Welcome to the Technical Guidance Committee (TGC) Meeting
June 11, 2026
9:30 a.m. (MST)

If using your computer audio is not an option, please call the Teams call-in number instead.

Teams call-in phone number: (208)985-2810
Password: kL2hR92B

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Thank you

Idaho Technical Guidance Committee (TGC)
Meeting Agenda
Idaho Department of Environmental Quality
1410 N Hilton St., Boise, ID 83706
Conference Room: D
June 11, 2026
9:30 a.m. (MST)

The meeting will also fully accommodate remote participation. Contact Jayson Foley at Jayson.foley@deq.idaho.gov to sign up for participation by telephone and/or web conferencing.

Call to Order and Roll Call

- The meeting will be called to order at 9:30 a.m. (MST) and introductions made by each person in attendance.
- TGC Attendees:
    - TBD
- Guests:
    - TBD

Public Comment Period

- The Committee will allow up to 30 minutes for public comments on topics relevant to the Committee.

Action Item 1 – Meeting Minutes – Appendix A

- TGC review and vote on final approval of March 5, 2026 Meeting Minutes draft.

Old Business

Action Item 2 – Appendix B – Review, Amend, or Approve

- TGM Section 4.5.3.1 Drip Distribution System – Basic Design Requirements
    - Continue discussion regarding proposed square footage reductions and vertical setback reductions for drip distribution systems.
    - Review any additional technical literature and supporting information.
    - Review public comments received.
    - Vote on action.

Action Item 3 – Appendix C – Review, Amend, or Approve

- PlanetCare Hybrid Coir Biofilter
    - Continue discussion regarding system classification, approval pathway, and Idaho-specific design requirements.
    - • Review revised design manual and supporting documentation submitted by PlanetCare.
    - • Discuss maintenance requirements, service provider considerations, and installation criteria.
    - • Vote on action.

Action Item 4 – Appendix D – Review, Amend, or Approve

- 2025 IDAPA 58.01.03 Updates – Tank Sizing and Piping Impacts
    - Continue discussion regarding implementation of:
        - IDAPA 58.01.03.007.08.b Minimum Tank Capacities.
        - IDAPA 58.01.03.007.20 Inlet and Outlet Piping.
    - Discuss interpretation and implementation considerations.
    - Determine whether TGM revisions or guidance clarifications are warranted.
    - Vote on action.

New Business

Note: There are no new products for TGC review for this meeting.

Discussion Items

On-site Wastewater Program Update

- Technical Guidance Manual update status.
- Update of the Permitted Septic System Installer List and the Permitted Septic Tank Pumper List.
- OSCAR-II and OSCAR-XO2 manual updates.

Additional Action Items

Action Item 5 – Approve Motion to Schedule the Next Meeting

- The proposed date for the next meeting is Thursday, September 10, 2026

Action Item 6 – Approve Motion to Adjourn the Meeting

Note: Begin time will be observed and time spent discussing each agenda item may vary.

Conference Call Instructions

All remote participants must join the Microsoft Teams conference call either by joining the meeting online or calling into the Teams phone number.

Note: To reduce background noise, please remember to mute your phone unless you are speaking.

Teams call-in phone number: (208)985-2810
Phone Conference Password: kL2hR92B

Teams Web Conference Instructions

This will allow users joining the meeting via online video conference to view the documents being shared.

For the Teams Meeting ID and Password, please contact Jayson Foley at Jayson.foley@deq.idaho.gov.

Appendices

Appendix A

Idaho Technical Guidance Committee (TGC) Meeting Minutes

Idaho Department of Environmental Quality
1410 N Hilton St., Boise, ID 83706
Conference Room: E
March 5, 2026
9:30 a.m. (MST)

The meeting accommodated remote participation via phone, Microsoft Office Teams conferencing, as well as in-person attendance.

Call to Order and Roll Call

- The meeting was called to order at 9:30 a.m. (MST) and introductions made by each person in attendance.
- TGC Attendees:
    - Joe Canning, P.E. – Centurion Engineers
    - Kellye Johnson, Environmental Health Administrator– EIPH
    - Mitch Kiester, MPH, CPM, REHS/RS – Program Manager – SWDH
    - Jason Peppin, Ph.D., REHS/RS – Division Administrator-Environmental & Health Protection – PHD
    - Kendall Unruh, Complex Installer – WEB, Inc. dba/Western Septic & Excavation
- Guests:
    - Brent Copes – Environmental Health Lands Program Manager, CDH
    - James Craft – Wastewater Compliance Bureau Chief, DEQ
    - Jayson Foley, REHS/RS – Senior WW Enforcement Coordinator, DEQ
    - PaRee Godsil – General Public Citizen
    - Brent King – Lead Deputy Attorney General, DEQ
    - James Prickett – R.C. Worst
    - Tom Rankin Jr. – PlanetCare
    - Andy Swider – PlanetCare
    - Nathan Taylor, REHS/RS – EIPH

Public Comment Period

- The Committee allowed up to 30 minutes for public comments on topics relevant to the Committee.
    - No public comments were provided to the Committee.

