property owner in relation to the status of the ETPS unit. Tyler Fortunati explained that in this type of situation the property owner's system would be considered a failing system if they were past the 90 day service and sampling period after the initial failed test result. If this is the case the district should issue the property owner an NOV and follow the failing system enforcement process.

10:50 a.m. Break

11:00 a.m. Meeting resumed.

4.10 Extended Treatment Package Systems (Appendix B) (Continued)

The committee discussed the responsible parties under Section 4.10.5 ETPS System Failure, Disapproval and Reinstatement. Tyler Fortunati clarified that only the manufacturer and property owner are responsible per IDAPA 58.01.03.002.04 according to the Attorney General's office. Instead of suspending Nonprofit O&M Entities the emphasis has shifted to a disapproval of a manufacturer's product. This happens if more than 10% of the manufacturer's ETPS units are out of compliance statewide instead of by the compliance status of individual O&M Entities. George Miles requested clarification on manufacturer product disapproval asking if one of the manufacturer's ETPS models is not working, do all the manufacturer's products become disapproved. Tyler Fortunati stated at this point that is the intent because of the concern that the products are not being operated in compliance or consistently functioning in compliance with the subsurface rules. The manufacturer would be provided the opportunity to hold a contested case hearing and may have their product approvals reinstated by following Section 4.10.5.3 of the proposed guidance. Tyler Fortunati will discuss the disapproval process and allowances with the Attorney General's office and the Water Quality Division Administrator to ensure the disapproval process is acceptable.



Motion: Michael Reno moved that the TGC recommend preliminary approval of Section 4.10 Extended Treatment Package System and that DEQ issue the revised sections for public comment.

Second: David Loper.

Voice Vote: Motion carried unanimously. See **Appendix B** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

The meeting was adjourned for Lunch.
Lunch 12:00 p.m. – 1:10 p.m.

DEQ Service and Testing Reminder – Explanation Letter

The committee reviewed the letter to be sent out to homeowners from their O&M Entity. This letter would be provided to the O&M Entities on DEQ letterhead and is meant to be included in the annual O&M Entity mailings. The letter provides a reminder of service and testing requirements, and information on where a homeowner can access resources related to ETPS systems. Some small revisions were made by the committee.

Motion: Bob Erickson moved that the TGC recommend preliminary approval of DEQ Service and Testing Reminder – Explanation Letter, with the changes added today and that DEQ issue the revised letter for public comment.

Second: George Miles.

Voice Vote: Motion carried unanimously. See **Appendix C** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

Letter 1 – It Has Come to Our Attention

Letter 1 is meant to be sent out by the regulatory agency when there is a refusal of service and/or testing, and includes the service reminder letter as an additional enclosure. This letter would go out after receipt of the annual report for a property owner. The annual report from the O&M Entity must include adequate documentation as outlined in Section 4.10 of the TGM prior to the regulatory agency issuing this letter. The letter is meant to be a pre-enforcement reminder letter to the property owner that informs them of their requirements associated with the ETPS unit through their septic permit. Contact information for their O&M Entity and service provider is included in the letter.

Motion: Michael Reno moved that the TGC recommend preliminary approval of Letter 1 with the changes added today and that DEQ issue the revised letter for public comment.

Second: Joe Canning.



Voice Vote: Motion carried unanimously. See **Appendix D** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

Letter 2 – Voluntary Deadline to Comply

Letter 2 is meant to be sent out by the regulatory authority if there is no response or action initiated after a property owner's receipt of Letter 1. This letter is meant to be issued after 30 days of no response or action from Letter 1. The letter is more regulatory in tone and includes the IDAPA citations that the property owner is in violation of. It also includes a voluntary compliance date for the property owner to meet their responsibilities, and the notification that if the responsibilities are not met that the regulatory authority may pursue legal action against the property owner. This letter is copied to the O&M Entity and the County Prosecutor's office.

Motion: Joe Canning moved that the TGC recommend preliminary approval of Letter 2 with the changes added today and that DEQ issue the revised letter for public comment.

Second: George Miles.

Voice Vote: Motion carried unanimously. See **Appendix E** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

1.4.2.2 Extended Treatment Package System Approvals

This proposed guidance addition was added to the agenda based on the TGC request from the July 18, 2013 TGC meeting. This section addresses a formal policy on ETPS product approvals in the State of Idaho. Discussion was held on how new systems will be evaluated and approved in the State of Idaho. James Bell provided background on the NSF/ANSI 360 standard.

Motion: Bob Erickson moved that the TGC recommend preliminary approval of Section 1.4.2.2 Extended Treatment Package System Approvals with the changes added today, and that DEQ issue the revised sections for public comment.

Second: Joe Canning.

Voice Vote: Motion carried with 4 ayes and 1 abstained. See **Appendix F** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

2:20 p.m. Break

3:00 p.m. Meeting resumed.

Presentation of Drainfield to Surface Water Setback Determination Guidance

A.J. Maupin provided an overview of the guidance developed by DEQ that is to be used to determine acceptable site-specific drainfield setbacks to surface water. This guidance



is used when an applicant is seeking a setback to surface water that is less than what is allowed by rule or guidance for a site based upon the native site soils. To pursue a reduced setback to surface water through this guidance an applicant would have to apply for a variance. The variance would be supported by the model results produced through use of the guidance. The reduction limitations of the model are based off of phosphorous impacts to the nearby surface water. Prior to utilizing this guidance an applicant would have to successfully pass a Nutrient Pathogen (NP) Evaluation. The minimum allowable setback to surface water will not be less than 100 feet regardless of site soils under this guidance. Drainfields are limited to pressurized designs, with both drainfields installed before the permit is finalized. These dual drainfields must be installed in the upper soil profile horizons which limits the system type to a drip-distribution system or a pressurized cap and fill design with maximum installation depths of 12 inches. DEQ will review the NP Evaluation and the Drainfield to Surface Water Setback model and will send recommendations to the appropriate health district for their use in consideration of the variance approval.

A condition of the phosphorous guidance and model is that the site and soils will have an associated lifespan for the effective mitigation of phosphorous discharges in the septic system effluent. This results in a drainfield only functioning effectively for a guaranteed timespan. The model is conservative in its evaluation and lifespans may vary but could be expected between 100-1000 years. The committee raised the question as to what happens once the drainfield life is reached on the combined primary and replacement areas. There was concern regarding the sites with limited space that would not have space for more than two drainfields and what is to be done after the point in time that both drainfields had reached their effective lifespan. AJ Maupin provided clarification that the mineralization of phosphorous in the soils would be expected to free up some additional sorption capacity over time. This would be expected to extend the useful life of the drainfield site beyond the model's conservative estimate.

Motion: Michael Reno moved that the TGC recommend preliminary approval of On-site Setback Distance Determination: Modeling Phosphorous in the Environment as the Critical Constituent and that DEQ issue the document for public comment.

Second: David Loper.

Voice Vote: Motion carried with 4 ayes and 1 nay. See **Appendix G** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

NEXT MEETING:

The next committee meeting is scheduled to be on October 31, 2013, 9:15 a.m. – 4:30 p.m. at the DEQ State Office building.

Motion: Michael Reno moved to adjourn the meeting.

Second: Bob Erickson.



State of Idaho
Department Of Environmental Quality
Technical Guidance Committee

Voice Vote: Motion carried unanimously.

The meeting adjourned at 3:45 p.m.



Appendix C

4.2 Nonprofit Corporations

Revision: ~~November 21, 2000~~June 27, 2013

Nonprofit Corporations (Entities) to manage large soil absorption systems, extended treatment, ~~or~~ experimental systems, ~~elustered systems,~~ or any other ~~more~~-complex systems the Director deems a maintenance entity is required to manage must guarantee that they will be responsible for the system and be available to provide operation and maintenance (O&M). The following guidance provides for a nonprofit corporation which can do that: If an O&M Entity is setup to provide operation and maintenance for Extended Treatment Package Systems (IDAPA 58.01.03.009.02 and 58.01.03.009.03) or Large Soil Absorption Systems (IDAPA 58.01.03.013.07.c) according to the following minimum elements, the maintenance entity will likely be approved by the Director. These minimum elements provide assurance that operation and maintenance, as conditioned for these particular systems by the Director, occurs. Other O&M Entity elements may be acceptable on a case-by-case basis depending upon the maintenance needs of an Entity. Other elements not included within this guidance section will be evaluated on a case-by-case basis.

4.2.1 Required Incorporation Elements

The following elements must be included within the Entity's Articles of Incorporation or Bylaws:

1. The nonprofit organization should be incorporated according to Idaho Code 30-3.
2. The Articles of Incorporation shall include a requirement that any changes to the Entity's Articles of Incorporation or Bylaws shall be approved by the Department of Environmental Quality's Water Quality Division Administrator (Director) or his/her designee per Idaho Code 30-3-99.
 - a. The Director shall provide the Nonprofit Entity approval in writing of any changes to the Articles of Incorporation or Bylaws that are not in conflict with section 4.2 or 4.10 of the Technical Guidance Manual.
3. Membership should be limited to property owners only.
4. Voting should be limited to one parcel/one full membership/one vote.
5. Voting rights should be restricted to members with improved property.
6. Voting rights should not be cancelled.
 - a. Exception to this is allowed in the event that an extended treatment package system is disconnected and removed from the property as approved by the Director.
7. Purposes of the organization should be clearly defined in the Articles of Incorporation.



~~5.8.~~ The Nonprofit Entity should hold an annual meeting of the membership.

9. Funds generated are to operate specific functions and should be restricted for use to the specific purpose. Those purposes should be defined in the Bylaws or associated Membership Agreement.

a. Annual financial reports should be made available to the membership upon request by individual members and through the annual membership meeting.

~~6.10.~~ Multiple-purpose organization funds generated are to be separately maintained, and funds from one account should not be available for another account's use.

11. ~~The organization Nonprofit Entity should~~ may own the system(s) it intends to maintain and must have an access easement in place.

a. Access easements for extended treatment package systems should be executed through a membership agreement as outlined in section 4.2.3.

~~7.~~ Mutually agreeable access to those systems owned by the entity should be provided by the property owner.

~~8.12.~~ Membership (and shares) in the ~~entity Nonprofit Entity~~ must run with the land, and successive owners must acquire the preceding owner's membership or voting share(s).

~~9.13.~~ The purchaser ~~or and~~ any new member should be provided by the Nonprofit Entity with a copy of the Articles of Incorporation, By-Laws, Covenants, and Contracts (i.e., membership agreement, etc.) with the ~~entity~~ Entity.

~~10.14.~~ There should be no provisions restricting ownership of improved property.

15. The ~~entity Nonprofit Entity~~ should be capable of raising revenue by fixing setting and collecting user charges.

16. Board of Director Requirements:

a. For Extended Treatment Package System Nonprofit Operation and Maintenance Entities the Board of Directors should contain one permanent position required to be filled by a corporate officer, general partner, or owner of the manufacturer of the treatment technology.

i. The only exemption to this requirement shall be for cases where manufacturers are no longer in business. In this case the existing Board Members and associated membership shall vote in a new Board Member to ensure that item 16.b is fulfilled.

a.b. The Board of Directors should include a minimum of three Board Member positions.



- ~~11.~~17. The Board of Directors should be able to raise revenue for emergency operation and maintenance of community owned systems without majority vote.
18. The ~~organization~~ Nonprofit Entity must be capable of suing and of being sued, maintain the capability to impose liens on those members (shareholders) who become delinquent in user charges, and suspend services, providing such suspension will not jeopardize other members' use.
- ~~12.~~19. The Nonprofit Entity should provide an operation and maintenance manual that shall be approved by the Director.
- a. ~~An~~ The operation and maintenance manual ~~shall~~ should be ~~approved by the Director~~ provided to all new members for extended treatment package systems and shall include the monitoring requirements as outlined in ~~the~~ Section 4.10.2 "Extended Treatment Package System" ~~Operation, Maintenance and Monitoring~~ Conditions for Approval.
- ~~13.~~20. Conditions for dissolution of the ~~organization~~ Nonprofit Entity should be specified. Dissolution should be limited to connection to a municipal wastewater treatment facility or merger with another approved ~~nonprofit~~ Nonprofit corporation Entity having management capability.
- ~~14.~~21. Except as provided in item ~~1820~~, the ~~entity~~ Nonprofit Entity should not be able to vote itself out of existence.
22. ~~A~~ For Nonprofit Entities a third party (i.e., maintenance entity, service provider, etc.) should be identified to execute the specified operation and maintenance functions, ~~in the event the operating entity is incapable of performance.~~
- a. Service Providers for Nonprofit Entities overseeing extended treatment package systems should be certified in writing by the manufacturer for the servicing of their technology. The certification should be provided to the Director prior to approval.
- ~~15.~~23. The ~~entity~~ Nonprofit Entity should be able to plan and control how and at what time additional service functions will be extended or added.
- ~~16.~~24. The Articles of Incorporation and/or By-Laws should provide for proxy voting.
- ~~17.~~25. Proxies should not be binding on new purchasers.
- ~~18.~~26. ~~The~~ For community systems the developer of the project should be required to contribute to the operation and maintenance until such time as the ~~nonprofit~~ Nonprofit corporation Entity is self-sustaining. Consider either a specified period of time or when a specified number of lots ~~has~~ have been sold.
27. The ~~organization~~ Nonprofit Entity should have a defined service area boundary.



4.2.2 Notification Requirements

The Nonprofit Entity shall notify the Director for any of the following reasons:

1. Any content changes that occur to the Articles of Incorporation, Bylaws, or Membership Agreements that occur after initial approval by the Director shall be provided to the Director for review and approval prior to their implementation. Any changes that conflict with any portion of section 4.2.1 should not be approved.
2. Changes occur to the Board of Directors.
3. Service provider(s) are changed.
4. Sampling plan changes or adjustments are necessary.

4.2.3 Membership Agreements for Extended Treatment Package Systems

The membership agreement is separate from the Articles of Incorporation and Bylaws for the Nonprofit Entity but is a required element for membership in the Nonprofit Entity and to ensure that proper operation and maintenance will be performed (IDAPA 58.01.03.009.03).

Membership agreements should contain the following elements:

1. Title of the membership agreement should include the words *lien notice, access easement, member agreement, and the name of the Nonprofit Entity*.
2. Contact information for the Nonprofit Entity should be listed including a mailing address and phone number.
3. A statement that annual fees will be assessed for services rendered by the Nonprofit Entity should be included.
4. The agreement should describe the exact services that are and are not included within the agreement (e.g., service, maintenance, annual testing, repairs, annual report submission, etc.).
5. The access easement language should be included.
6. A description of the lien process should be included.
7. The legal description of the property should be included.
8. A requirement that upon each sale of the property the buyer will sign an acknowledgement that they have reviewed the membership agreement and understand its requirements.
9. The agreement should state that the current property owner must disclose the terms of the membership agreement prior to any sales transaction of the property.



4.2.4 Sampling Plans for Extended Treatment Package Systems

Nonprofit Entities formed for the purpose of maintaining, servicing, and testing Extended Treatment Package Systems shall develop a sampling plan for the testing of effluent (IDAPA 58.01.03.009.03). Sampling plans should contain the following elements:

1. A signed letter from the manufacturer of the treatment technology certifying that the sampling method provided is acceptable for their technology.
2. A sampling location and design that is located after the secondary treatment unit for both gravity and pressurized systems.
3. Sample collection, preservation, and transportation techniques and methods that are in conformance with the latest edition of *Standard Methods for the Examination of Water and Wastewater*.
4. A way to collect all samples from a free flowing effluent pipe. Hose or portable water sources may be used to induce flowing condition but should be used as an option of last resort when access to a water source within the home is not available. If a hose or portable water source is used to induce a flowing condition the water source should discharge into the cleanout between the structure and primary septic tank. Cross connection and backflow prevention should be considered if hoses are used to induce flow.
5. Sample point cleaning and flushing procedures prior to sample collection.
6. Any necessary sampling device calibration techniques, equipment, and reagents.
7. Effluent field sample indicators that may be recommended for evaluation prior to collection of a grab sample. These indicators should provide indication that the treatment unit is operating properly.



Appendix D

4.10 Extended Treatment Package System

Revision: ~~January 4, 2011~~ June 27, 2013

4.10.1 Description

Manufactured and *packaged* mechanical treatment devices that provide additional biological treatment to septic tank effluent. Such units may use extended aeration, contact stabilization, rotating biological contact, trickling filters, or other approved methods to achieve enhanced treatment after primary clarification occurs in an appropriately sized ~~primary clarifier (septic tank)~~. These systems provide secondary wastewater treatment capable of yielding high-quality effluent suitable for discharge in environmentally sensitive areas.

Extended Treatment Package Systems (ETPS) are required to have annual maintenance and effluent quality testing performed and reported to the Director as described within section 4.10 of the TGM (IDAPA 58.01.03.005.14). This maintenance is to be performed by an approved Operation and Maintenance Entity (O&M) (IDAPA 58.01.03.009.03). Property owners that install an ETPS unit must choose an O&M Entity capable of meeting their maintenance and effluent testing needs. Verification of the chosen O&M Entity shall be submitted with the subsurface sewage disposal permit application ensuring that the operation, maintenance, and monitoring (effluent quality testing) will occur (IDAPA 58.01.03.005.04.k). Property owners that do not want to meet these O&M requirements must meet the requirements of section 4.10.2(2) or choose another alternative system that will meet the conditions required for subsurface sewage disposal permit issuance.

4.10.2 ~~Operation, Maintenance, and Monitoring~~ Conditions for Approval

~~Procedures relating to operation, maintenance, and monitoring are required by IDAPA 58.01.03 (section 8.1) or may be required as a condition of issuing a permit, per IDAPA 58.01.03.005.14 (section 8.1) to ensure protection of public health and the environment.~~

1. A maintenance entity will be available to provide continued device operation and maintenance (O&M). Approval of the O&M Entity will be made by the Director ~~before~~ prior to the issuance of a permit. Approvable entities may include, but are not limited to, the following:
 - a. Municipal wastewater treatment departments
 - b. Water or sewer districts
 - c. Nonprofit Corporations (see section 4.2)

An O&M ~~Agreement~~ Entity membership agreement and an accompanying general access easement should be entered into between the property owner and the ~~Nonprofit~~ O&M Entity, as a necessary condition for issuing an installation permit (IDAPA 58.01.03.005.04.k). This agreement and the easement will be recorded with the County as a condition for issuing an installation permit.



2. Extended Treatment Package Systems (ETPS) may be used for ~~single-family dwellings properties~~ without an approved ~~maintenance-eO&M~~ Entity **only under all of the following conditions:**
 - a. The site is acceptable for a standard system. All separation distances from ground water, ~~and surface waters~~, and limiting layers, ~~and soil types~~ shall be met.
 - b. Enough land is available, and suitable, for two full-size drainfields. One complete full-size drainfield shall be installed.
 - ~~c. A state approved effluent filter shall be used at the outlet of the package treatment system and before the drainfield.~~
3. Final effluent disposal through subsurface discharge will meet the following criteria:
 - ~~d. Surface discharge. System owner will apply for a National Pollution Discharge Elimination System Permit (NPDES) from the United States Environmental Protection Agency (EPA). Effluent quality will meet the applicable requirements of the "Water Quality Standards" (IDAPA 58.01.02), "Wastewater Treatment Requirements" (IDAPA 58.01.16), and all other applicable regulations.~~
 - ~~e. Ground water discharge. Effluent quality will meet the applicable requirements of the "Ground Water Quality Rule" (IDAPA 58.01.11), "Wastewater Rules" (IDAPA 58.01.16), and all other applicable regulations. Total Nitrogen discharge shall not exceed that specified in the development's Nutrient Pathogen (NP) Study in order to prevent the ground water from exceeding the "Ground Water Quality Standard" for nitrates (IDAPA 58.01.11.200.01.a) and to maintain and protect the existing and projected future beneficial ground water uses (IDAPA 58.01.11.006.02).~~
 - a. Subsurface discharge. If an 85% reduction or better in Carbonaceous Biological Oxygen Demand (CBOD₅) and Total Suspended Solids (TSS) can be achieved, then the effluent may be discharged to a drainfield satisfying the Intermittent Sand Filter (section 4.23.5) or the Recirculating Gravel Filter Gravity Disposal Trenches (section **Error! Reference source not found.**) application rate criteria and vertical setback requirements.
 - i. Otherwise, the effluent must be discharged to a standard drainfield, sized as directed in IDAPA 58.01.03.008 (section 8.1) and meeting the required effective soil depth for standard drainfields as directed in IDAPA 58.01.03.008.02.
 - ii. Additional drainfield sizing reduction granted for use of gravelless trench products is not allowed.
 - b. ~~The 85% reduction is a qualitative criterion.~~ The 85% reduction will be accepted as being met if the effluent exhibits a quantitative value obtained from laboratory analysis not to exceed 40 milligrams per liter (mg/L) (40 parts per million [ppm]) CBOD₅ and 45 mg/L (45 ppm) TSS.



f.c. Total Nitrogen (TN) reduction may be required for ETPS units located in an area of concern as determined through a Nutrient-Pathogen (NP) Evaluation. Permit specific TN reduction levels will be determined through the NP Evaluation. Results for TN are determined through the addition of TKN and Nitrate-Nitrite Nitrogen ($TN = TKN + [NO_3 + NO_2 - N]$). TN reduction will be accepted as being met if the effluent exhibits a quantitative value obtained from laboratory analysis not to exceed the TN level stipulated on the subsurface sewage disposal permit.