Action Item 1 – Meeting Minutes – Appendix A

- TGM review and vote on final approval of December 4, 2025 Meeting Minutes draft.
    -

Motion: Kellye Johnson
Second: Joe Canning
Verbal Vote: Unanimously approved. The December 2025 meeting minutes will be posted to DEQ's website within 30 days.

Old Business

Action Item 2 – Appendix B – Review, Amend, or Approve

- TGM Section 4.5.3.1 Drip Distribution System - Basic Design Requirements
- Add language specifying that drip distribution systems are afforded the same square footage reductions and vertical setback reductions as a PWTP or ETPS, per TGM Table 4-19 and Table 4-20.
- The design application rate is based on the most restrictive soil type encountered within the minimum effective depth of soil below the drip distribution tubing required to meet the necessary separation distance to limiting layers. "The effluent may be discharged to a drainfield satisfying the vertical setback requirements identified in Table 4-19".
- No public comments were received.
- Joe motioned to approve.
- Jason had concerns about vetting the research on the language change regarding TSS and BOD drip systems for the NSF systems and sand filter systems.
- Mitch agreed and thinks additional research needs to be done.
- James said the action could be postponed.
- Jason said engineers in the community were going to research this further and get back to the committee. He also said that this would be a significant reduction, and he wants to make sure we get it right and that the literature is backed up.
- Joe withdrew his motion, and he suggested that the research be done by DEQ and the engineers up north.
- Jason said he hasn't heard back from either of the engineers he reached out to, and he would like to wait until more research is done before voting.
- James suggested tabling the motion until more research is done.

- Kendall wants to know how this will be done before the next meeting, so this doesn't happen again, and to make sure the research is done. He also asked who would be in charge of ensuring the research is done before the next meeting.
- James confirmed that Jayson Foley, the new Senior Onsite Wastewater Analyst (effective March 16, 2026), would ensure that the research is done before the next TGC meeting. James also said Peter Adams was a big part of the research being done, and since Peter is gone, that's where the research didn't get done in time for this meeting, since the position has been vacant. James motioned to table the vote until further research and vetting occur for the next TGC meeting.

Motion: Jason Peppin, motion to table
Second: Mitch Kiester, seconded the motion to table
Verbal Vote: Topic tabled, unanimously approved.

Action Item 3 – Appendix C – Review, Amend, or Approve

- TGM Figure 2-8 Cutoff trench plan view
- Revise Figure 2-8 to delete the 50-foot minimum separation distance depicted in the Figure. The minimum separation distance from the drainfield to a cutoff trench is determined by Table 2-12 and varies from 9.5 to 120 feet.
- Revisit proposed edits.
- Remove the edits and to reference the Table, Table 2-12, and edit the image.
- Jason asked if it would be going out for public comment or if it had already gone out for public comment.
- James confirmed that it hasn't gone out for public comment.
- Kendall said it doesn't really change anything and asked if it needs to go out for public comment.
- James said if it doesn't need to go out for comment, then it can be moved forward with the edit.
- Kendall asked if the Attorney Generals could confirm it doesn't need public comment.
- Brent was asked to comment.
- Brent said he would need to look at the specific public comment statute that's applied here and determine if it's different than the IPDES public comments.
- James wants to ensure we're doing this correctly.
- Brent asked if the information is the same, then action isn't really occurring, and it's a technical edit, not a substantive edit, and it wouldn't need public comment.
- Kellye said she had Nathan Taylor in the room with her, and she wanted to know if they looked at the vertical setbacks and at Tables 4-19 & 4-20 and cutoffs.
- Vote on action.

Motion: Kendall Unruh, with technical edits
Second: Jason Peppin, with technical edits
Verbal Vote: Final vote, unanimously approved with technical edits.