4.10.3 Operation, Maintenance, and Monitoring

Procedures relating to operation, maintenance, and monitoring are required by IDAPA 58.01.03.009.03 (section 8.1) or may be required as a condition of issuing a permit, per IDAPA 58.01.03.005.14 (section 8.1) to ensure protection of public health and the environment.

1. Operation and Maintenance

- a. Annual maintenance shall be performed on the ETPS unit as described in the ETPS manufacturer's operation and maintenance manual for the ETPS model as submitted under section 4.2.19.
- b. Additional maintenance not specified in the operation and maintenance manual may be required to ensure the ETPS functions properly.
- c. Records of each maintenance visit shall be kept and should include the following information for the primary maintenance visit:
 - i. Date and time.
 - ii. Observations for objectionable odors.
 - iii. Observation for surfacing of effluent from the treatment unit or drainfield.
 - iv. Notation as to whether the system was pumped since the last maintenance visit including the portions of the system pumped, pumping date, and volume.
 - v. Sludge depth and scum layer thickness in the primary septic tank and treatment unit.
 - vi. If responding to an alarm event provide the cause of the alarm and any maintenance necessary to address the alarm situation.
 - vii. Field testing results for any system effluent quality indicators included in the approved sampling plan as submitted under section 4.2.4 or as recommended in section 4.10.3.2.b.
 - viii. Record of any cleaning and lubrication.
 - ix. Notation of any adjustments to control settings or equipment.



- x. Test results for pumps, switches, alarms, blowers, etc.
- xi. Notation of any equipment or component failures.
- xii. Equipment or component replacement including reason for replacement.
- xiii. Any recommendations for future service or maintenance and reasoning.
- d. Any maintenance visit occurring after the primary annual maintenance visit should only record and address the reason for the visit and the associated activities that occur.

4.2. Monitoring

- a. Annual effluent monitoring will be required for all ETPS units that discharge to a reduced size drainfield, to a drainfield with a reduced separation distance to ~~ground water~~ limiting layers, and/or to a drainfield located in an environmentally sensitive area (area of concern).
 - i. Annual monitoring included in the Annual Report must occur within the reporting period.
- b. It is recommended that prior to collecting effluent samples from the treatment unit for laboratory analysis that effluent quality indicators be field tested as described in the approved sampling plan for the O&M Entity. All recommendations included in 4.10.3.2.b are recommendations only and should be verified with the treatment technology manufacturer as acceptable with their field sampling plan and as suitable effluent quality indicators. Field testing is recommended to include, but may not be limited to:
 - i. Visual examination for wastewater color, odor, and effluent solids.
 - ii. The following constituents:

<u>Constituent</u>	<u>Acceptable Range</u>
<u>pH</u>	<u>6 to 9</u>
<u>Dissolved Oxygen (DO)</u>	<u>≥ 2 mg/L</u>
<u>Turbidity</u>	<u>≤ 40 NTU</u>

Table 4-5. Recommended field testing constituents for effluent quality indication.

- c. Monitoring samples provided to a laboratory will analytically quantify that the units are operating in compliance, provided samples do not exceed 40 mg/L (40 ppm) for CBOD₅ and 45 mg/L (45 ppm) for TSS.
 - i. Results for CBOD₅ and TSS that exceed these levels indicate the ~~pretreatment device~~ ETPS unit is not achieving the required reduction levels. ~~CBOD₅ monitoring will replace Biological Oxygen Demand (BOD₅) monitoring effective January 1, 2008.~~



b-d. For those systems installed in areas of concern, including nitrogen sensitive areas, or are used to fulfill NP Study Evaluation results and requirements, the following additional constituents may be monitored as stipulated on the permit:

- i. ~~a)~~ Total Kjeldahl Nitrogen (TKN)
- ii. ~~b)~~ Nitrate-Nitrite nitrogen (NO₃+NO₂-N)
- iii. ~~e)~~ Results for Total Nitrogen (TN = TKN + [NO₃+NO₂-N]) that exceed the levels stipulated on the installation permit, in the subdivision approval for sanitary restrictions release, or the approved NP Study Evaluation, indicate that the device is failing to achieve the required reductions

~~e. Laboratory results that exceed the numerical Total Nitrogen values specified in the Total Nitrogen column of Table 8-1 (section 8.6) indicate that the treatment device is not achieving the required percent nitrogen reduction, specified in the Total Nitrogen Reduction (%) column of Table 8-1.~~

e. Samples will be collected, stored, transported, and analyzed according to the latest version of *Standard Methods for the Examination of Water and Wastewater* (Rice et. al 2012) and other acceptable procedures.

i. Each sample will have a Chain-of-Custody sheet, identifying, at a minimum, the sample's source (street address or installation permit number), date and time of collection, and the person who extracted the sample(s).

ii. The Chain-of-Custody sheet should also specify the laboratory analyses to be performed on the sample(s).

iii. Sample storage and transport will take place in appropriate containers under appropriate temperature control.

~~d. Samples will be required to be analyzed by a certified laboratory capable of analyzing wastewater according to the acceptable standards identified below, and the monitoring results will be submitted as part of the Annual Report to the local health district. The annual report shall be submitted no later than July 31 of each year for the preceding 12-month period. Reporting period is from July 1 of the preceding year through June 30 of the reporting year.~~

i. Analysis of ETPS effluent shall be performed using the following standards from the *Standard Methods for the Examination of Water and Wastewater* (NSF utilizes the same standards in their Standard 40 and 245 evaluations):

<u>Analysis</u>	<u>Standard Method Number</u>
<u>Total Suspended Solids (TSS)</u>	<u>SM 2540 D</u>
<u>Carbonaceous Biological Oxygen Demand (CBOD₅)^a</u>	<u>SM 5210 B</u>
<u>Total Kjeldahl Nitrogen (TKN)</u>	<u>SM 4500-NH₃ C</u>
<u>Nitrate-Nitrite Nitrogen (NO₃ + NO₂-N)</u>	<u>SM 4500-NO₃⁻ F</u>

a – Person requesting the analysis from the lab must specify the CBOD₅ on the Chain-of-Custody paperwork.



Table 4-6. Standard methods required to be utilized for the analysis of ETPS effluent in annual testing.

ii. Annual reports submitted with laboratory analysis results differing from these standard methods will be rejected.

g. Samples failing to achieve the required effluent constituent levels shall require:

i. Additional operations and maintenance ~~will be required~~ for devices that fail to achieve the above reductions.

ii. Additional sampling ~~will be required~~ to demonstrate the operation and maintenance performed successfully restored the treatment system to proper operation.

1. Sample extraction and analysis should occur within 30 days after servicing the system.

1.2. A maximum of three ~~servicing and subsequent monitoring~~ sampling events, within 90 days, will be allowed to return the system to proper operation. Failure to correct the system within this time frame will result in the system being classified as a *failing system* (4-9).

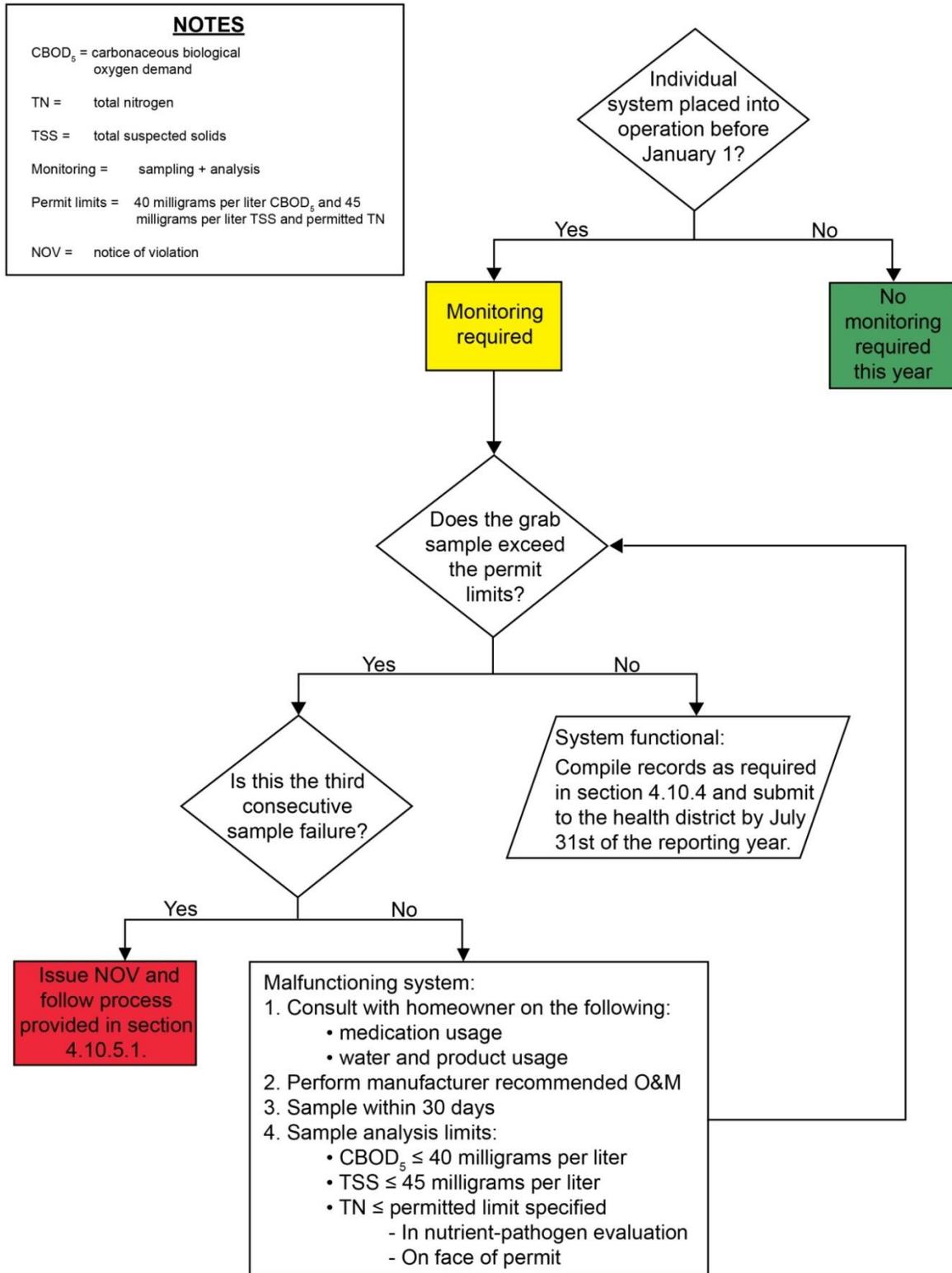


Figure 4-8. ETPS unit individual system sampling process.



4.10.4 Annual Report

The reporting period is from July 1 of the preceding year through June 30 of the reporting year. Annual reporting is the responsibility of the property owner (member), it is recommended that the property owner have their O&M Entity compile and submit their annual report. The property owner responsible under the Individual/Subsurface Sewage Disposal Rules for the ETPS unit shall ensure that the following annual reporting requirements are met:

1. The Annual Report for each property owner shall include the following items:
 - a. A copy of all maintenance records for the reporting period as required under section 4.10.3.1.
 - b. A copy of all certified laboratory records for effluent sampling.
 - c. A copy of each Chain-of-Custody record associated with each effluent sample.
2. If the O&M Entity is fulfilling annual reporting requirements for their members it is recommended that the following additional information be included within the annual report:
 - a. A current list of all members of the O&M Entity within the health district to which the Annual Report was submitted.
 - b. The member list should clearly identify which members the O&M Entity is contracted with for annual reporting requirements and the status of each member in regards to completion of the Annual Reporting requirements.
 - c. If Annual Reporting requirements are not complete for any given member for whom the O&M Entity is responsible for providing the Annual Report an explanation should be included with that member's records within the Annual Report.
3. Annual Report Exemptions:
 - a. A member may be exempt from effluent testing based upon extreme medical conditions.
 - i. Annual service and maintenance on the member's ETPS unit shall not be exempt due to medical conditions and record of annual service and maintenance shall still be submitted with the member's Annual Report.
 - b. An O&M Entity contracted by a member to fulfill Annual Reporting requirements may be exempt from reporting annual service and testing results for individual members if that member's activities fall under section 4.10.6 of this manual.
 - i. The O&M Entity should still report the activities described under section 4.10.6 of this manual for each member exempt from annual reporting through this section.



4. The annual reporting process:

- a. The annual report shall be submitted through mail by the property owner or the O&M Entity on behalf of their member no later than July 31 of each year for the preceding 12-month period to the local health district.
 - i. The Annual Reports shall be submitted to the local health district that issued the subsurface sewage disposal permit for, and has jurisdiction over, the ETPS unit.
- b. The local health district shall provide the O&M Entity a written response within 45 days of receipt of the Annual Report detailing compliance or non-compliance with septic permit requirements.
 - i. The O&M Entity should inform individual members of their compliance status.
 - ii. All correspondence from the health districts regarding a noncompliant Annual Report shall be copied to DEQ.

5. Delinquent Annual Reports:

- a. If the property owner or their O&M Entity contracted to submit the member's Annual Report does not submit the Annual Report by July 31st of the reporting year the local health district shall send the property owner, or O&M Entity contracted to submit the member's Annual Report, a reminder letter providing a secondary deadline for annual report submission of August 31st of the reporting year. The reminder letter shall detail the report requirements and that failure to submit the Annual Report by the secondary deadline will result in the district forwarding a notice of non-report to DEQ. DEQ may seek any remedy available under the Individual/Subsurface Sewage Disposal Rules, including without limitation requiring the property owner to replace the ETPS unit with another system, as outlined in section 4.10.5.
 - i. All correspondence from the health district regarding delinquent Annual Reports shall be copied to DEQ.

4.10.5 ETPS System Failure, Disapproval, and Reinstatement

Commercially manufactured wastewater treatment components must be approved by DEQ (IDAPA 58.01.03.009.01). Manufactured ETPS units are subject to this approval. In addition, the installation of an ETPS unit requires a subsurface sewage disposal permit pursuant to IDAPA 58.01.03.005. ETPS units are alternative systems that must be approved by the Director pursuant to IDAPA 58.01.03.004.10. As part of the alternative system approval for ETPS units DEQ defines the specific circumstances under which the ETPS units may be installed, used, operated, and maintained within section 4.10 of the TGM (IDAPA 58.01.03.009.03 and 58.01.03.005.14).

If an ETPS product is not shown to be installed, used, operated, or maintained as described within section 4.10 of the TGM DEQ may pursue enforcement against a property owner and seek



those remedies available under IDAPA 58.01.03. Enforcement and remedies against a property owner may include a determination that the ETPS system has failed and the requirement that the property owner replace the ETPS unit with a different system authorized by DEQ. This may include the installation of another ETPS unit approved by DEQ or the engineering and installation of another alternative system that is capable of meeting the requirements of the property owner's subsurface sewage disposal permit. If an ETPS product is not shown to be in compliance or to consistently function in compliance with IDAPA 58.01.03 and the operation and maintenance requirements outlined in section 4.10 of the TGM, DEQ may disapprove the ETPS unit. Reasons for DEQ enforcement, which may include seeking remedies against a property owner or disapproval of an ETPS manufacturer's technology as outlined herein, but are not limited to, the following:

1. Failure to submit an Annual Report by the secondary deadline of August 31st.
2. If an O&M Entity's the Annual Reports for a particular ETPS technology identifies a malfunctioning system rates of 10% or more.
 - a. Malfunctioning systems are defined as any system that fails to receive annual maintenance or exceeds the effluent reduction levels for any constituent required as part of the septic permit (i.e., TSS, CBOD₅, or TN).
3. If a property owner's ETPS unit has been determined to be a failing system.
 - a. Failing ETPS units are defined in section 4.10.3(2)(g).

4.10.5.1 **Failing System Enforcements**

The regulatory authority shall follow the following procedures upon determination that an ETPS unit is a failing system (Figure 4-9):

1. When the regulatory authority is notified that a system is failing a Notice of Violation (NOV) shall be issued to the property owner. The property owner shall have the opportunity to hold a compliance conference with the regulatory authority to enter into a consent order.
2. Consent orders should allow a property owner a 12 month period in which to return the system to proper operation or replace the failing system.
 - a. Over this 12 month period the property owner should have their O&M Entity service the ETPS unit at least monthly.
 - b. Monthly effluent samples should be required to be taken by the O&M Entity until the ETPS unit passes 3 consecutive monthly samples.
 - i. Three consecutive passing monthly samples taken one month apart from one another would be cause for the regulatory authority to terminate the consent order and NOV, and reclassify the system as compliant.



- c. Operation and Maintenance records as described in section 4.10.3.1, certified laboratory records, and Chain-of-Custody records for each sample should be submitted to the regulatory authority on a monthly basis as part of the consent order.
- d. If the ETPS unit is not capable of producing 3 consecutive monthly samples over the 12 month period the system shall be replaced with another alternative system capable of meeting the effluent quality requirements based upon applicable site conditions.
- e. Replacement systems must be capable of meeting the treatment requirements of the original septic permit. Appropriate replacement systems may include a sand mound with 24 inches of sand beneath the absorption bed, intermittent sand filter, recirculating gravel filter, or a different ETPS unit that is approved and has an active O&M Entity.

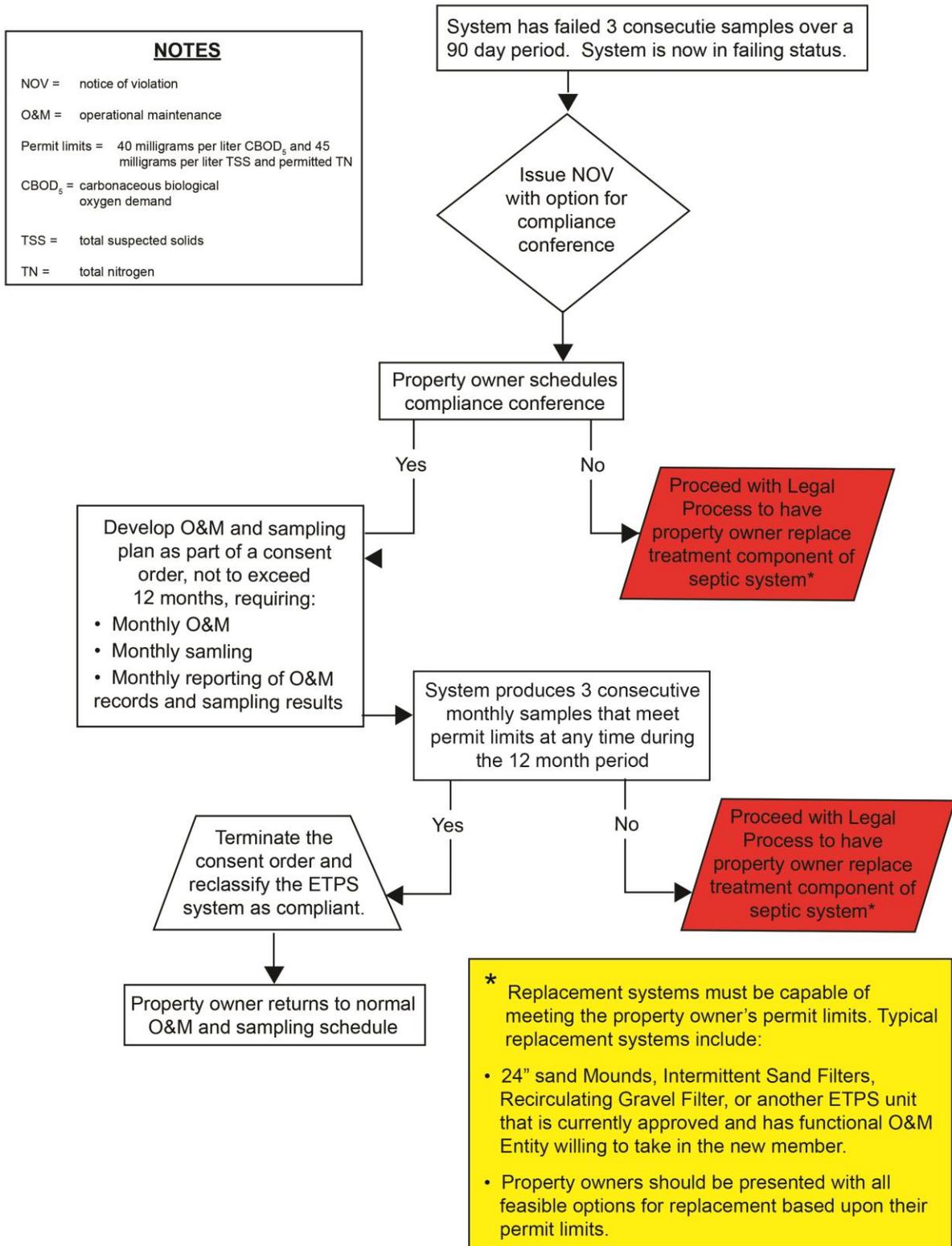


Figure 4-9. ETPS failing system enforcement flowchart.



4.10.5.2 *ETPS Product Disapproval*

In addition to determining a particular system is a failing system as set forth in section 4.10.5.1, if DEQ determines that an ETPS unit cannot consistently function in compliance with IDAPA 58.01.03, DEQ may disapprove the product (IDAPA 58.01.03.009.04). A notice of DEQ's intent to disapprove the product will be detailed in writing following Idaho Code, title 67, chapter 52, and sent to the ETPS product manufacturer, O&M Entity, and the health districts. The ETPS manufacturer will be allowed an opportunity to respond prior to product disapproval. Upon disapproval of a manufacturer's ETPS product line the health districts shall not issue septic system permits on new applications for ETPS systems from the disapproved product manufacturer. Monitoring, reporting, and servicing requirements of existing ETPS unit installations will not be affected by the product disapproval (Figure 4-10).

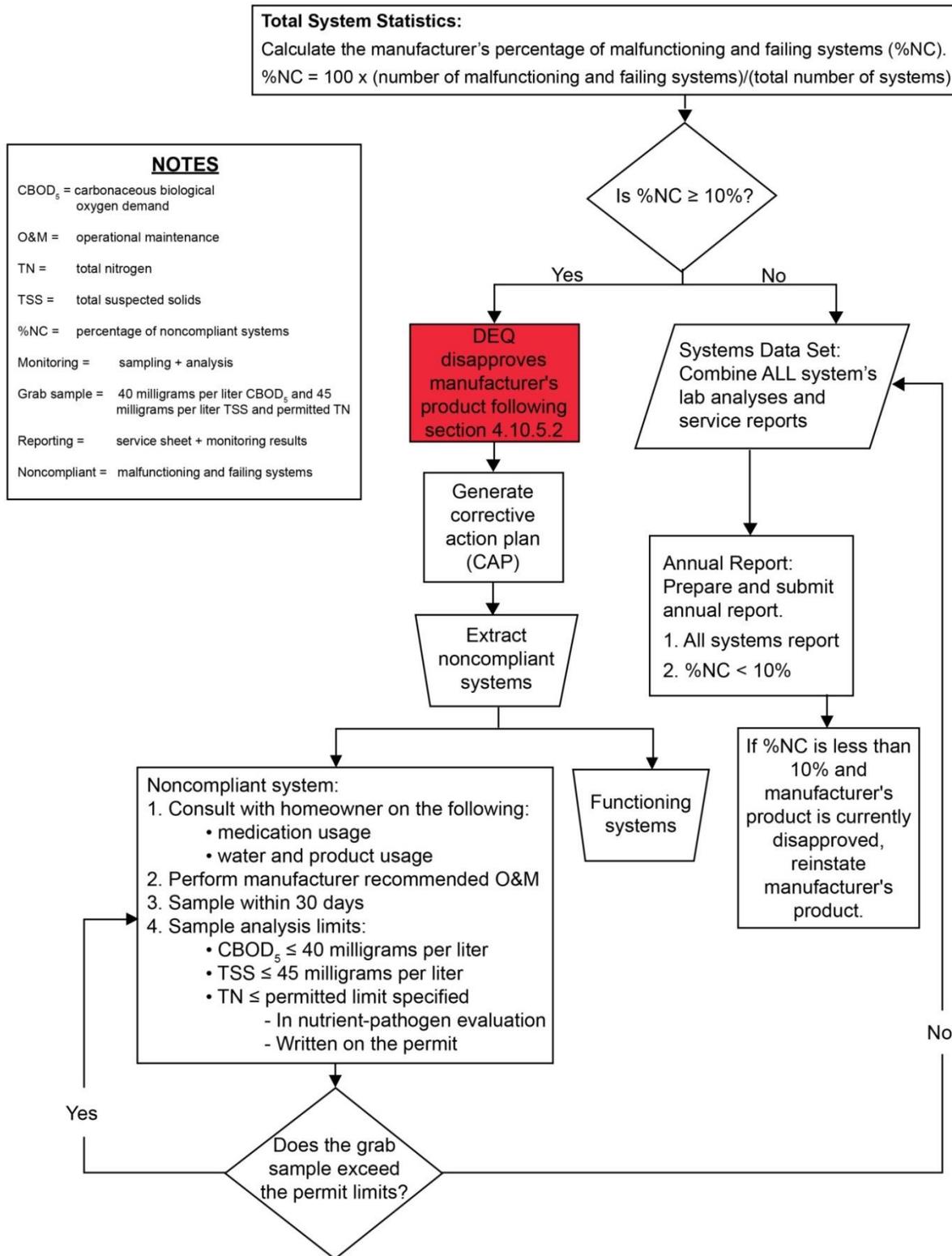


Figure4-910. ETPS product disapproval process based upon annual reports.



4.10.5.3 ETPS Product Reinstatement

Upon ETPS product disapproval DEQ will provide the opportunity for the ETPS product manufacturer to enter into a Corrective Action Plan (CAP) for the purposes of product reinstatement. The CAP should establish the time frame to return the noncomplying or failing systems to proper operation. The ~~suspension~~ product disapproval will remain in effect until the malfunctioning and failing system rate for the ETPS manufacturer's technology is below 10%.

4.10.6 Member Refusal of Maintenance or Testing Requirements

It is the responsibility of the individual Nonprofit O&M Entity members (property owners) to ensure the O&M Entity is capable of performing the necessary annual maintenance and effluent testing required for their ETPS unit. Failure of an individual member to permit the O&M Entity from carrying out the required services is considered a violation of IDAPA 58.01.03.012.01. The following activities from a property owner toward their O&M Entity may be considered as refusal of service actions by a member, and may not be limited to:

1. Refusal to allow annual maintenance or effluent quality testing (e.g., refusal to pay annual dues preventing the financial capability of service, denial of property access, etc.).
2. Refusal to maintain the ETPS unit in operating condition (e.g., refusal to replace broken components, refusal to provide electricity to the unit, etc.).
3. If the refusal of service continues through the Annual Reporting Period the Nonprofit O&M Entity should substitute the following documents in the Annual Report for members refusing service that the O&M Entity is contracted with to submit their Annual Report:
 - a. Copies of all correspondence and associated certified mail receipts documenting the property owner's receipt of the correspondence regarding the refusal of service. Refusal of service by a member through non-payment should include documentation of a lien being placed on the member's property.
 - i. If the documentation is not included within the Annual Report, there will be insufficient documentation of the property owner's refusal to allow maintenance and monitoring, and therefore, the lack of maintenance and monitoring may count against the malfunctioning rate for the ETPS technology.

4.10.6.1 Refusal of Service Enforcement Procedures

Upon receipt of an Annual Report that shows that individual O&M Entity members have refused to allow maintenance and monitoring as set out in section 4.10.6 of this guidance the following guidelines shall apply:

1. The regulatory authority shall issue Letter 1 and the associated enclosure that was provided in the DEQ Program Directive dated xxxx.



- a. This letter shall be sent to the property owner via certified mail and copied to the associated O&M Entity.
 - b. It is the property owner's responsibility to work with the regulatory authority and their O&M Entity to address their delinquent responsibilities. The O&M Entity should contact the regulatory authority and associated property owner 30 days after receipt of Letter 1 informing the regulatory authority of the property owner's voluntary compliance status.
2. If the property owner fails to voluntarily comply within the 30 day timeframe the regulatory authority shall issue Letter 2 that was provided in the DEQ Program Directive dated xxxx.
 - a. This letter shall be sent to the property owner via certified mail and copied to the associated O&M Entity.
 - b. It is the property owner's responsibility to work with the regulatory authority and their O&M Entity to address their delinquent responsibilities. The O&M Entity should contact the regulatory authority and associated property owner by the voluntary compliance date provided within Letter 2 informing the regulatory authority of the property owner's voluntary compliance status.
3. If the property owner fails to voluntarily comply by the date provided in ~~step~~Letter 2 of ~~this process~~ the regulatory authority ~~shall~~may issue a Notice of Violation to the property owner to ensure compliance with the property owner's subsurface sewage disposal permit requirements in regards to the ETPS unit.
- ~~1. DEQ will suspend the O&M Entity and require that the O&M Entity, affected homeowners, and service provider, in cooperation with the local health district, enter into a Corrective Action Plan (CAP). The CAP should establish the time frame to return the noncomplying systems to proper operation. The suspension will remain in effect until the malfunctioning system rate is below 10%. Suspension will only prevent issuing additional O&M agreements. Existing system monitoring, reporting, and servicing requirements will not be affected by a suspension (Figure 4-9).~~
- ~~4. If the system is experimental, the system owner will provide a waiver of liability absolving the Department and the health districts of any liability arising from operation or malfunction of the system.~~



4.10.34.10.7 Design of ETPS Units

Procedures relating to design are required by IDAPA 53.01.03 (section 8.1) or may be required as permit conditions, as appropriate, to ensure protection of public health and the environment.

1. All materials will be durable, corrosion resistant, and designed for the intended use.
2. All electrical connections completed on site shall comply with the National Fire Protection Association (NFPA) Standard NFPA 70, National Electrical Code, as required by the Idaho Division of Building Safety, Electrical Bureau.
3. Design for each specific application should be provided by a PE licensed in the State of Idaho ~~specializing in environmental or sanitary engineering.~~
4. The system's aerobic treatment section will be preceded by a primary clarifier and an appropriately sized septic tank. The ~~primary clarifier septic tank~~ may be either a separate septic tank, a volume integral with the system's package, or a combination of internal clarifier volume coupled with an external tank. The ~~primary clarifier septic tank~~ shall provide the minimum tank capacity for residential facilities as specified in IDAPA 58.01.03.007.07.a, or for nonresidential facilities a minimum of 2-days hydraulic residence time (HRT) as stipulated in IDAPA 58.01.03.007.07.b. Timed dosing from the clarifier to the aerobic treatment unit is preferred, and highly recommended, to maintain a constant source of nutrients for the system's aerobic microbes.
4. ~~Manufactured and packaged mechanical treatment devices will be required to prove that the specified equipment model:~~ meets the ETPS product approval policy outlined in section 1.4.2.2.
5. ~~Has successfully completed National Sanitary Foundation (NSF) standard 40 testing, or~~
6. ~~Has successfully completed an EPA-sanctioned Environmental Technology Verification (ETV) test, or~~
- g.d. ~~Was designed by a PE licensed in the State of Idaho specializing in sanitary or environmental engineering.~~

4.10.44.10.8 Construction

Procedures relating to construction are required by IDAPA 58.01.03 (section 8.1) or may be required as permit conditions, as appropriate, to ensure the protection of public health and the environment.

1. Installation
- h. ~~The system shall be installed by an appropriately qualified installer. IDAPA 58.01.03.003.35 defines system as "Beginning at the point of entry~~



~~physically connected piping, treatment devices, receptacles, structures, or areas of land designed, used or dedicated to convey, store, stabilize, neutralize, treat, or dispose of blackwaste or wastewater.” Consequently, the system includes the drainfield.~~

- a. A licensed complex system installer shall be required to install an ETPS unit and all other portions of the septic system connected to the ETPS unit, or that the ETPS unit discharges to (IDAPA 58.01.03.006.01.b).
- b. A public works contractor may install an ETPS unit if they are under the direct supervision of a PE licensed in the State of Idaho.
- c. Licensed plumbers and electricians will be required to install specific devices and components for proper system operation. If the device requires any on-site fabrication or component assembly, a public works contractor should be used.
- e.d. A sample port will be installed in the effluent line after the aerobic treatment unit.

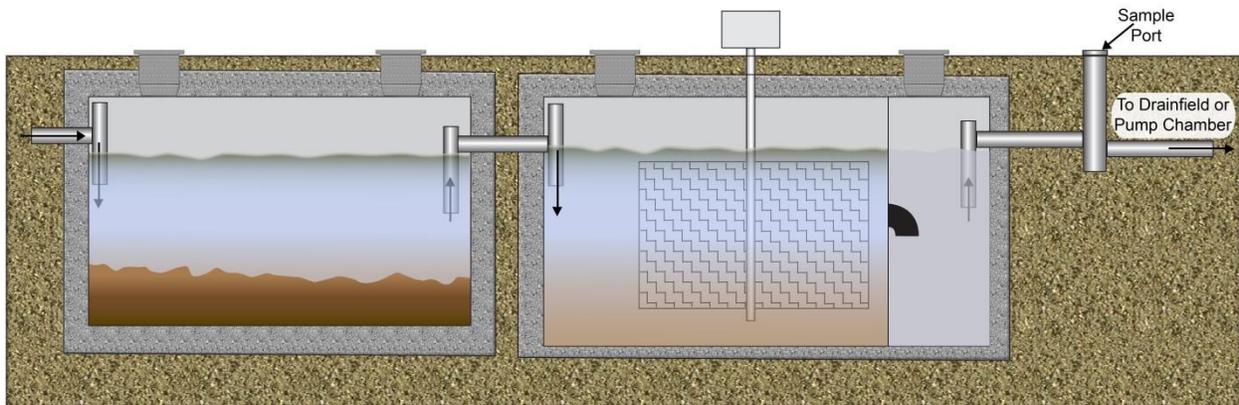


Figure 4-11. Sampling port example.

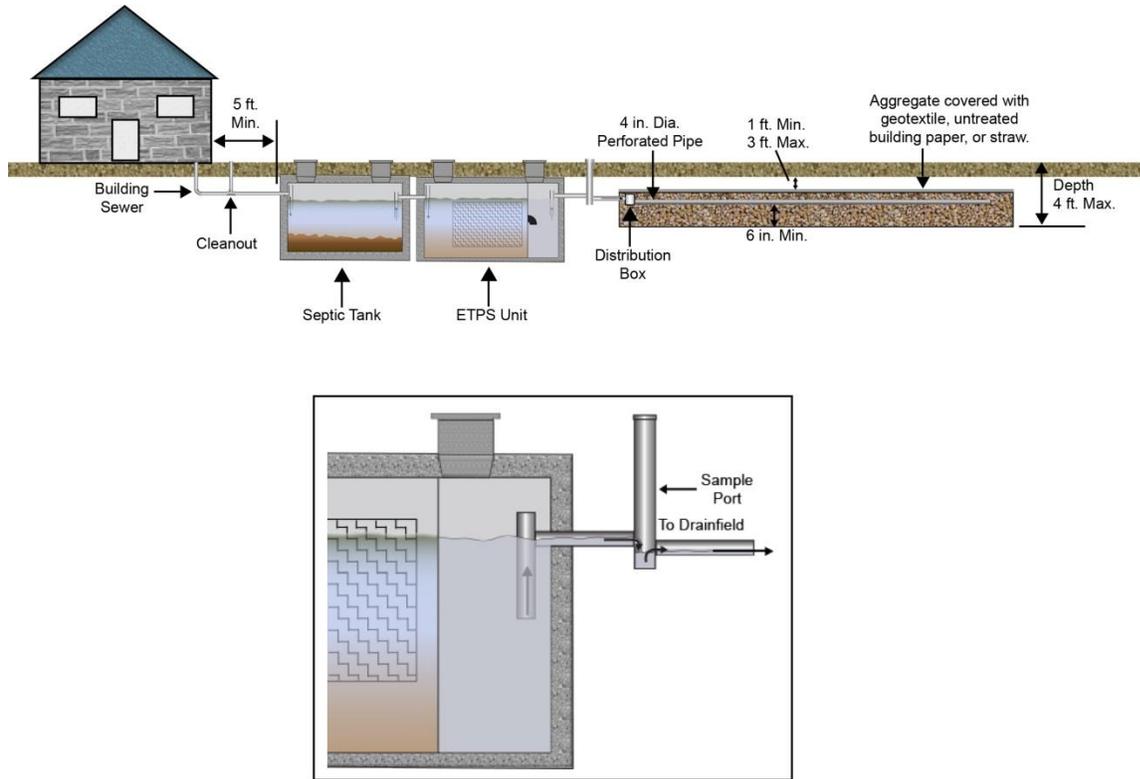


Figure 4-12. Sampling port and drainfield.

2. Within ~~90-30~~ days of completing the installation the property owner shall provide certification to the regulatory authority, from their O&M Entity, that the system has been installed and is operating in accordance with ~~design and/or~~ the manufacturer's recommendations (IDAPA 58.01.03.005.15).

a. A statement requiring the submission of the installation verification form described above shall be written on the face of the subsurface sewage disposal permit.

~~a.b.~~ The regulatory authority shall hold the finalization of the subsurface sewage disposal permit until the certification of proper installation and operation is received.

~~Note: If a health district has questions regarding application of this guidance document to a proposed system, contact DEQ.~~

4-8 shows the ETPS sampling process for an individual system, ~~and~~ 4-9 shows the reporting enforcement process for an O&M Entity a failing system, Figure 4-10 shows the ETPS product disapproval process, and Figure 4-11 shows the placement of a sampling port after the ETPS unit, and figure 4-12 shows the sample port and drainfield after the septic and treatment tank.



Appendix E

Dear Extended Treatment Package System Owner,

The Department of Environmental Quality (DEQ) would like to take this opportunity to provide some information about the treatment component of your septic system and remind you of the annual service and testing of the treatment unit that is vital to your system's performance, drainfield life, and required as a condition of your septic permit. Improper operation and maintenance could lead to premature failure and costly replacement of your drainfield. The issuance of the septic permit for your property required a treatment component in order to install the drainfield. Without the septic permit the construction of buildings necessitating sewer connections on your property would not be possible.

Extended Treatment Package Systems provide pretreatment to your wastewater prior to its discharge to the drainfield portion of your septic system. These treatment units reduce waste strength and nutrients (particularly nitrogen) in wastewater. For more information on these systems and your drainfield please view the *Aerobic Treatment Systems and Drainfields: What You Need to Know* brochure on the DEQ website located at http://www.deq.idaho.gov/media/657393-aerobic_treatment_systems_and_drainfields_brochure.pdf.