Action Item 4 – Appendix D – Review, Amend, or Approve

- Continue discussion from August 28, 2025, TGC meeting – PlanetCare Hybrid Coir Biofilter, presented by Andy Swider and Tom Rankin.
- Andy & Tom presented the updated design manual and additional information.
- Review additional technical information from PlanetCare – design manual, sizing approach, proprietary components, media exchange and disposal requirements, and commercial use considerations.
- Determine appropriate classification and approval pathway – ETPS vs. Proprietary system, service provider requirements, and compliance with Idaho design and discharge standards.
- No public comments were received.
- Tom said it's a fixed media, not an aerobic. He also said that the unit is rated for gallons per day and typically goes with state recommendations in sizing the primary septic tanks. Additionally, he said it's for residential, domestic strength, and for commercial strength, it gets doubled, and requires more fixed media.
- James said there were questions regarding commercial use.
- Tom said he can provide a general review of the product, and he would be happy to do that. He also said that an anaerobic process occurs in the septic tank, and Coco chips are the primary media; 10% is peat media in nylon bags, and they are easily removable if needed. Additionally, he said that microbial growth is stimulated by the microbes. Tom said that there is an advanced secondary effluent 10-10 on BOD and TSS for residential or commercial waste, an effluent filter is required, and effluent quality is achieved. He said in the passive system, there are no moving parts, no electricity is required, and no dosing pumps are needed. For systems that require a pump tank that microdoses the biofilter, in those cases, there would be a pump and electricity. The Coir Peat Biofilters are a simple and effective product that provides good-quality effluent.
- Joe asked how big the holes are on the distribution bar.
- Tom said they are a quarter inch.
- Joe asked how deep the system is.
- Tom said the only disadvantage is gravity flow; if the Coco tank needs to sit higher to achieve gravity, then a pump would be needed.
- Joe asked how big the tank is.
- Tom said it depends on the system.

- Joe said Idaho requires that it can only be 4 feet to the bottom, otherwise it would be too deep.
- Tom said that for Iowa, it hasn't been a common issue. If a pump tank is needed for a system, then that's what's needed. He also said that if the system is too expensive and a lift station is needed, then this system probably isn't the option for the owner.
- Joe asked about commercial use if they would pump into it. Joe also asked about the diagrams on the cross-section, and if they are aeration pipes.
- Tom confirmed that it's a 4-inch cross-section, a collection manifold, and aeration to the manifold. He also said some precasters will use 1-inch clean aggregate to protect the manifold. Additionally, he said they've used false aggregate, polystyrene peanuts, and black pipe.
- Joe asked about migration with the media and if there was fabric at the filter.
- Tom said no.
- Joe asked if peat is used in all of the systems.
- Tom confirmed that peat is used in all of the systems.
- Joe said this would work well for seasonal situations.
- Tom confirmed that their system is ideal for seasonal situations, and the microbes can live longer in the applications.
- Joe asked about the sizing comparison for homes and if that had been done.
- Tom said they do certify the concrete precasters and factory installers, as long as they can get all the media in from the kit.
- Joe said Idaho has low-profile tanks that are wider and not as deep, and questioned how that would work for this system.
- Tom said that if the bar is 4 inches within the media, it would work; if not, a larger tank is needed.
- Jason said in relation to depth and slope, the product could be beneficial in rural areas and an excellent tool that is a gravity ATPS. Jason asked about the peat filter and if you see limitations in getting peat in the future.
- Tom said they haven't had any issues with access to the peat. They have access to peat bogs; it was an issue in the past, and it is no longer an issue since they use less than 10% peat in the system. If there's any issue, it would be the Coco, which comes from Sri Lanka, but currently, there is no issue with getting Coco or peat.
- Jason said in the manual on the diagram on the upper left, one thing we've learned is that any change that isn't confirmed before implementation receives questions. Jason asked if there were any proposed changes to the manual.
- James said the changes have not occurred yet for Idaho requirements.
- Tom asked if Andy knew of the changes.

- Andy asked if they would like more Idaho requirements in the manual.
- James confirmed, yes, they would like more Idaho requirements in the manual.
- Kendall asked about the tanks and if the precasters needed to get their modified tanks approved by DEQ.
- James said yes, it would have to be approved by DEQ and meet the approvals in the TGM. It would have to be a specific listed tank; they would have to work with the precasters; it would have to be a specific approved tank, and it would have to be added to the TGM.
- Jason said it would have to be a one-time approval or manufacturer approval.
- Kendall asked about the depth of low-profile tanks, 31 inches below the distribution bar, and his area has the lowest requirement; they are 30 inches to the outlet level, but he thinks it would work since this system is different.
- Tom said they would have to qualify that and work with the precasters.
- Joe asked whether you ever put them in a linear situation?
- Tom said no, they haven't, that they would put the assembly into a contractor's hands, and they wouldn't want to do that.
- Jason said they wouldn't want that without engineer oversight.
- James asked if anyone had any other questions regarding diagrams or anything else.
- Jason said his main comment is that it's promising that there is clear information regarding Idaho requirements. Would it be approved as a Proprietary system?
- James said yes, it would be approved as a Proprietary system.
- Joe asked if maintenance would be required; he doesn't think it would.
- James, it would be something to consider regarding potential maintenance.
- Tom said the factory recommends annual maintenance: turning over the top layer, cleaning the effluent filter, sludge levels, determining if the tank needs to be pumped, running a garden hose down the airlines, and making sure there aren't any animals in the system.
- Joe asked about the disturbance and noted that the access is rectangular.
- Tom said they rake the media and break it up; there's a low percentage of applications where grease could be built up, but it doesn't affect the quality of the product.
- Joe asked if the holes in the pipe are pointed down.
- Tom confirmed the holes in the pipe are pointed down.
- James said the type of lid would also be a callout.
- Joe asked if the lid comes with the kit.
- Tom said the lid and riser come with the kit, and the precasters would have to modify the tank to meet the specs.
- Mitch said it would need a complex license.

- James confirmed that due to the type of installation, it would need a complex license.
- Jason said there is precedence for that, and TGM 5.13 supports the complex install for this system.
- James said we offer two types of installation: basic or complex, depending on the system.
- Joe asked if it went through NSF testing.
- Tom confirmed that it has gone through NSF testing.
- Joe asked about a 10-bedroom home.
- Tom said two tanks would be required.
- Joe asked about determining flow.
- Tom said it would split the flow equally and lean more on the Department of Health or DEQ on how that would be done.
- Joe said some systems have a cap, and advancements would have to be made by an engineer.
- Tom said they're not opposed to that, but they're not opposed to equal flow; that's the ideal situation. If it's off a little bit, it's okay, but I would like to comply with state requirements, and a properly sized drain field would be required.
- Jason said if it's not specified in the manual, he suggests equal distribution be added to the manual and flow equalizers.
- Kellye said that this is not an ETPS because of the annual maintenance.
- Kendall said that it's recommended, not required.
- Kellye said it seems like we're missing an important maintenance step.
- Jason agrees it's challenging to fit new products into the categories we have. He also said it needs to have some level of maintenance requirement under the Proprietary system category.
- Tom said there are some systems where homeowners choose not to maintain them, and several systems don't need annual maintenance, but with their system, they would like annual maintenance; however, it doesn't always need to be done. Tom asked what the significant difference was between permitting, the upside-downside for permits for ETPS vs Proprietary systems?
- James said ETPS is a provisional approval, with more validation and third-party testing validation for requirements, and submitted for DEQ approval. James also said that ETPS requires electricity.
- Tom asked if the inspection is annual.
- James said he believes it's quarterly, but needs to confirm.
- Tom said they would comply with whatever Idaho and DEQ recommend. He also said their system is different.

- Jayson said if the homeowner isn't maintaining the system and it builds up, they bypass the system.
- Tom said there have been very few that have backed up and flooded. He said it would back up to the point of entering the air vents to the top of the tank and bypass the system. Tom said it would take several years based on the situation. He doesn't believe that anything to that effect has occurred, and that fat, soil, and grease will plug up the system much faster than anything else.
- James said DEQ needs to work with PlanetCare on Idaho requirements so that the concerns are addressed.
- Kendall said the point of Proprietary systems is that they need to have a service provider agreement, and in the manual, it states that maintenance is required.
- James said we need to address the maintenance part.
- Kellye asked what would keep the 5-year warranty in place?
- Tom said the warranty doesn't cover performance or effluent quality practices in the house or chemotherapy; it addresses the parts in the tank, the cover, and not if someone hits it with a lawnmower. He said in some situations, the factory has looked at effluent quality and given them free media, but that doesn't pertain to the warranty.
- Joe asked about the 900 gallons per day, if that was for a 6-bedroom. He also said to look at Idaho requirements; Idaho requirements for a 2-bedroom is 250 gallons, and each additional bedroom is 50 gallons.
- Tom said they will discuss it with their team, and that the 900 gallons is for residential strength.
- Jason said it would help size per day in dwellings and multi dwellings, and it's not always based on the number, since some are multi dwellings.
- Tom said if there are multiple dwellings, with more than one kitchen, then they would size that with a larger tank size to handle the additional kitchen; they don't just base it on bedrooms, they also look at kitchens.
- Jason said that would be helpful.
- Tom said they would put something together for review.
- James suggested tabling until the Idaho requirements are incorporated.

Motion: James Craft, motion to table
Second: Joe Canning, seconded the motion to table
Verbal Vote: Topic tabled, unanimously approved.