Per your member agreement contract you are required to work with your Operation and Maintenance Entity and Service Provider to ensure that annual servicing and testing of your treatment unit is scheduled. Protection of public health and the environment is a team effort. Your participation in this program is a critical aspect to its success and is a requirement of the septic system permit for your property.

Thank you for your cooperation.

Sincerely,

The Idaho Department of Environmental Quality



Appendix F

March 10, 2014

[Certified Mail No.]

Re: Extended Treatment Package System Service, Maintenance, and Testing

Dear [Name],

It has come to our attention that you have not had your [insert manufacturer's name] extended treatment package system (ETPS) [maintained and/or tested] for this reporting year. The subject property is located at [address or legal description]. It is a requirement of the septic permit issued for your property that the ETPS unit has annual maintenance performed and the effluent quality tested through your Operation & Maintenance Entity (O&M Entity) and the O&M Entity's associated Service Provider. According to our records your O&M Entity and Service Provider contacts are:

O&M Entity:

Service Provider:

Entity Contact Name
Entity Business Name
Entity Address
Phone Number

SP Name
SP Business
SP Address
Phone Number

Your ETPS unit is under contract with this O&M Entity through a Member Agreement. This agreement is recorded with your County. It is the property owner's responsibility to ensure the ETPS unit is provided with maintenance, and that the effluent quality discharged from the unit is tested annually. Failure to have annual maintenance performed and effluent quality tested for your ETPS unit places you in violation of the Subsurface Sewage Disposal Rules. Please work with your O&M Entity to schedule your annual maintenance and effluent quality testing. If you have any questions regarding your Member Agreement or the necessary requirements to schedule your maintenance and testing appointment please contact your O&M Entity. If you have questions concerning regulatory requirements regarding your ETPS system please contact [insert health district name] at [insert phone number]. Your cooperation in meeting the requirements of your septic permit is appreciated.

Sincerely,

[Regulator Name]
[Regulator Title]

c: [O&M Entity]

enclosure



Appendix G

March 10, 2014

[Certified Letter No.]

[Name]
[Address]
[City, State]

Re: Voluntary Deadline to Comply with ETPS Maintenance and Effluent Testing Requirements

Dear [Name],

[Regulatory Agency Name] has been informed that you are refusing to meet your responsibility and requirements surrounding your [insert manufacturer's name] extended treatment package system (ETPS). As described in this Department's letter sent to you dated [insert letter 1 date] you are responsible for having annual maintenance performed on your ETPS unit and for annual testing of effluent quality discharged by the unit. Per *IDAPA 58.01.03.002.04.a.i* it is the responsibility of the property owner to treat and dispose of wastewater generated on their property in accordance with their subsurface sewage disposal permit.

You are responsible for the completion of your unit's annual maintenance and effluent quality testing. The results of the annual maintenance and testing are required to be submitted to this Department by July 31st of each year. As of the issuance of this letter you are delinquent in meeting these requirements by [insert number of days past July 31st]. This Department is providing you a 30 day window to voluntarily meet the requirements and responsibilities of your septic permit and member agreement (see enclosure). You have until [insert voluntary compliance date] to accomplish your required annual maintenance and effluent quality testing. **After this date this Department may issue a Notice of Violation to you for failure to meet the requirements of *IDAPA 58.01.03.002.04.a.i*, *58.01.03.004.01*, *58.01.03.005.14*, and *58.01.03.012.01-03*.** To view the requirements of these Rules please reference the Individual/Subsurface Sewage Disposal Rules located at <http://www.deq.idaho.gov/water-quality/wastewater/septic-systems.aspx>.

Please contact your O&M Entity to schedule your required annual maintenance and testing of effluent quality.

O&M Entity:

Entity Contact Name
Entity Business Name
Entity Address
Phone Number

Your O&M Entity should report the status of the completion and compliance of these activities on [insert voluntary compliance date]. Your cooperation in meeting the requirements of your septic permit is appreciated.

Sincerely,



State of Idaho
Department Of Environmental Quality
Technical Guidance Committee

[Regulator Name]

[Regulator Title]

c: [O&M Entity]
[County Prosecuting Attorney]

enclosure (septic permit and member agreement)



State of Idaho
Department Of Environmental Quality
Technical Guidance Committee

Appendix H

See subsequent pages prior to appendix I.



Appendix I

1.4.2.2 Extended Treatment Package System Approvals

Manufacturers seeking approval of an Extended Treatment Package System (ETPS) technology shall submit product information to the DEQ On-Site Wastewater Coordinator for review by DEQ. In addition to product information (i.e., engineering designs and product manuals) manufacturers seeking approval on their ETPS units for reduction of Total Suspended Solids (TSS) and Carbonaceous Biological Oxygen Demand (CBOD₅) will need to submit National Sanitation Foundation (NSF)/American National Standards Institute (ANSI) Standard 40 and 360 approvals, reports, and associated data. Manufacturers also seeking approval on their ETPS units for reduction of Total Nitrogen (TN) will need to submit NSF Standard 245 approvals, reports, and associated data. Any additional third party standards evaluated for the ETPS unit will also need to be submitted including approvals, disapprovals, reports, and associated data.

DEQ will issue ETPS product approval in conjunction with associated reduction levels for TSS, CBOD₅, and TN. Reduction levels will be determined through statistical analysis of the data included in the third party standards. Third party reports average reduction values will not be accepted to establish system performance approvals. The third party data will be statistically evaluated to determine a resulting value that corresponds to the 95% upper confidence limit. The resulting value that corresponds to the 95% upper confidence limit will be used as the system's initial performance limit.

ETPS units that have not undergone third party testing and wish to be approved for reduction in TSS, CBOD₅ and TN must be permitted and installed under the Experimental System guidance in Section 4.9. ETPS units installed under the Experimental System guidance in an attempt to gain approval for effluent reduction levels shall follow the minimum operation, maintenance, and effluent testing procedures outlined in Section 4.10.3, and be installed in an area suitable for a standard system with no reduction in drainfield sizing or separation distance requirements. Operation, maintenance, and effluent testing requirements shall be written into the experimental system's permit.

To obtain approval for TSS, CBOD₅, or TN reduction without third party data, or to lower reduction levels from initial approval for any constituent, the manufacturer of the ETPS unit or their representative must submit data from their ETPS units installed in Idaho. Data from other states will not be considered under this approval process. Any data submitted must be specific to a particular ETPS make and model. Data submission must include information on 30 installations with a minimum of 3 full years of operational data on each system. All maintenance and effluent testing records, as described in Section 4.10.3, obtained over this period must be submitted for review. For adjustment in reduction levels of effluent constituents to be approved the data must show that 90% of the installed units have successfully maintained effluent reduction levels at or below the desired reduction approval level during the entire testing period.

Prior to product approval or the issuance of any non-experimental permits being issued for system installation manufacturers must have an Operation and Maintenance Entity setup for their ETPS units as described in section 4.2 of the TGM. The Operation and Maintenance Entity must



State of Idaho
Department Of Environmental Quality
Technical Guidance Committee

be capable of fulfilling the requirements of section 4.2 and 4.10 of the TGM prior to product approval.



Appendix J

3.2.5 Equal Distribution

In equal distribution wastewater effluent is distributed to all trenches within the subsurface sewage disposal system thus providing the opportunity for utilization of the entire infiltrative surface of the disposal system. Equal distribution is the preferred method of wastewater discharge to any subsurface sewage disposal system on flat or slightly sloped site. The best way to accomplish this is through pressurization of the drainfield (see section 4.20). When gravity flow is utilized for wastewater discharge to the subsurface system equal distribution to each subsurface disposal trench can be accomplished through the use of a piping header or distribution box.

3.2.5.1 Piping Header

With a piping header system wastewater is conveyed to each disposal trench through the use of a network of solid piping. The discharge line from the septic tank should be split through the use of a T pipe fitting. The T should be offset equally from the distribution trenches. One-directional sweeping cleanouts should not be used in place of a bi-directional T. The T pipe fitting should be installed on a solid surface in a level position. It is recommended that the piping header only be utilized in installations involving two trenches. See figure 3-3 for an overhead view of this distribution setup.

3.2.5.2 Distribution Box

Distribution boxes (d-box) are used to divide wastewater effluent evenly among multiple subsurface distribution lines. D-boxes are typically made of concrete or wastewater grade plastics and are watertight with a single inlet set at a higher elevation in the box than the outlets. Outlets should be constructed at equal elevations to one another. The d-box should be constructed with an access lid. Access lids are recommended to be made accessible from grade. Distribution boxes should be installed level on a sound footing (e.g., properly bedded to prevent settling and heaving).

There are several devices available for installation on the distribution lines leaving the d-box to ensure that each line is receiving equal amounts of effluent if the piping or d-box becomes un-level. It is recommended that leveling devices be installed on the effluent lines leaving the distribution box at time of initial installation. Distribution boxes are highly recommended for situations where there are more than two trenches installed and gravity flow is desired. See figure 3-3 for an overhead view of this distribution setup on a level site. Figure 3-4 provides an overhead view of a distribution box setup on a sloped site.

Upon installation it is important that the distribution box is checked for level installation on all sides. It is also highly recommended that outlet lines from the d-box be checked for level installation within the d-box to one another. This is especially important when trenches are installed at different elevations from each other and the distribution box. Flow should be induced within the d-box, from a point prior to the d-box, after installation and prior to final cover to verify that each outlet line will receive effluent at similar flow rates. If flow rates differ it is



recommended that effluent outlet lines and/or flow equalization devices be adjusted and the flow rates retested after adjustment.

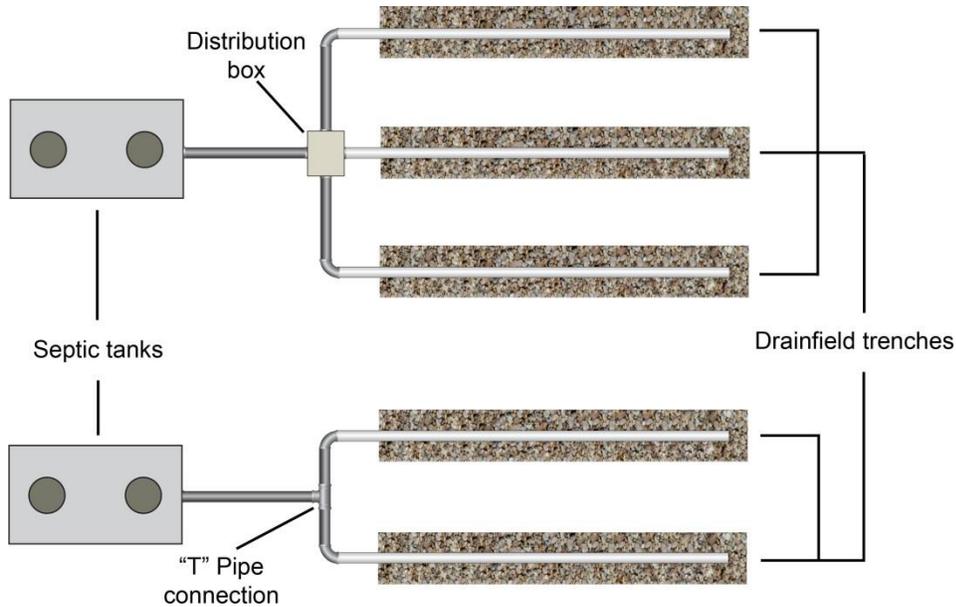


Figure 3-3. Overhead view of equal distribution methods for level sites.

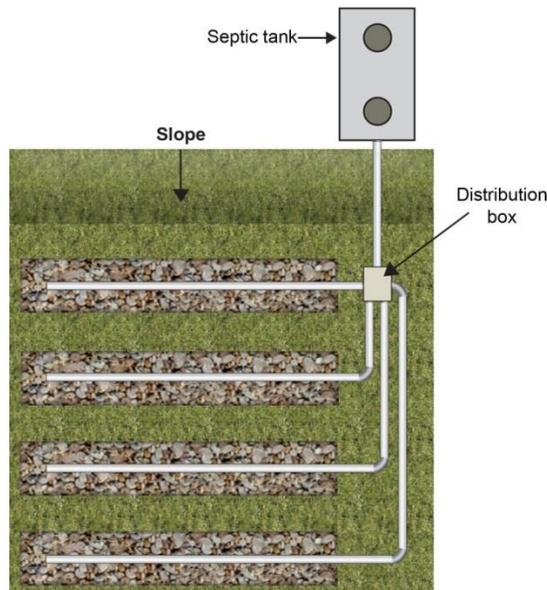


Figure 3-4. Overhead view of a distribution box layout on a sloped site.

3.2.6 Serial Distribution

Due to continuous ponding over the infiltrative surface serial distribution trenches suffer hydraulic failure more rapidly and progressively because the infiltrative surface cannot regenerate its infiltrative capacity. With this in mind serial distribution should only be used



where equal distribution is not achievable. On sloped ground, it is preferable to use serial Serial distribution, that is, distribution functions so that each trench in order is completely filled loaded and completely flooded with effluent before effluent flows to the next lower trench in series. Serial distribution is typically utilized on sites with slopes in excess of 20%. In this distribution method it is not necessary to construct trenches at the same length but each trench must maintain a level installation by following a slope contour. To maintain trenches between 2 to 4 feet below ground, it may be essential to use this kind of distribution. Serial distribution is accomplished either by installing relief lines or drop boxes between successive trenches. It is strongly recommended that serial distribution be accomplished through the use of drop boxes due to control and access aspects to the system.

3.2.6.1 Relief Lines

Relief lines are overflow lines that connect one trench to the adjacent lower trench in series. Relief lines are constructed of solid-wall piping and may be placed at opposite ends of successive trenches or anywhere within the trench line. If relief lines are installed in the middle of trenches successive relief lines should be offset by a minimum of 5 feet to avoid short circuiting the distribution system. Care must be exercised in excavating the connecting relief line between trenches. Bleeding of effluent down this excavation is a common cause of surfacing effluent in serial distribution systems. The excavation of the connecting trench to the next downslope trench should be just deep enough to accept the solid connector pipe. See figure 3-5 for an overhead view of a relief line installation system network. See figure 3-6 for a cutaway view of relief line connection between trenches.

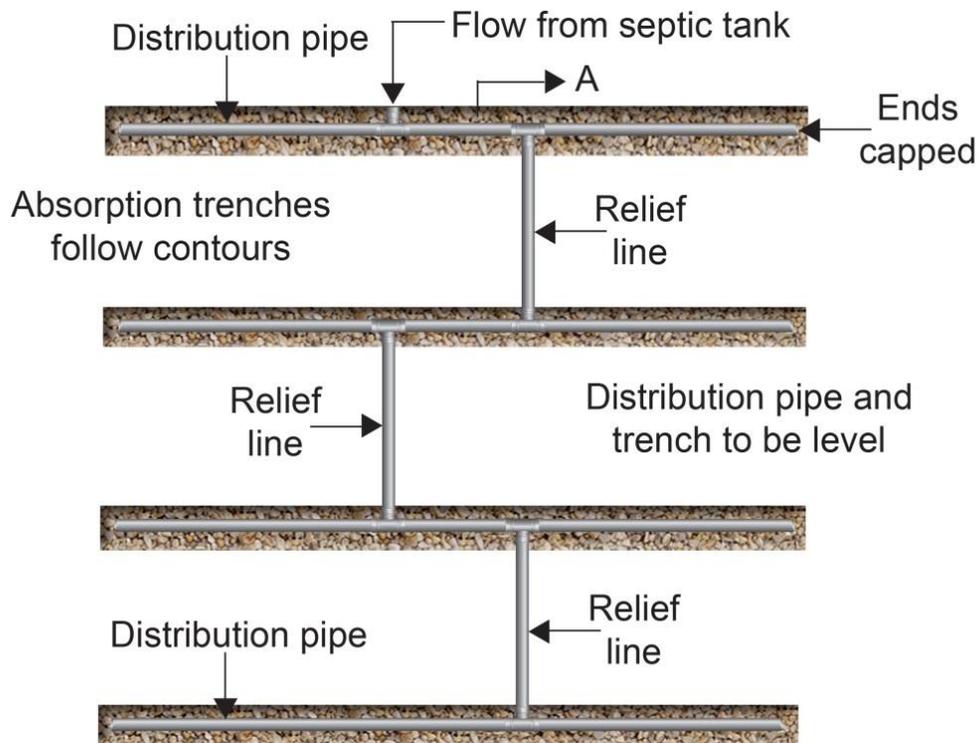


Figure 3-5. Overhead view of a relief line system network.

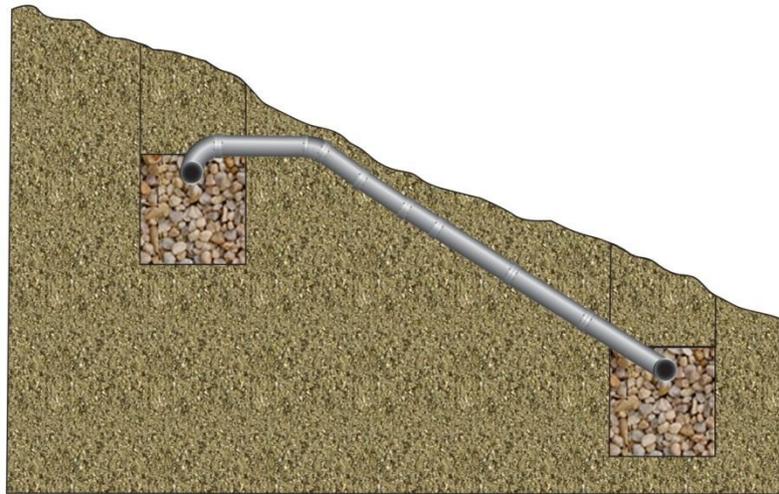


Figure 3-6. Side view of relief line installation between trenches.

3.2.6.2 Drop Boxes

Serial distribution may also be accomplished through the use of drop boxes. This method is commonly referred to as sequential distribution. Distribution boxes should not be substituted for drop boxes in this system design. The drop boxes are constructed so that each trench is completely flooded before the effluent flow runs to the next downslope trench in series. Care must be exercised in excavating the connecting line between trenches. Bleeding of effluent down this excavation is a common cause of surfacing effluent in serial distribution systems. The excavation of the connecting trench to the next downslope trench should be just deep enough to accept the solid connector pipe. The drop box consists of an inlet and outlet set at the same height that should be a minimum of 2 inches from the bottom of these ports to the top of the outlet ports for the trench at this location. There are typically two outlet ports to the disposal trench on opposite sides of the drop box to allow the trench to be extended on either side of the drop box. The trench outlets from the drop box should be set level with the distribution pipes in the disposal trench connected to the drop box. Solid-wall pipe should be used between drop boxes. Figure 3-3 Figure 3-7 shows the detail of a drop box and the associated distribution system. Figure 3-8 shows an overhead view of drop box installation utilizing multiple trenches with one drop box.

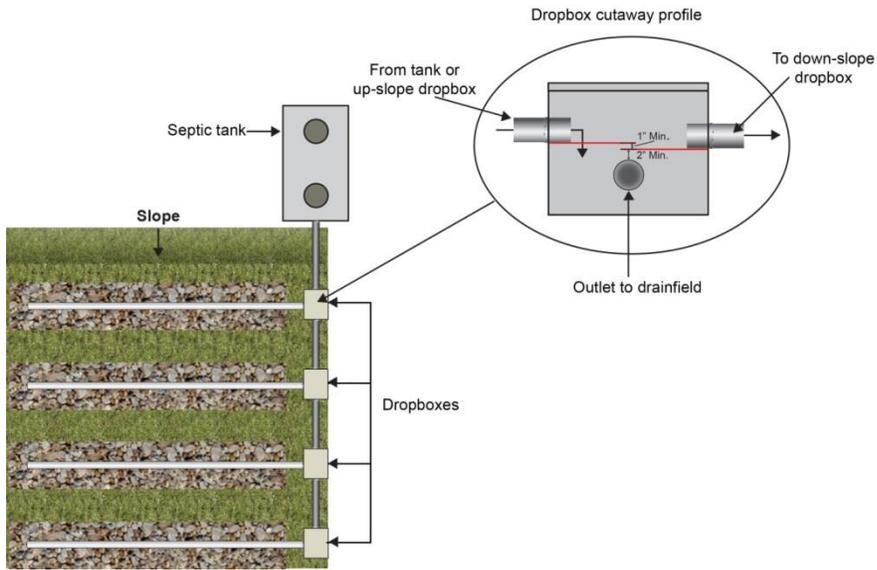


Figure 3-37. Drop box and sequential distribution details.

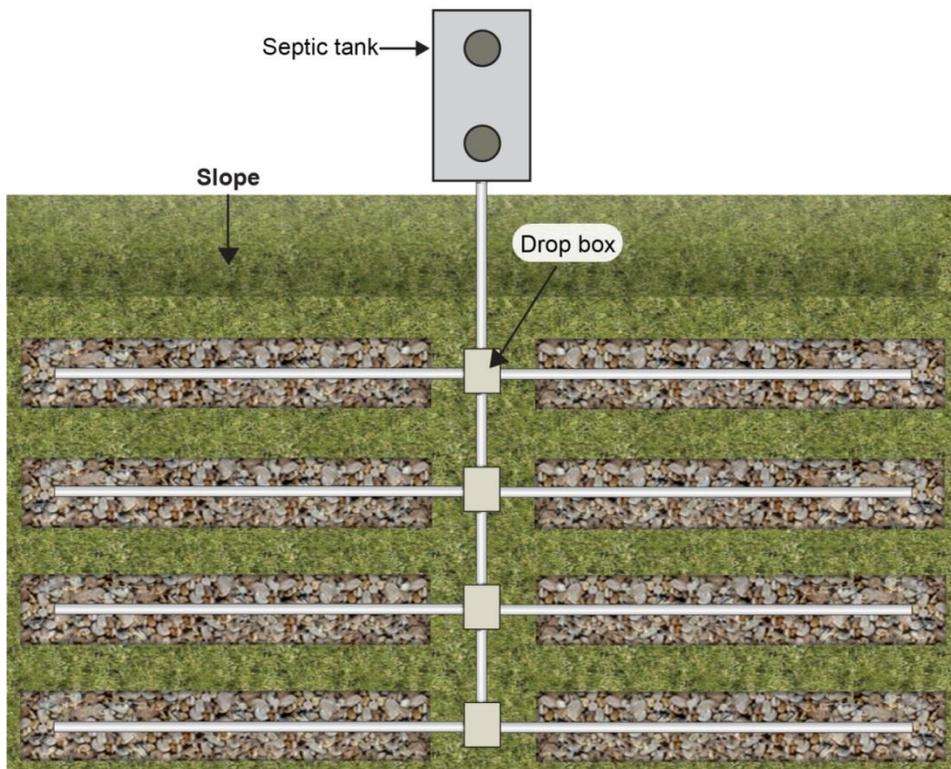


Figure 3-8. Overhead view of drop box installation utilizing multiple trenches with sequential distribution.



Appendix K

4.3 Vested Rights and Nonconforming Uses

Revision: ~~May 15~~ April 18, 2013

Failed system: Repair or replacement of an existing system.

1. Dwelling or structure unit served by the system must not be altered, remodeled, or otherwise changed, so as to result in increased wastewater flows (IDAPA 58.01.03.004.04).
2. Reason for failure should be determined if possible.
3. If failure is due to age, the system may be repaired or replaced with a similar system that shall be constructed as close as possible to current dimensional and setback requirements for standard systems (IDAPA 58.01.03.008.12).
4. If failure has occurred in less than 10 years and is due to increased wastewater flows or poor site characteristics, an alternative or larger system must be constructed as close as possible to current dimensional and setback requirements for alternative systems (IDAPA 58.01.03.008.12).
- 3.5. System replacement must follow the requirements of the subsurface program directive memorandum entitled "Failing Subsurface Sewage Disposal System" issued by DEQ on July 26, 1993.

Additions or alterations: Changes to an existing structure or dwelling, ~~such as remodeling.~~

1. Addition or alteration will not cause the existing system to become unsafe or overloaded (IDAPA 58.01.03.004.04).
- ~~2.~~ 2. Enough reserve area for both the original and additional system shall be preserved (IDAPA 58.01.03.004.06).
- ~~1.~~ 1. ~~Addition or alteration will not be additional or new dwelling units.~~
- ~~2.~~ 3. Wastewater flow will not be significantly increased (IDAPA 58.01.03.004.04). Significant increases shall be considered to be any increase in wastewater flow that exceeds the design flow of the system.
4. Area reserved for replacement cannot be used for the addition (IDAPA 58.01.03.004.06).
5. A subsurface sewage disposal permit may be required for system enlargement or adjustments based upon the addition or alteration plan.



- a. A permit may be required due to possible impacts on separation distances from the addition or alteration to the existing subsurface sewage disposal system or due to additional wastewater flows from the addition or alteration that exceeds the original design flow of the system.
- a.b. Permit issuance shall be required in conformance with the subsurface program directive entitled "Permit Requirements for Increased Flows at Single Family Dwellings" issued by DEQ on April 15, 2010.

Abandoned system: An abandoned system is considered to be a system that has not received wastewater flows or blackwaste for 1 year or more due to the removal of a wastewater generating structure from the system. ~~(IDAPA 58.01.03.003.01)~~

1. An abandoned system may be used if the system was originally permitted and approved, and wastewater or blackwaste characteristics are similar to former waste strengths and flow rate received by the system and,
2. The system was originally permitted and approved and, Wastewater flows and blackwaste characteristics are similar to the system's original permit requirements for waste strength and flow rate received by the system, and
3. The site is inspected and approved.
4. If the system is not an approved an unapproved system (i.e., no issuance of previous subsurface sewage disposal permit regardless of installation date), it must be:
 - a. Uncovered by a permitted installer or the property owner (IDAPA 58.01.03.011.02) and,
 - i. Uncovering includes exposure of the septic tank, effluent piping, and the front and back ends of each subsurface disposal trench.
 - b. Pumped by a permitted septic tank pumper and, and
 - c. Inspected by the health district while uncovered (IDAPA 58.01.03.011.02) and,
 - d. The system must Must meet all current requirements, including the issuing issuance of a permit (IDAPA 58.01.03.005.01).
 - i. If the system does not meet all current requirements it must be brought into compliance with the current requirements prior to use according to the issued permit requirements.



- ±.ii. If the system, or any portion thereof, cannot be brought into compliance with the current requirements, the system or portion of the system not in compliance must be abandoned and replaced in compliance with the current requirements and in accordance with the issued permit.



Appendix L

2.5 Ground Water Level

Revision: June 5, 2000 July 18, 2013

2.5.1 Description

Ground water is any water in the State of Idaho which occurs beneath the surface of the earth in a saturated geological formation of rock or soil (IDAPA 58.01.03.003.14). Ground water may be present near the ground surface at normal and seasonal high levels. Seasonal high ground water level is the highest elevation of ground water that is maintained or exceeded for a continuous period of one week per year (IDAPA 58.01.03.003.15.a). Normal high ground water level is the highest elevation of ground water that is maintained or exceeded for a continuous period of six weeks per year (IDAPA 58.01.03.003.15.b).

Subsurface sewage disposal systems and septic tanks must maintain vertical separation distances from the ground water to the bottom of the drainfield (IDAPA 58.01.03.008.02.c) and top of the septic tank (IDAPA 58.01.03.007.17). Ground water may be present year-round or seasonally. Permanent (year-round) ground water levels may fluctuate throughout the year or remain fairly constant. Seasonal ground water levels can fluctuate greatly and are typically affected by runoff or irrigation practices. To ensure separation distances as required by IDAPA 58.01.03 to permanent or seasonal ground water levels are met, determining the normal and seasonal high ground water levels is important.

High ground water levels may be established by the presence of low chroma mottles, historic records, or actual ground water monitoring (IDAPA 58.01.03.003.15). It is recommended and preferred that actual ground water monitoring be performed prior to the issuance of a subsurface sewage disposal permit if the proposed site of a new system is suspected to be effected by ground water levels. This provides insurance that adequate separation distances are maintained from subsurface sewage disposal systems and ground water as required by IDAPA 58.01.03.008.02.c and fulfills the intent of the State of Idaho's ground water policy as outlined in Idaho Code §39-102.3.a, and the intent of the Department of Environmental Quality's ground water policy as outlined in IDAPA 58.01.11.006.05 to prevent contamination of ground water from any source to the maximum extent practical.

In situations where a repair permit must be issued to replace a failing subsurface sewage disposal system it would be appropriate to utilize historic records or the presence of low chroma mottles to establish the normal and seasonal high ground water levels.

The following subsections provide guidance on when and how to utilize low chroma mottles, historic records, and how to perform and interpret actual ground water monitoring.

2.5.21 ~~From the Static Water Level~~ Ground Water Monitoring

Ground water monitoring is the preferred method of determining ground water levels. Over a period of time, ground water levels can be established by recording elevation changes in the ground water's surface, observed through a ~~hole~~-permanent or temporary well.;



2.5.2.1 Monitoring Wells

During preliminary site investigations prior to subsurface sewage disposal permit issuance temporary monitoring wells are the most common type of monitoring well utilized. If continual ground water monitoring is required as a condition of the subsurface sewage disposal installation permit (e.g., Large Soil Absorptions Systems) then permanent monitoring wells are recommended to be installed after permit issuance. The recommended installation and design of both of these well types are provided below.

2.5.2.1.1 Permanent Monitoring Wells

It is recommended that permanent monitoring wells be installed by a professional well driller and that the Idaho Department of Water Resources be consulted to determine the need for a well permit and any required construction standards. Permanent wells should be cased, with perforations in the casing throughout the anticipated zone of saturation. An idealized permanent monitoring well for observing ground water of less than 18 feet deep is shown in Figure 2-3. If a permanent well will be used for water quality monitoring, then it should be:

- ~~4. Newly excavated holes or installed wells should be left undisturbed for 24 hours before observing and recording the ground water's surface elevation.~~

~~Permanent wells should be cased, with perforations in the casing throughout the anticipated zone of saturation. An idealized monitoring well for observing ground water of less than 18 feet deep is shown in Figure 2-3.~~

~~If a permanent well will be used for water quality monitoring, then it should be:~~

- ~~1. Purged or otherwise developed to eliminate installation contamination and silt buildup.~~
- ~~2. Provided with a ground water seal at the annular space between the casing and natural ground to prevent surface water from entering the ground water along the casing's exterior.~~

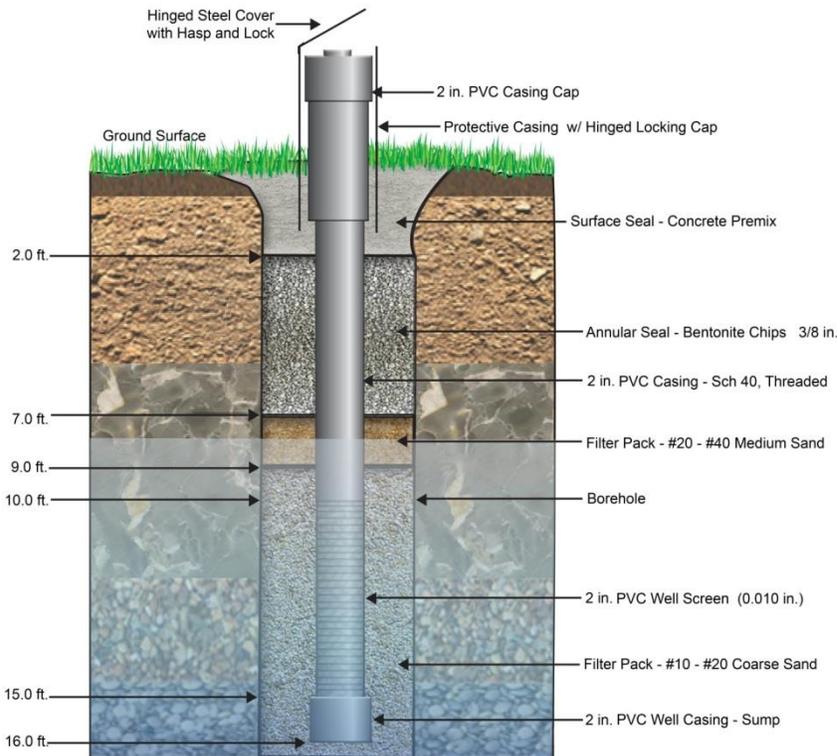


Figure 2-3. [Permanent](#) shallow ground water monitoring well design.

2.5.2.1.2 Temporary Monitoring Wells

Temporary monitoring wells are typically installed at the same time that test pits are excavated and evaluated. Monitoring wells are either placed in the excavated test pit or are placed in a separate hole near the test pit created by an auger. Temporary monitoring wells placed by auger should be no further than 10 feet from the evaluated test pit. More than one temporary monitoring well may be necessary at each site and are highly recommended. Each monitoring well should have an evaluated test pit associated with its placement.

Temporary monitoring wells are typically constructed of perforated or solid plastic pipe at least 1 inch in diameter. Solid plastic pipe should be manually perforated with holes or slits that extend up the pipe through the expected zone of saturation. Temporary monitoring wells should extend 10 feet below ground or to a known limiting layer less than 10 feet deep. Temporary monitoring wells placed to evaluate spring runoff influenced seasonal ground water should be extended above grade high enough to be found through snow pack during the early monitoring period. Removable caps are recommended to be placed on the top of each monitoring well. The bottom end of the monitoring well should not be capped. Geotextile fabric or a filter cloth/sock should be used to wrap the plastic pipe from the bottom of the pipe to a point above the perforations. When backfilling soil around the temporary monitoring well care should be taken to mound fill soil around the well so that a depression does not form in the ground's surface around the mound that will collect surface runoff and artificially raise the ground water level within the monitoring pipe. An idealized temporary monitoring well for observing ground water of less than 18 feet deep is shown in Figure 2-4.

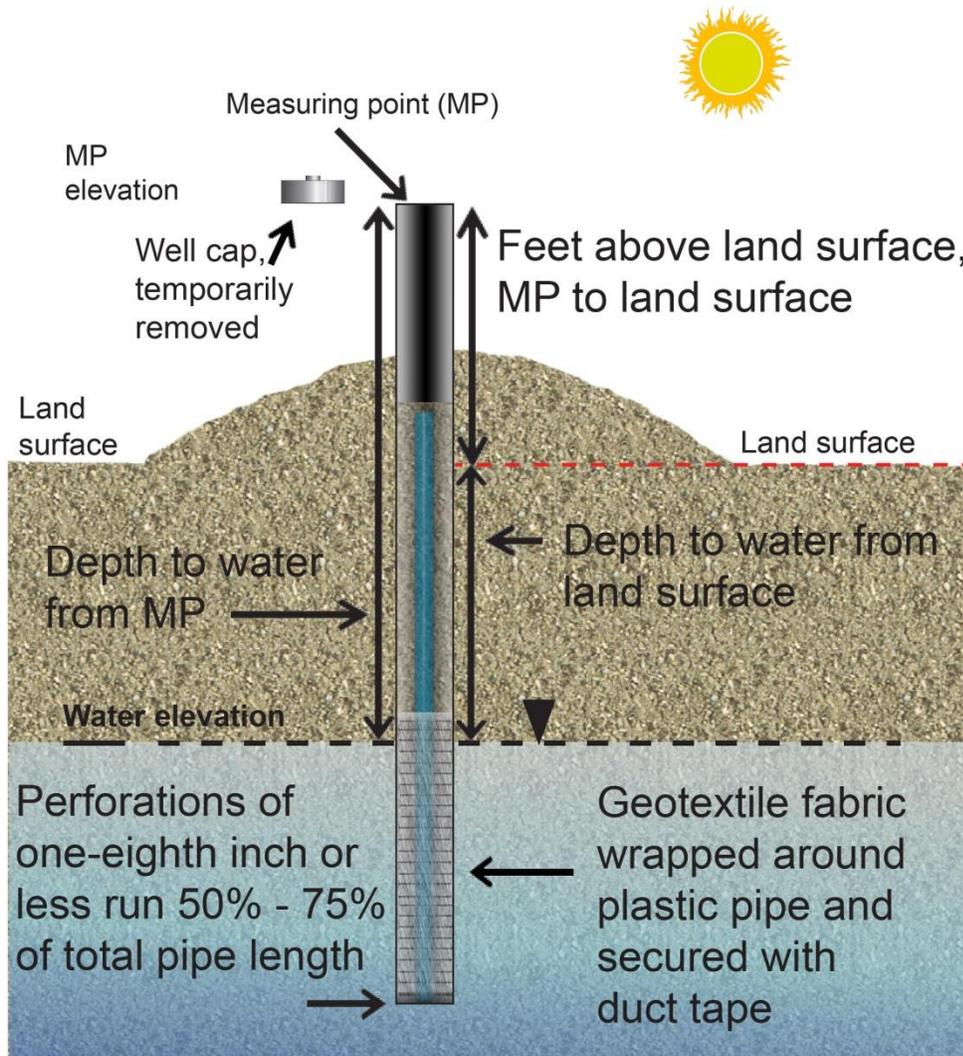


Figure 2-4. Temporary ground water monitoring well design.

2.5.2.2 Measuring the Seasonal Ground Water Level from a Monitoring Well

Seasonal ground water is typically influenced by seasonal runoff of snowmelt, spring rain events, and irrigation practices. The timeframe that these influences affect a property may vary due to location, climate, or agricultural practices. Due to this variability monitoring timeframes required prior to subsurface sewage disposal permit issuance may vary from permit to permit. Monitoring periods may overlap if all of these influences are expected to impact seasonal ground water levels at a proposed subsurface sewage disposal site. Typical timeframes for monitoring based upon ground water influences are as follows:

1. Seasonal runoff and spring rain events
 - a. February 15th through June 30th
2. Irrigation



a. April 15th through October 31st

Monitoring should be performed by the applicant on a weekly basis over the determined monitoring period. Concurrent monitoring at a proposed subsurface sewage disposal site should also be performed by the health district on a monthly basis for verification of ground water levels obtained by the applicant. The monthly verification by the health district also allows for the evaluation of any potential temporary or intermittent surface waters that may exist on the site.

Prior to recording ground water levels from a newly installed permanent or temporary monitoring well, the well should be left undisturbed for 24 hours before observing and recording the ground water's surface elevation. To record the ground water level a standardized location on the top rim of the monitoring well should be marked for the purpose of obtaining ground water measurements from. The following equipment should be utilized to obtain the ground water level below grade:

- A measuring tape that will fit inside the monitoring well
- Carpenter's chalk to coat the initial length of the measuring tape
- Ground water monitoring table that includes the following information:
 - Height of the monitoring well above the native soil surface
 - Total depth of the monitoring well from the top rim to its termination point below ground level
 - Date and time for each measurement
 - Location for recording ground water level from top rim of monitoring well
 - Location for recording the total depth of wetted chalk (indicates how far below the ground water level the measuring tape was inserted)
 - Location for recording the water level below ground surface (ground water level measurement minus the wetted chalk depth minus the height of the monitoring well above the native soil surface)
 - Location for date specific notes (e.g., weather, well conditions, recorder, etc.)

The following steps should be taken at each monitoring well to obtain the ground water level:

1. Coat the initial foot or two of the measuring tape with carpenter's chalk
2. Lower the measuring tape down the monitoring well with the tape against the identified measuring point on the top rim of the monitoring well



- a. This should occur at a rapid rate so it can be heard when the measuring tape encounters the top of the ground water level
- 3. Once it is verified that the tape has either encountered the top of the ground water level or the bottom of a dry monitoring well record the value on the measuring tape that is identified at the measuring point on the top rim of the monitoring well
- 4. Slowly remove the measuring tape from the monitoring well and obtain the total wetted chalk measurement
- 5. Determine the ground water depth below native ground level by subtracting the wetted chalk measurement and height of the monitoring well above native ground from the measurement obtained in step 3.

Care should be taken not to insert items of large diameter into the ground water through the monitoring well to obtain ground water level measurements. This may cause water displacement and artificially raise the ground water level. Ground water monitoring should continue throughout or past the expected monitoring period until it is determined that the seasonal and normal high peaks have occurred and will not be exceeded.

2.5.2.3 Determining Seasonal and Normal High Ground Water Levels

Seasonal and normal high ground water levels can be determined once the weekly monitoring for the designated monitoring period is completed. The seasonal high ground water level is the weekly measurement that is the highest level recorded during the monitoring period. The highest level is the measurement that equates to the shallowest depth from the native ground level to the ground water level.

The normal high ground water level is the highest elevation of ground water that is maintained or exceeded for a continuous period of six weeks per year. This determination may include the seasonal high ground water level week, but may fall outside of the seasonal high peak. **If the determination of the normal high ground water falls outside of the seasonal high peak it is because the highest ground water level that is maintained or exceeded for a continuous period of six weeks falls within this time frame (IDAPA 58.01.003.15.a). A normal high ground water level that falls in a six week block of time that does not include the seasonal high ground water level will be more restrictive than what would be determined by the six week block of time that included the seasonal high ground water level. The determination is demonstrated in Table 2-11 and Table 2-12.**

<u>Monitoring Week</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
<u>Ground Water Level (inches below native grade)</u>	<u>69</u>	<u>62</u>	<u>65</u>	<u>53</u>	<u>46</u>	<u>40</u>	<u>47</u>	<u>66</u>	<u>72</u>

Table 2-11. Determination of seasonal ground water levels where the seasonal high ground water level and normal high ground water level occur within the same six week block of time.



In Table 2-11 the seasonal high ground water level occurs within the six week block of time that defines the normal high ground water level. The seasonal high occurs in week 6 and is 40 inches below native grade. The six week block of time that defines the normal high ground water level occurs from week 2 through 7. During this time the lowest ground water level recorded from native grade occurs on week 3 so the normal high ground water level is 65 inches below native grade.

<u>Monitoring Week</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
<u>Ground Water Level (inches below native grade)</u>	<u>23</u>	<u>24</u>	<u>19</u>	<u>23</u>	<u>21</u>	<u>22</u>	<u>25</u>	<u>16</u>	<u>20</u>

Table 2-12. Determination of seasonal ground water levels where the seasonal high ground water level occurs outside the six week block of time that determines the normal high ground water level.

In Table 2-12 the seasonal high ground water level occurs outside of the six week block of time that defines the normal high ground water level. The seasonal high occurs in week 8 and is 16 inches below native grade. The six week block of time that defines the normal high ground water level occurs from week 1 through 6. During this time the lowest ground water level recorded from native grade occurs on week 2 so the normal high ground water level is 24 inches below native grade. This meets the requirements of IDAPA 58.01.03.003.15.a in that 24 inches is the highest elevation of ground water that is maintained or exceeded for a continuous period of six weeks.

2.5.32 From Soil Condition Low Chroma Mottles

If the static ground water level cannot be determined through ground water monitoring due to the time of year the soil profile is observed, but its presence at some time in the year is suspected, its level can be predicted by looking for the presence of the following soil conditions:

- ~~3-6.~~ Reddish-brown or brown soil horizons with grey mottles that have a chroma of two or less and red or yellowish-red mottles.
- ~~4-7.~~ Grey soil horizons that have a chroma of two or less, or grey soil horizons with red, yellowish-red, or brown mottles.
- ~~5-8.~~ Dark-colored, highly organic soil horizons.
- ~~6-9.~~ Soil profiles with soluble salt concentrations at or near the ground surface.

Exercise e Care should be exercised in interpreting soil conditions as an indicator of high ground water. Mottling may be the artifact of past ground water from geologic time. Some soils do not readily indicate mottling, especially those with high ferric (Fe⁺⁺⁺) iron content and in areas with newly-established water tables or where the brown color is from iron bacteria. Figure 2-3 shows the typical design of a shallow ground water monitoring well.



2.5.4 Historical Records

Historical records are another method that may be used to determine seasonal and normal high ground water levels for a proposed subsurface sewage disposal system. Historical records should be those that evaluate unconfined aquifers or perched seasonal water tables. Well drilling records may not be suitable in all circumstances and must be evaluated on a case by case basis if available. Historical records should be composed of ground water monitoring data as described in section 2.5.2 to be used for determination of ground water levels at a proposed site.

All historical records available for properties immediately surrounding the applicant's property should be utilized in the determination of ground water levels. Other records from nearby properties should also be evaluated in order to gain an understanding of ground water levels for the immediate area with an emphasis placed on records for properties closest to the applicant's property. A conservative approach should be utilized in this evaluation and the most restrictive ground water level record within those historical records should be used for permit issuance.

2.5.5 Low Water Years

Care should be taken when reviewing ground water monitoring records related to spring runoff during low water years. Snow-water equivalents of less than 75% of normal would be considered an extremely low water year. Ground water monitoring performed during these years may need to be repeated due to below normal ground water levels. Information regarding the snow-water equivalent reading is available through NRCS.



Appendix M

3.3 Wastewater Flows

Revision: July 18, 2013

Assigning wastewater flow projections to a proposed subsurface sewage disposal system is necessary to adequately design the system and is required as part of the permit application by IDAPA 58.01.03.005.04.j. The term *wastewater flow* refers to the amount of wastewater a structure will generate in gallons per day. These flow estimates provide the basis for determining the minimum septic tank volume and subsurface disposal system sizing (IDAPA 58.01.03.007.07.b and 58.01.03.008.03.a). For most proposed projects IDAPA 58.01.03.007.08 is used for providing the quantitative daily wastewater flow estimates necessary to design the proposed subsurface sewage disposal system.

Due to the limited number of commercial/industrial establishments and flow scenarios provided in IDAPA 58.01.03.007.08 not all proposed commercial or industrial projects will be capable of proposing daily wastewater flows based off of this rule. IDAPA 58.01.03.005.04.d provides the applicant the allowance to propose wastewater flows through other appropriate measures to adequately size the subsurface sewage disposal facility. Daily wastewater flow projections may be provided from other sources when a proposed residential, commercial, or industrial project is not covered by IDAPA 58.01.03.007.08, or when an applicant feels that the daily wastewater flow projections for a commercial or industrial facility provided in IDAPA 58.01.03.007.08 are higher or lower than actual daily peak wastewater use for similar facilities.

Other appropriate measures for daily wastewater flow estimation as described in IDAPA 58.01.03.005.04.d must include the nature and quantity of wastewater the system will receive. Adequate documentation must be submitted with the permit application detailing the basis for the estimate of the quantity of wastewater and its nature (IDAPA 58.01.03.005.04.j). Included in the adequate documentation should be a description of the commercial or industrial facility's proposed operation, referred to as a Letter of Intended Use. Letter of Intended Use requirements elements are described in section 3.3.1. Appropriate measures and documentation for the provision of empirical wastewater flow data that is not provided in IDAPA 58.01.03.007.08 is described in section 3.3.2.

3.3.1 Letter of Intended Use

As part of the permit application the applicant must provide information regarding the type of establishment served (IDAPA 58.01.03.005.04.c), the nature and quantity of wastewater the system will receive (IDAPA 58.01.03.005.04.j), and provide documentation that substantiates that the proposed system will comply with IDAPA 58.01.03 (IDAPA 58.01.03.005.04.o). This information should be included in a Letter of Intended Use that contains the following minimum requirements elements:

- A description of the commercial/industrial processes that are occurring within the facility



- The type of business that is to be discharging to the subsurface sewage disposal system and the processes involved in its operations.
- The maximum number of employees and customers within the facility at any given time now or in the future if expansion is to occur later.
- The estimated daily wastewater flow that may be produced by the domestic, commercial, and industrial uses occurring within the facility.
 - Estimated daily wastewater flow projections must either be supported by IDAPA 58.01.03.007.08 or follow the guidance regarding empirical wastewater flow data as provided in section 3.3.2.
- A completed copy of the non-domestic wastewater application checklist
 - The characteristics of the non-domestic wastewater should be supported with adequate documentation.

3.3.2 Empirical Wastewater Flow Data

Empirical wastewater flow data is collected from similar facilities as the one proposed in the subsurface sewage disposal permit application. The wastewater flow data is typically collected from facilities that are connected to a public water system or other water source that is capable of providing water meter data for daily, weekly, or monthly water use by the facility. The daily wastewater flow is estimated based upon the usage of the potable water being used by the facility as determined by the water meter data. It is often necessary to convert the data that is able to be obtained into gallons per day as most utilities and public water systems do not meter water by the gallon. The volume of water provided in a water usage history should be verified for the correct meter units.

Evaluated facilities should be located within the State of Idaho if possible, but may be from any region within the State. Unique facilities that may not be found elsewhere in the State may utilize similar facilities from other States. Facilities should be able to be compared to the proposed facility and be able to assign a daily wastewater flow estimate on a per unit basis. Units may include employees, meals, visitors, or any other quantifiable unit applicable to the proposed facility. If the proposed facility will produce non-domestic wastewater (i.e., wastewater from sources other than hand sinks, toilets, showers/bathtubs, non-commercial kitchens, and washing machines), then the wastewater data must also include the characterization of the proposed commercial or industrial wastewater to be discharged to the subsurface sewage disposal system in addition to the daily wastewater flow data.

The time of year that water usage data is collected and evaluated should be representative of the proposed facility's peak usage timeframe. If possible, it is recommended that water consumption devoid of irrigation flows be provided. This may be accomplished by locating facilities that do not have landscaping to irrigate or by eliminating the irrigation season from the evaluation. Eliminating the irrigation season from the water data evaluation should only be used for facilities that do not have their peak facility use occur over this timeframe. Water usage data that does not include the irrigation season typically occurs from November through February.



Adequate documentation of daily wastewater flows may vary on a case-by-case basis. The following list of water usage data will be considered adequate for most circumstances:

- Water usage data from a minimum of three facilities of similar operation should be provided for review.
 - The facilities should be connected to a public or private water system for which monthly water use records are kept that can be readily converted to average gallons per day flows.
 - Water usage data should be provided in writing by the water system operator.
 - Statistics should be provided on each facility's operation that are pertinent to the wastewater flow estimation (e.g., number of employees, number of children attending a childcare, number of meals served per day for restaurants, occupancy per day of a hotel or RV park, etc.).
 - Statistical data for each facility should be provided in writing by the facility providing the data.
- Water usage data should occur over an adequate timeframe to provide data that is applicable to the design flows for subsurface sewage disposal permit issuance.
- Wastewater characterization for non-domestic wastewater sources (including the non-domestic wastewater application checklist found on DEQ's website).
- Other facility specific data the Director feels is reasonable and necessary for daily wastewater flow estimation evaluation.

The Director shall evaluate the data provided to determine an acceptable flow. If the Director determines that any data provided is inadequate for assessment, the facility the data applies to will not be included in the evaluation process. The provision of empirical wastewater flow data in lieu of utilizing the wastewater flows provided in IDAPA 58.01.03.007.08 does not guarantee that the daily wastewater flow projection will be less than what is provided by IDAPA 58.01.03.007.08.



Appendix N

4.25 Sand Mound

Revision: ~~October 23~~ July 18, 2013~~2~~

4.25.1 Description

A sand mound is a soil absorption facility consisting of a septic tank, ~~pumping-dosing chamber or dosing siphon and chamber~~, mound ~~fill constructed~~ of ~~selected medium~~ sand, with a ~~pressurized~~ small-diameter pipe distribution system, ~~cap~~, and topsoil ~~cap~~. ~~Figure 4-26~~ Figure 4-27 provides a diagram of a sand mound.

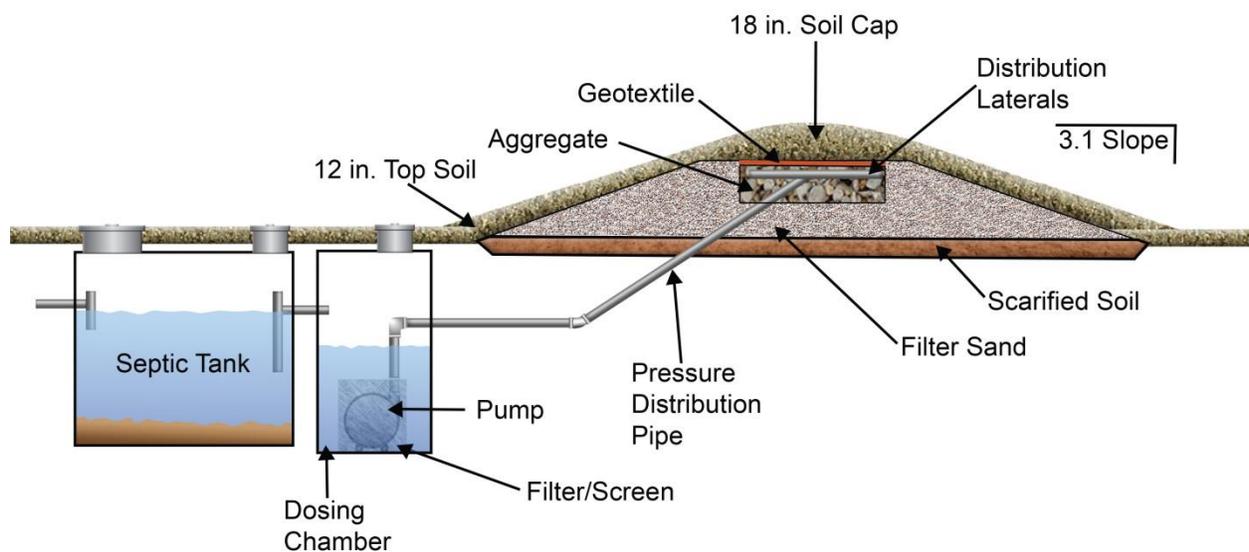


Figure 4-27. Cross sectional view of sand mound.

4.25.2 Approval Conditions

1. Effective soil depth to limiting layers may vary depending upon thickness of filter sand beneath the absorption bed:
 - a. If 12 inches of filter sand is placed beneath the absorption bed, then Table 4-21 lists the minimum depth of natural soil to the limiting layer.
 - b. If 24 inches of filter sand is placed beneath the absorption bed, ~~and the dosing recommendations in section 4.25.4 are met~~, then Table 4-19 in Section 4.23 “Intermittent Sand Filter,” identifies the effective soil depth to limiting layers.
- ~~2. For soil textural classifications of sandy clay, silty clay, clay, or coarser textured soils with percolation rates from 60 to 120 minutes/inch, the minimum depth of natural soil to the limiting layer shall conform to soil design group C.~~



3.2. Table 4-22 shows the maximum slope of natural ground, listed by soil design group.

4.3. Sand mound must not be installed in flood ways, areas with large trees and boulders, in concave slopes, at slope bases, or in depressions.

5.4. Minimum pretreatment of sewage before disposal to the mound must be a septic tank sized according to IDAPA 58.01.03.007.07.

5. The maximum daily wastewater flow must be equal to or less than 1,500 GPD.

6. Design flow must be 1.5 times the wastewater flow.

Table 4-21. Minimum depth of natural soil to limiting layer.

Soil Design Group	Extremely Impermeable Layer (feet)	Extremely Permeable Layer (feet)	Normal High Ground Water (feet)
A, B	3	3	3
C	3	2	2

Table 4-22. Maximum slope of natural ground.

Design Group	A	B	C-1	C-2
Slope (%)	20	20	12	6

4.25.3 Design

1. Absorption ~~Bed-bed~~ design:
 - a. Only absorption beds may be used. The maximum absorption bed disposal area should be 2,250 ft² (A x B). Beds ~~in commercial or large systems~~ should be a maximum of 15 feet wide (B ≤ 15 feet), and beds for individual dwellings a maximum of 10 feet wide (B ≤ 10 feet). Beds should be as long and narrow as practical, particularly on sloped ground, to minimize basal loading. It is recommended that beds be less than 10 feet wide if site conditions will allow.
 - b. Application rate of effluent in the sand bed should be calculated at 1.0 gallon/ft² (sand HAR = 1.0 gallon/ft²).
 - ~~c. Absorption beds for commercial establishments that discharge other than normal strength domestic waste should be sized at 0.5 gallon/ft² or 40 pounds BOD/acre/day, whichever is greater.~~
 - ~~d.c.~~ _____ Absorption bed must be filled with 9 inches of clean drainrock, 6 inches of which must be below the pressurized distribution pipes.



~~d. Drainrock portion of the sand mound~~ The absorption bed drainrock must be covered with a geotextile after installation and testing of the pressure distribution system.

e. Two observation ports should be installed extending from the drainrock/medium sand interface through the soil cap at approximately the 1/4 and 3/4 points along the absorption bed. The observation ports should contain perforations in the side of the pipe extending up 4 inches from the bottom of the port. Observation ports must be capped.

f. Absorption bed disposal area or dimensions may not be reduced through the use of extra drainrock, pretreatment, or gravelless drainfield products.

g. Pressurized laterals within the absorption bed should not be further than 24 inches from the absorption bed sidewall and should not be spaced farther than 48 inches between each lateral within the absorption bed.

e.h. Orifice placement should be staggered between neighboring laterals.

2. Medium Sand-sand fill design:

a. ~~Filter Mound sand fill~~ must conform to ~~ASTM C-33, with less than 2% passing the #200 sieve~~ the medium sand definition provided in section 2.1.4 of this manual. A manufactured sand is recommended.

b) Minimum depth of medium sand below the absorption bed shall be 1 foot.

c) Medium sand fill shall extend out a minimum of 24 inches level from the top edge of the absorption bed on all sides (medium sand fill absorption perimeter), and then uniformly slope as determined by the mound dimensions and the slope limitations as described in 4.25.3.2.f.

d) Flat sites: The effective area will be $A \times (C+B+D+2(H))$.

e) Sloped sites: The effective area will be $A \times (B+D+H)$.

Equation 4-16 shows the calculation for the absorption bed area.

$$\frac{\text{Design Flow (GPD)}}{\text{Soil Application Rate (GPD/ft}^2\text{)}}$$

Equation 4-16. Effluent application area.

f) Slope of all sides must be 3 horizontal to 1 vertical (3:1) or flatter.



~~f)g)~~ Sand fill area must be as long and narrow as practical, with plan view dimension G exceeding dimension F (Figure 4-27).

h) Slope correction factors as provided in Table 4-23 should be used to determine the downslope width of the medium sand fill for sloped sites.

Table 4-23. Down slope correction factors for sloped sites.

<u>Slope (%)</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>
<u>Correction Factor</u>	<u>1.03</u>	<u>1.06</u>	<u>1.10</u>	<u>1.14</u>	<u>1.18</u>	<u>1.22</u>	<u>1.27</u>	<u>1.32</u>	<u>1.38</u>	<u>1.44</u>	<u>1.51</u>	<u>1.57</u>	<u>1.64</u>	<u>1.72</u>	<u>1.82</u>	<u>1.92</u>	<u>2.04</u>	<u>2.17</u>	<u>2.33</u>	<u>2.50</u>

Figure 4-27 can be used with Table 4-23 (sand mound design checklist) for flat and sloped sites.

3. Soil cap design:

a) Sand mound must be covered with a minimum topsoil depth of 12 inches. The soil cap at the center of the mound must be crowned to 18 inches to promote runoff.

g)b) Topsoil and soil cap must be a sandy loam, loamy sand, or silt loam. Soils meeting the soil design group classifications of A and C shall not be used for the topsoil and soil cap cover.

c) Mound should be protected to prevent damage caused by vehicular, livestock, or excessive pedestrian traffic. The toe of the mound must be protected from compaction.

h)d) Mounds on slopes should have design considerations taking surface runoff diversion into account.

~~e) Sand fill area must be as long and narrow as practical, with plan view dimension G exceeding dimension F (Figure 4-27).~~

4.25.4 Dosing Recommendations

1. Timed dosing should be utilized.

a. Surge capacity should be considered to be incorporated into the dosing chamber.

2. Dose time should be short and the frequency of the doses should be high.

a. Maximum dose volume reaching the bed should not exceed 20% of the daily design flow prior to the addition of the safety factor.

3. Distribution piping orifices should be closely spaced.



a. Recommended spacing is 4 – 6 ft² of disposal area per orifice.

1.4. Dosing volume should be roughly 5 times the volume of the lateral pipe volume, but should not exceed 20% of the design volume.

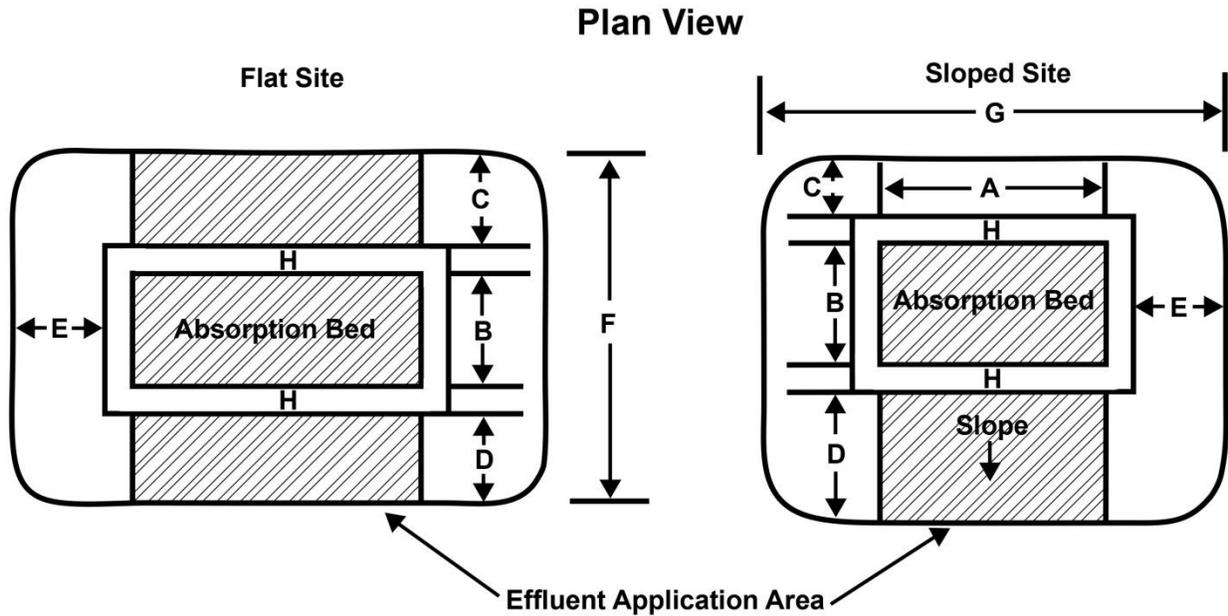


Figure 4-27. Design illustrations for sand mound installation on flat and sloped sites (use with sand mound design checklist).



98	Flat site perimeter (C,D): $0.5 \times [EAA (\#78)/length (\#5)]$ <u>Perimeter width must meet or exceed dimension meeting a 3:1 slope</u> (Example: $0.5 \times [458-308 \text{ ft}^2/37.5 \text{ feet}] = 64.1 \text{ feet}$)	(C) = (D) = feet (5.25 feet minimum <u>for 3:1 slope in 12 in. mound, 8.25 feet minimum for 3:1 slope in 24 in. mound</u>) (Example: <u>64.1 feet, use default of 5.25 to meet minimum slope</u>)
109	Sloped site: Downslope length (D) = $[EAA (\#78)/length (\#5)] \times DCF$ <u>Downslope width must meet or exceed the dimension meeting a 3:1 slope based on down slope height of the medium sand fill absorption bed perimeter</u> (Example: $D = [458-383 \text{ ft}^2/37.5 \text{ feet}] \times 1.0 = 4210.2 \text{ feet}$)	(D) = feet (Example: <u>4210.2 feet</u>)
110	Sloped site: Upslope (C) = (Bed depth + max. sand depth) x 3 <u>Upslope width must meet or exceed the dimension meeting a 3:1 slope based on upslope height of the medium sand fill absorption bed perimeter</u> (Example: $C = [0.75 \text{ feet} + 1.0 \text{ foot}] \times [3] = 5.25 \text{ feet}$)	(C) = feet (Example: 5.25 feet)
124	End slope (E) = (Bed depth + max. sand depth) x 3 <u>End slope width must meet or exceed the dimension meeting a 3:1 slope based on the height of the medium sand fill absorption bed perimeter at the absorption bed ends</u> (Example: $[0.75 \text{ feet} + 1.0 \text{ feet}] \times [3] = 5.25 \text{ feet}$)	(E) = feet (Example: 5.25 feet)
132	Total width (F) = B + C + D + <u>2(H)</u> (Flat site example: 10 feet + 6.1 feet + 6.1 feet = 22.2 feet) <u>(Sloped site example: 10 feet + 5.25 feet + 12.2 feet = 27.45 feet)</u>	(F) = feet (Example: 22.2 feet) <u>(Example: 27.45 feet)</u>
143	Total length (G) = A+(2 x E) + <u>2(H)</u> (G > F) (Example: $[G] = 37.5 \text{ feet} + [2 \times 5.25 \text{ feet}] = 48 \text{ feet}$)	(G) = feet (Example: 48 feet)
Finished Mound Dimensions		
14	<u>Sand mound length + 6 feet min. (G + 6)</u> <u>(Example: 48 feet + 6 feet = 54 feet)</u>	<u>(G+6) = feet</u> <u>(Example: 54 feet)</u>
15	<u>Sand mound width + 6 feet min. (F + 6)</u> <u>(Flat site example: 22.2 feet + 6 feet = 28.2 feet)</u> <u>(Sloped site example: 27.45 feet + 6 feet = 33.45 feet)</u>	<u>(F+6) = feet</u> <u>(Example: 28.2 feet)</u> <u>(Example: 33.45 feet)</u>

Note: gallons per day per square foot (GPD/ft²), downslope correction factor (DCF)



4.25.54 Construction

1. Pressure line from the dosing chamber should be installed first ~~and should be located upslope of the mound. The pressure line should slope down to the pump so that the pressure line will drain between discharges.~~ If the sand mound is located downslope of the pump chamber, consider using anti-seep collars on the trench. ~~If a pump is to be used, the pressure line should slope down to the pump so that the pressure line will drain between discharges.~~
2. ~~Grass, and shrubs, and trees~~ must be cut close to ground surface and removed from the mound site.
 - a. If extremely heavy vegetation or organic mat exists, these materials should be removed before scarification and replaced with filter sand (typically 3 or 4 inches of filter sand is added).
 - b. Larger than two inch caliper trees and large boulders are not to be removed. Trees should be cut as close to ground level as possible and the stumps left in place. If stumps or boulders occupy a significant area in the mound placement area, additional area should be calculated into the total basal area of the mound to compensate for the lost infiltrative area.
- ~~2.3.~~ When the soil is dry, and site vegetation has been cut or removed the ground in the basal placement area of the sand ~~fill mound~~ should ~~then~~ be scarified or ripped to a depth of 6–8 inches. Scarification/ripping is important to provide vertical windows in the soil. ~~Tree stumps are not to be removed. If stumps are numerous, additional area should be calculated into the total sand area to compensate for the lost area.~~
- ~~3.4.~~ Sand fill will then be placed and shaped before it freezes or rains. No vehicles with pneumatic tires should be permitted on the sand or ~~plowed-scarified~~ area to prevent the soils from being compacted. For sloped sites, all work ~~is should be~~ done from the upslope side of the mound placement area if possible.
5. Absorption bed will be shaped and filled with clean drainrock.
- ~~4.6.~~ Two observation ports should then be installed extending from the drainrock/medium sand interface through the soil cap at approximately the 1/4 and 3/4 points along the absorption bed. The observation ports should contain perforations in the side of the pipe extending up 4 inches from the bottom of the port. Observation ports must be capped.
- ~~5.7.~~ After leveling the drainrock, the low-pressure distribution system manifold and laterals will be installed. The system should be tested for uniformity of distribution.



~~6.8.~~ Geotextile must be placed over the absorption bed and backfilled with 12 inches of soil on the sides and shoulders, and 18 inches of soil on the top center. Soil types must be sandy loam, loamy sand, or silt loam.

~~7.9.~~ Typical lawn grasses ~~and-or~~ other appropriate low-profile vegetation should be established on the mound cap as soon as possible, preferably before the system is put into operation. Do not plant trees or shrubs on the mound, or within the mature rooting radius of the tree or shrub. Trees with roots that aggressively seek water ~~must-should~~ be planted at least 50 feet from the mound (e.g.i.e., poplar, willow, cottonwood, maple, elm, etc.).

~~8.~~ A standpipe must be installed within the bed, down to the fill sand, so that ponding water can be measured periodically.

4.25.65 Inspections

~~9.10.~~ Site inspections ~~must be made by the Director before, during, and after construction shall be conducted by the Director at the following minimum intervals (IDAPA 58.01.03.011.01):~~

a. Pre-construction

i. Recommended that pre-construction conference be conducted with the Director, design engineer, complex installer, and property owner (if available) present.

b. During construction as needed

i. Scarification, pressure line installation, medium sand mound construction, absorption bed construction, pressure distribution piping

c. Final construction inspection

i. Pump drawdown/alarm check, pressure test of distribution network, soil cap material and placement

~~10.11.~~ The ~~d~~ Designer engineer or owner must certify that the system has been installed according to the approved plans and provide as-built plans for the sand mound construction (IDAPA 58.01.03.005.15).

Table 4-23 is a sample sand mound design checklist, and Table 4-24 is a blank checklist for sand mound design.



Table 4-24. Sand mound design checklist.

Sand Mound Design Checklist		
1	Determine soil application rate (AR)	AR = _____ GPD/ft ²
2	Determine daily flow rate (DFR) <u>DFR = GPD x 1.5</u>	DFR = _____ GPD
Absorption Bed Design		
3	$Area = \frac{Daily_Flow_Rate_GPD(\#2)}{Sand_Application_Rate_GPD/ft^2(1.0_GPD/ft^2)}$	Area = _____ ft ²
4	Width (B): $Width_{(B)} = \sqrt{\frac{Area_{(\#3)} \times Soil_AR_{(\#1)}}{Sand_Application_Rate_{(1.0\ GPD/ft^2)}}}$ Maximum bed width: <u>Commercial = 15 feet</u> <u>Residential = 10 feet</u>	Width (B) = _____ ft
5	Length (A): $Length_{(A)} = Area_{(\#3)} / Width_{(\#4)}$	(A) _____ ft
Sand Mound Design		
6	Total area (TA): $EAA = DFR_{(\#2)} / soil_AR_{(\#1)}$	TA = _____ ft ²
<u>7</u>	<u>Medium sand fill perimeter area (SFAP)</u> <u>Flat site: SFAP = 2 x [2 feet x length (#5)]</u> <u>Sloped site: SFAP = 2 feet x length (#5)</u>	<u>SFAP = _____ ft²</u>
<u>78</u>	Effluent application area (EAA) = Total area – (Bed area + SFAP): $EAA = TA_{(\#6)} - [Area_{(\#3)} + SFAP_{(\#7)}]$	EAA = _____ ft ²
<u>89</u>	Flat site perimeter (C,D): 0.5 x [EAA (#78)/length (#5)] (5.25 feet minimum)	(C) = (D) = _____ ft
<u>910</u>	Sloped site: Downslope length (D) = [EAA (#78)/length (#5)] x DCF	(D) = _____ ft
<u>1011</u>	Sloped site: Upslope (C) = (Bed depth + max. sand depth) x 3	(C) = _____ ft
<u>1112</u>	End slope (E) = (Bed depth + max. sand depth) x 3	(E) = _____ ft
<u>1213</u>	Total width (F) = B + C + D + <u>2(H)</u>	(F) = _____ ft
<u>1314</u>	Total length (G) = A + (2 x E) + <u>2(H)</u> (G > F)	(G) = _____ ft
Finished Mound Dimensions		
<u>14</u>	<u>Sand mound length + 6 feet min. (G + 6)</u>	<u>(G+6) = _____ ft</u>
<u>15</u>	<u>Sand mound width + 6 feet min. (F + 6)</u>	<u>(F+6) = _____ ft</u>
<u>Note: gallons per day per square foot (GPD/ft²), <u>downslope correction factor (DCF)</u></u>		



Appendix O

2.2.3 The Method of 72 to Determine Effective Soil Depths to Porous Layers and Ground Water

Often times effective soil depths as required by IDAPA 58.01.03.008.02.c are not achievable due to various site conditions. In response to this issue section 2.2.1 provides guidance for reducing separation distances to limiting layers based upon soil design subgroups. In some situations this guidance does not go far enough to address these site limitations, nor does it provide guidance on how to approach separation distances to limiting layers when the soil profile is variable and does not meet the minimum effective soil depths as described in IDAPA 58.01.03.008.02 or table 2-6, or when the In-trench Sand Filter system design is utilized. To ~~address provide further guidance in~~ these situations the ~~Technical Guidance Committee has developed the~~ Method of 72 should be utilized.

The Method of 72 is based upon assigning treatment units to soil design subgroups. Treatment units assigned to soil design subgroups are extrapolated from the effective soil depths required by IDAPA 58.01.03.008.02.c. Based on this rule it can be determined that 72 treatment units are necessary from the drainfield-soil interface to the porous layer/ground water to ensure adequate treatment of effluent by the soil. Table 2-7 provides the treatment units assigned to each soil design subgroup.

Table 2-7. Treatment units assigned to each soil design subgroup per foot and per inch. (~~*Medium sand receives an additional 6 treatment units for the sand-native soil interface~~)

Soil Design Subgroup	A-1 / Medium Sand*	A-2	B-1	B-2	C-1	C-2
Treatment Units Per 12 Inches of Soil	12	14.4	18	24	24	28.8
Treatment Units Per Inch of Soil	1	1.2	1.5	2	2	2.4

2.2.3.1 Native Soil Profiles and the Method of 72

When the soil profile contains multiple suitable layers, but no layer is thick enough to meet the separation guidance provided in IDAPA 58.01.03.008.02.c or table 2-6, an individual may utilize the Method of 72 to determine the suitable separation distance for the proposed drainfield site. The following example is based off of the soil profile identified in figure 2-3.

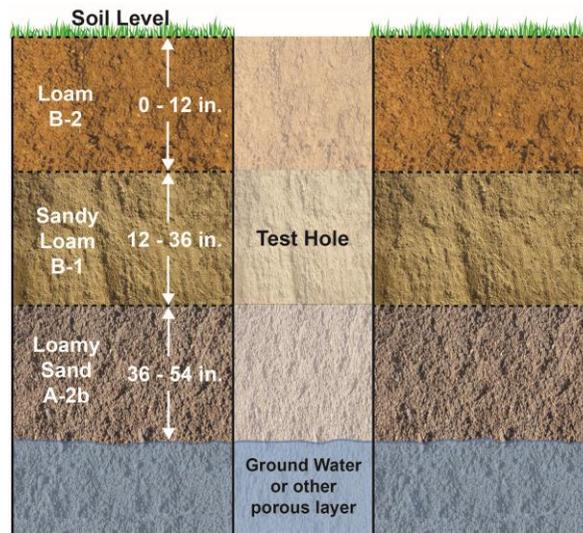


Figure 2-3. Test hole profile utilized in example 1.

Example 1:

Based upon the soil profile in figure 2-3 and the treatment units from table 2-7 the following treatment unit equivalent would be ascribed:

$$\text{Treatment Units} = 24 + 36 + 21.6 = 81.6$$

Since this is the treatment unit equivalent from grade to the porous layer or normal high ground water level the installation depth must still be determined. In this particular instance the soil profile has 9.6 treatment units more than the minimum necessary to be considered suitable for a standard alternative drainfield. To determine installation depth utilize the upper layer of the soil profile where the system will be installed and determine the treatment units per inch of soil. Once the treatment units per inch are known the depth of allowable installation can be determined.

$$24 \text{ treatment units} / 12 \text{ inches of B-2 soil} = 2 \text{ treatment units per inch}$$

$$\begin{aligned} \text{Installation depth} &= 9.6 \text{ excess treatment units} / 2 \text{ treatment units per inch} \\ \text{Installation depth} &= 4.8 \text{ inches} \end{aligned}$$

In this example a standard basic alternative system can be permitted. The system design would be a capping fill trench with a maximum installation depth of 4.5 inches below grade.

2.2.3.2 In-Trench Sand Filters and the Method of 72

The Method of 72 may also be used in determining the necessary depth of medium sand required for installation between a drainfield and the native soils overlying a porous limiting layer or normal high ground water. Installation of medium sand may be necessary to access suitable soils below an unsuitable soil layer. In this application an additional 6 treatment units are allotted for the medium sand and native soil interface. Medium sand is classified under the A-1 soil design subgroup providing 12



~~treatment units per foot of medium sand. Treatment units for native soils are provided in table 2-7.~~ The following example is based off of the soil profile identified in figure 2-4.

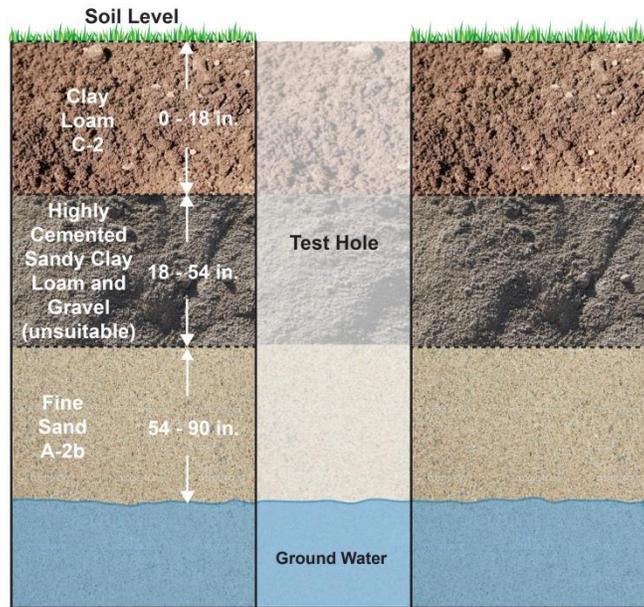


Figure 2-4. Test hole profile utilized in example 2.

Example 2:

In this example the site soils must be excavated down to 54 inches to access suitable soils. This leaves 36 inches of A-2b soils, providing 43.2 treatment units. ~~An additional 6 treatment units is then added for the medium sand – native soil interface, for a total of 49.2 treatment units.~~ The amount of medium sand required to be backfilled prior to system installation would be determined as follows:

$$\text{Remaining treatment units} = 72 - 4943.2 = 2228.8$$

$$\text{Depth of medium sand required} = 2228.8 \text{ treatment units remaining} / 1 \text{ treatment unit per inch}$$

$$\text{Depth of medium sand required} = 2329 \text{ inches}$$

Thus the medium sand would be backfilled to a depth of ~~31-25~~ inches below grade. The drainfield would then be installed on top of the leveled medium sand.

Note: Regardless of soil profile and treatment units necessary, drainfields must be installed no deeper than 48 inches below grade per IDAPA 58.01.03.008.04. Drainfield depth restrictions only apply to the aggregate as defined in IDAPA 58.01.03.008.08 or the gravelless trench components approved in section 5.6 of this manual. Medium sand may be installed to any depth necessary to reach suitable soils as long as the excavation and installation of the medium sand meet the requirements of section 4.24 of this manual.



Appendix P

4.24 In-Trench Sand Filter

Revision: ~~May 1, 2000~~ July 18, 2013

4.24.1 Description

An in-trench sand filter is a standard trench or bed system receiving effluent by either gravity or low-pressure flow, under which is placed a filter of medium sand meeting the definitions provided in section 2.1.4. ~~An acceptable modification~~The standard design is typically used to excavate through impermeable or unsuitable soil layers down to ~~more~~ permeable or suitable soils. The standard design may also ~~and~~ have place clean pit run sand and gravel placed between the medium sand and more permeable soils or ground water as long as minimum medium sand depths are utilized. A modified design to the standard in-trench sand filter is known as the enveloped in-trench sand filter. Enveloped in-trench sand filters consist of a disposal trench with medium sand placed below and to the sides of the ~~drainrock~~ drainfield and are utilized for sites with native soils consisting of very coarse sand. A complex installer's permit is needed to install pressurized in-trench sand filters and enveloped in-trench sand filters. A basic installer's permit may be used to install gravity flow in-trench sand filters that are not preceded by any complex alternative system components.

The term drainfield only applies to the aggregate as defined in IDAPA 58.01.03.008.08 or the gravelless trench components approved in section 5.6 of this manual. Medium sand and pit run may be installed deeper than 48 inches below grade as long as the drainfield maintains a maximum installation depth of 48 inches below grade in compliance with IDAPA 58.01.03.008.04.

4.24.2 Approval Conditions

1. Except as specified herein, the system must meet the dimensional and construction requirements of a standard trench, bed, or pressure distribution system.
2. The in-trench sand filter or any of its modifications may be used over very porous strata, coarse sand and gravel, or ground water.
3. The standard in-trench sand filter system ~~is shall be~~ sized according to based on the native receiving soils at the medium sand, or pit run, and native soil interface ~~or at 1.2 gallons/ft², whichever is less.~~
4. Standard in-trench sand filters must maintain a 12 inch minimum depth of suitable native soil below the filter above a porous or non-porous limiting layer.
5. Standard in-trench sand filters must maintain a minimum separation distance of 12 inches from the bottom of the drainfield to the seasonal high ground water level.



6. Standard in-trench sand filters must maintain a separation distance from the bottom of the drainfield and the normal high ground water level that is capable of meeting the Method of 72 as described in section 2.2.3.2.

a. Approval condition 6 may be waived if the standard in-trench sand filter is preceded by an alternative pretreatment system (e.g., extended treatment package system, intermittent sand filter, or recirculating gravel filter) as long as the bottom of the drainfield still meets the minimum separation distances of the applicable alternative pretreatment system. (see Figure 4.26)

7. If the enveloped in-trench sand filter modification is used the following conditions must be met:

a. Enveloped in-trench sand filters may ~~only~~ be installed in unsuitable native soils consisting of coarse sand or very coarse sand, or in suitable soils over limiting layers.

i. Unsuitable native site soils shall be evaluated and certified to not be any larger than the diameter of very coarse sand as described in Table 2-1.

ii. Unsuitable soils that have application rates greater than clay loam as described in Table 2-9 are not suitable for installation of an enveloped in-trench sand filter.

b. Enveloped in-trench sand filters installed in unsuitable soils (e.g., coarse sand and very coarse sand) as described in Table 2-1 and Table 2-9 must be preceded by an alternative pretreatment system (e.g., extended treatment package system, intermittent sand filter, or recirculating gravel filter), see Figure 4-26.

i. Enveloped in-trench sand filters installed in unsuitable soils must maintain a minimum of 12 inches above the seasonal high water level from the bottom of the enveloped sand filter.

c. Enveloped in-trench sand filters installed in suitable soils over ground water or a porous limiting layer to obtain a reduced separation distances to the ground water or porous limiting layer shall utilize pressure distribution throughout the drainfield.

i. Enveloped in-trench sand filters installed in suitable soils to obtain a reduced separation distance to ground water or a porous limiting layer must maintain a minimum of:



1. 12 inches above the seasonal high water level from the bottom of the drainfield, and
2. 12 inches above the normal high water level from the bottom of the enveloped sand filter.

ii. Reduced separation distances to non-porous limiting layers may not be approved through use of this design.

d. The system shall be sized at 1.7 gallons/ft² if pretreatment is utilized. If pretreatment is not utilized they system shall be sized at 1.2 gallons/ft².

d.e. Enveloped in-trench sand filters may not be used in Large Soil Absorption System designs.

e.f. Effective disposal area for the installation of an enveloped in-trench sand filter shall only be credited to the width of the drainfield installed. Medium sand width enveloping the drainfield is not credited as disposal area.

4.24.3 Design and Construction

1. Filter-Medium sand used in filter construction must conform to the gradation requirements of ASTM C 33 (less than 2% may pass a #200 sieve) as described in section 2.1.4.
2. Pit run backfill material, if used, is to meet a soil design subgroup A-1 soil classification.
 - a. Pit run backfill material may only be used if the minimum medium sand fill depths are met.
- 2.3. The following mMinimum filter-medium sand depths must be used are dependent upon site specific soil profiles. The following site specific conditions outline the minimum sand filter depths:
 - b. Gravity flow system = 4 feet Excavation through an impermeable/unsuitable soil layer to access suitable soils and seasonal ground water or a porous limiting layer is not present.
 - i. No minimum medium sand depth.
 - i.ii. Pit run material may not only be installed until medium sand has been installed to a depth at depths of 8 feet below grade or more, medium sand must be used from the bottom of the drainfield to a depth of 8 feet below grade.



b. Pressure distribution = 2 feet in design group C soils
3 feet in design group A and B soils
Excavation through an impermeable/unsuitable soil layer to access suitable soils and seasonal ground water or a porous limiting layer is present (Figure 4-25).

i. The minimum medium sand depth is dependent upon meeting the Method of 72 as outlined in section 2.2.3.2.

ii. Pit run material may not be installed until the Method of 72 as described in section 2.2.3.2 is met.

c. Unsuitable Native site soils consisting of very coarse sand.

i. The filter sand shall envelop the drainrock so that at least 1 foot of medium sand is between the drainrock and the native soils as shown in Figure 4-26.

e.d. Suitable native site soils and a seasonal ground water level or porous limiting layer is present and the drainfield is pressurized and designed with a reduced separation distance to the ground water or porous limiting layer.

i. The filter sand shall envelop the drainrock so that at least 1 foot of medium sand is between the drainfield and the native soil as shown in figure 4-27.

ii. The filter sand shall maintain a depth of:

1.2 feet below the drainfield in design group C soils

2.3 feet below the drainfield in design group A and B soils

iii. A minimum of 12 inches of suitable soils must be maintained between the sand filter and the normal high ground water level or a porous limiting layer.

~~5. When the native soils are design subgroup A-1 or coarser, the filter sand shall envelop the drainrock so that at least 1 foot of filter sand is between it and the native soils, as shown in Figure 4-25.~~

~~6. The seasonal or normal ground water must not come within 12 inches of the bottom of the sand filter.~~

Figure 4-25 shows two types-scenarios for use of in-trench sand filters. Figure 4-26 provides an example of an enveloped in-trench sand filter installed in unsuitable coarse native soil. Figure 4-



27 provides an example of an enveloped in-trench sand filter installed in suitable native soils with a reduced separation distance to ground water or a porous limiting layer.

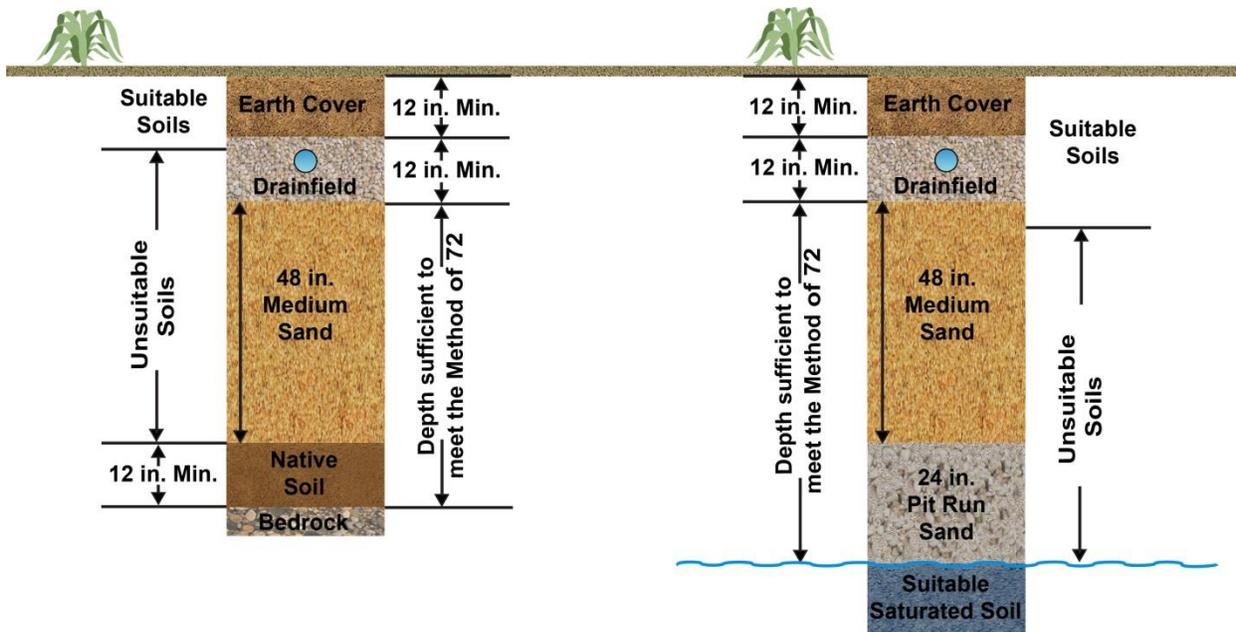


Figure 4-25. In-trench sand filter accessing suitable soils through an unsuitable soil layer.

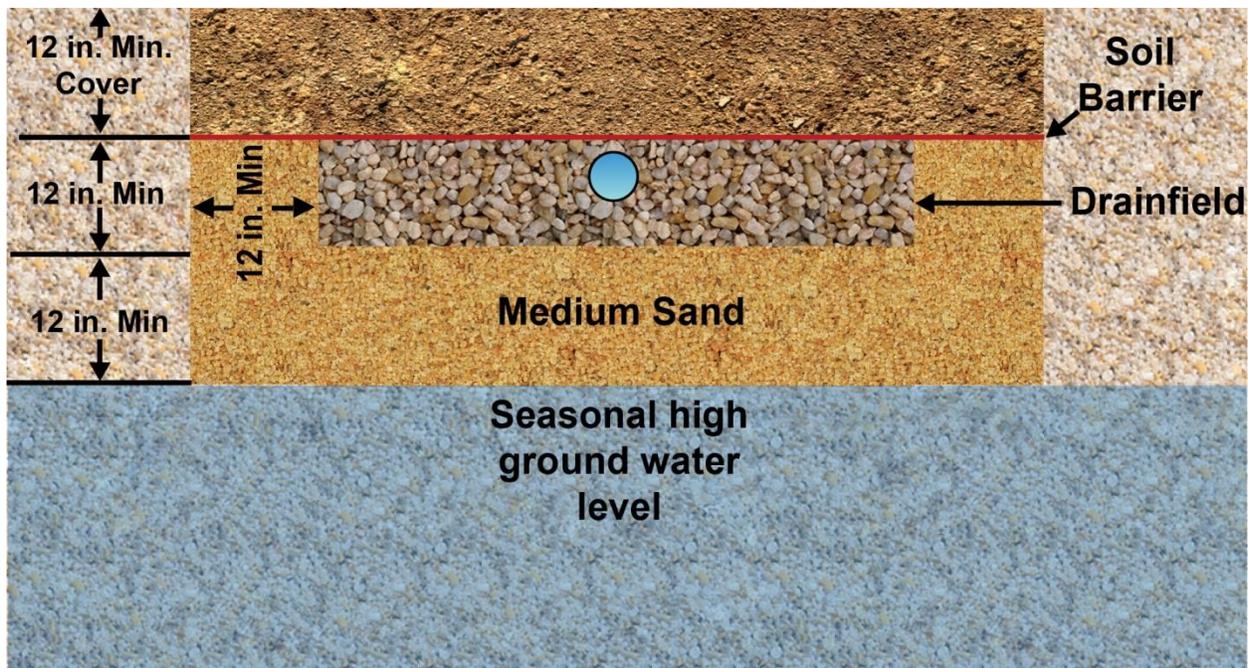


Figure 4-26. Enveloped in-trench sand filter with alternative pretreatment for installation in coarse unsuitable native soils (i.e., A-4 coarse or very coarser sand).

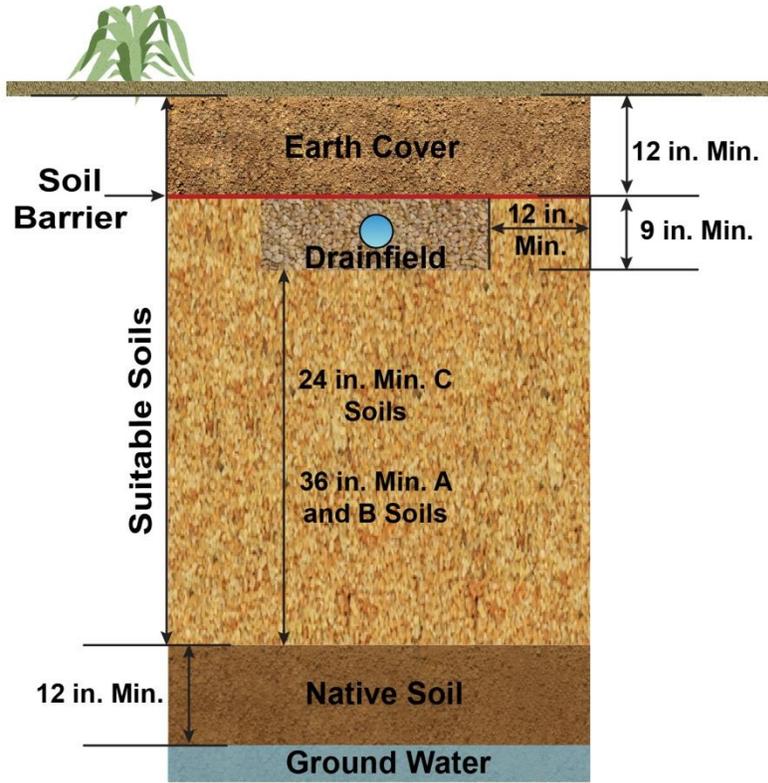


Figure 4-27. Enveloped pressurized in-trench sand filter for installation in suitable soils for a reduction in separation to ground water or a porous limiting layer.



Appendix Q

4.4 Easement

Revision: ~~April 21~~October 31, 2013~~00~~

The Individual/Subsurface Sewage Disposal Rules provide that every owner of real property is responsible for storing, treating, and disposing of wastewater generated on that property. This responsibility includes obtaining necessary permits and approvals for installation of the individual or subsurface disposal system. Therefore, a property owner wishing to install an individual or subsurface disposal system must obtain a permit under these Rules, and any other necessary approval for the installation of a system, including any authorization needed to install the system on another property that does not contain the wastewater generating structure. This property may be owned by the same individual that owns the parcel with the wastewater generating structure or another individual. Consistent with this requirement, the Rules require an applicant for a permit to include in the application copies of legal documents relating to access to the system (IDAPA 58.01.03.005.04.1). This section provides guidance regarding the circumstances under which the health district should permit a system to be located on another property that does not contain the wastewater generating structure and the legal documents that must be included in or with an application for such a system.

- A. The health district will consider allowing ~~the installation of a private, individual~~ subsurface sewage disposal system on ~~an adjoining another~~ property ~~(e.g., lot, parcel, etc.) owned by a second property owner~~. However, this option should be considered a last resort for use only when other practical solutions for subsurface sewage disposal are not available on the applicant's property. In addition, the entire site (i.e., the area for both the primary and replacement drainfield) on the other property must be reviewed by the health district and the site must meet all requirements of the "Individual/Subsurface Sewage Disposal Rules" (IDAPA 58.01.03).
- B. ~~The placement of an individual subsurface sewage disposal system on another property requires that an easement be in place prior to subsurface sewage disposal permit issuance. Easements are required anytime a subsurface sewage disposal system is proposed on another property regardless of property ownership. Easements will need to be obtained for each property, other than the wastewater generating parcel that the application is submitted for, that any portion of the subsurface sewage disposal system is proposed to be installed upon. The following is guidance and guidelines provides guidance for approval of an easement to construct an individual subsurface sewage disposal system: It is the applicant's responsibility to include an easement that:~~
1. ~~Contains a sufficient description of the easement area, and of the property to be benefited by the easement (the property of the applicant).~~



2. Contains language that ensures that the other property can be used for the system, and that the applicant or a subsequent purchaser of the applicant's property has access to make repairs or perform routine maintenance, until the system is abandoned. The language must ensure such use and access even when the applicant's property or the other property is sold or otherwise transferred.
3. Contains language that restricts the use of the easement area in a manner that may have an adverse effect on the system functioning properly.
4. Is surveyed, including monumenting the corners of the entire easement area, to supply an accurate legal description of the easement area for both the primary and replacement drainfield areas and enable the health district to properly evaluate the site.

C. It is the responsibility of the applicant to ensure that a legally sufficient document is prepared to establish the necessary easement for the subsurface disposal system located on another property. This document must be submitted to the health district with the permit application. The health district must ensure that an easement document is included in the application. However, the health district does not have the expertise, nor is it the duty of the health district, to determine the legal adequacy of the easement document, and the issuance of a permit does not in any way represent or warrant that an easement has been properly created. In order to issue a permit that includes a system on another property, the health district must ensure that the easement document included with the application:

1. Has been prepared by an attorney.
2. Has been recorded in the county with jurisdiction. Evidence that the document has been recorded must be provided.

If the easement document meets the above two criteria, the health district may issue a permit. It is not the health district's responsibility to ensure the easement document meets the requirements in section B above. It is the responsibility of the applicant and the applicant's attorney to ensure the easement is legally sufficient and will meet the requirements in section B.

5. ~~The entire site (i.e., the area for both the primary and replacement drainfield) for the proposed easement area must be reviewed by the health district for approval prior to recording and surveying of the easement and issuance of the permit.~~
6. ~~Site must meet all requirements of the "Individual/Subsurface Sewage Disposal Rules" (IDAPA 58-01.03) (section 8.1), including but not limited to soils,~~



- ~~setbacks, slope, and sufficient area for the original primary and replacement drainfields, and slope.~~
- ~~7. The easement is to be professionally prepared by an attorney and recorded in the county courthouse of local jurisdiction, or a written agreement prepared from the grantor granting an easement to the grantee, both of which will be surveyed and recorded after the system is installed. A copy of the easement is to be made available to the local health district and attached to the sewage disposal permit before final permit approval.~~
 - ~~a. The easement shall include a survey, including monumenting the corners of the entire easement area, of the proposed easement site shall be made to supply an accurate legal description of the easement and enable the health district to properly evaluate the site.~~
 - ~~b. The entire easement area shall be monumented at all corners to identify the area of system placement prior to permit issuance and the monuments should be identified on the easement survey.~~
 - ~~8. The easement shall be signed by all individuals or entities listed on the deed or title for each impacted property.~~
 - ~~9. A copy of the easement is to be provided to the local health district prior to permit issuance.~~
 - ~~8.10. A copy of the recorded easement and survey is to be provided to the local health district prior to final permit approval.~~
 - ~~9. The attorney shall include in the written easement the following items:~~
 - ~~a. Easement shall be in perpetuity or until the system is abandoned by the grantee.~~
 - ~~b. Grantor is to be protected with enforceable provisions that will require the owner of the system to make repairs as needed.~~
 - ~~c. Grantee is to have access to the system to make repairs or perform routine maintenance.~~
 - ~~d. Grantee must have ability to restrict any use of the easement area that may have an adverse effect on the system functioning properly.~~



~~10.11. A survey, including monumenting the corners, of the proposed easement site shall be made to supply an accurate legal description of the easement and enable the health district to properly evaluate the site.~~

4.4.1 Easement Restrictions

1. Effluent transport pipes for separate properties should not occupy the same trench within an easement.
2. If easements for drainfields under separate ownership result in more than 2,500 gallons per day of effluent being disposed of on the same property then the drainfield(s) must be designed as a Large Soil Absorption System and undergo a Nutrient-Pathogen Evaluation.
3. Easement boundaries that are not adjacent to the grantee's property line must meet the separation distance of 5 feet between the drainfield and/or septic tank and the easement boundary.