New Business

Note: There are no new products for TGC review for this meeting.

Action Item 5 – Appendix E – Review, Amend, or Approve

- 2025 IDAPA 58.01.03 Updates – Tank Sizing and Piping Impacts
- Discuss pre- vs. post-July 2025 rule changes affecting:
- 58.01.03.007.08.b Minimum Tank Capacities: average vs. maximum daily flow.
- 58.01.03.007.20 Schedule 40 or stronger pipe and conflicts with the commonly used ASTM 3034 pipe.
- Joe said he noticed that the legislature changed the tank capacity requirements to one thousand gallons for each bedroom in a dwelling unit. Joe also has concerns about RV parks and apartments, and the new rules introduced a new term of structure.
- Jason and Mitch said that they have concerns as well.
- Jason said from the Health District standpoint, there's a lot of resistance when there's not a lot of explanation for additional requirements, which creates a lot of friction.
- Kellye asked if there was a possibility to see if the Deputy Attorney General could create an addendum, or, since it's a rule change, she asked how that would work.
- Brent said it's in the rule, so if James wants to send me an interpretation, Brent could dig into it more. He additionally said that since it's in the rules, it is what it is.
- Kellye asked if we could define what a structure means.
- Brent said he would look at that if James could provide background and the proposed language.
- James said regarding schedule 40, Peter left a note regarding the change, expanding the table to include the strength.
- Kendall said it's not just the strength; it can also be pipe composition.
- James recommends that the chair send the Deputy Attorney General additional information and table the motion.

Motion: James Craft, motion to table
Second: Joe Canning, seconded the motion to table
Verbal Vote: Topic tabled, unanimously approved.

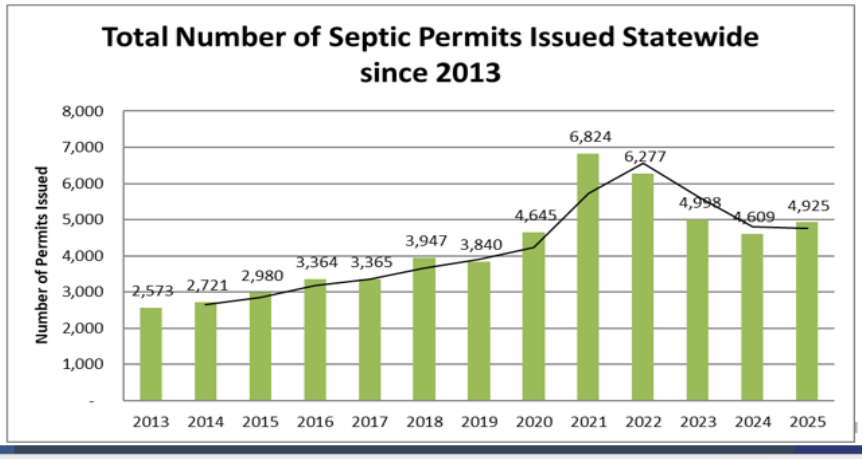
Additional Action and Discussion Items

On-site Wastewater Program Update

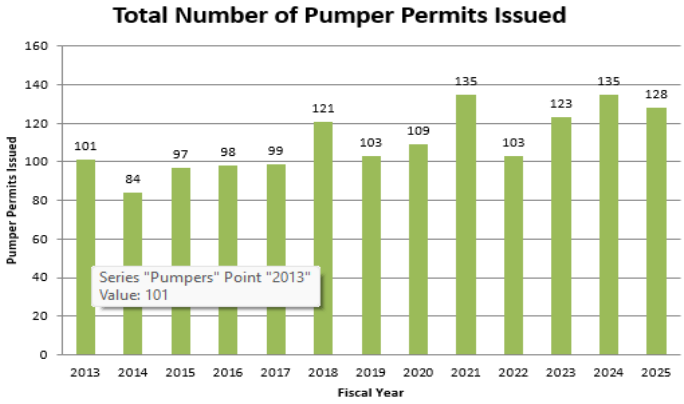
- Hiring process update to fill the Senior Onsite Wastewater Analyst 4 position.
- Jayson Foley will start on March 16, and he presented his background information.

- By the Numbers: Idaho Septic Permits in 2025 PowerPoint presentation ‘By the Numbers.
- James presented the 2025 numbers. The total number of Idaho septic permits issued statewide was 4,925 permits, and went up by 7% since 2013. The total number of pumper permits issued was 128 permits, and went down by 5% since 2024. The total number of installer permits issued was 1,215 permits, and went down by 3% since 2024.

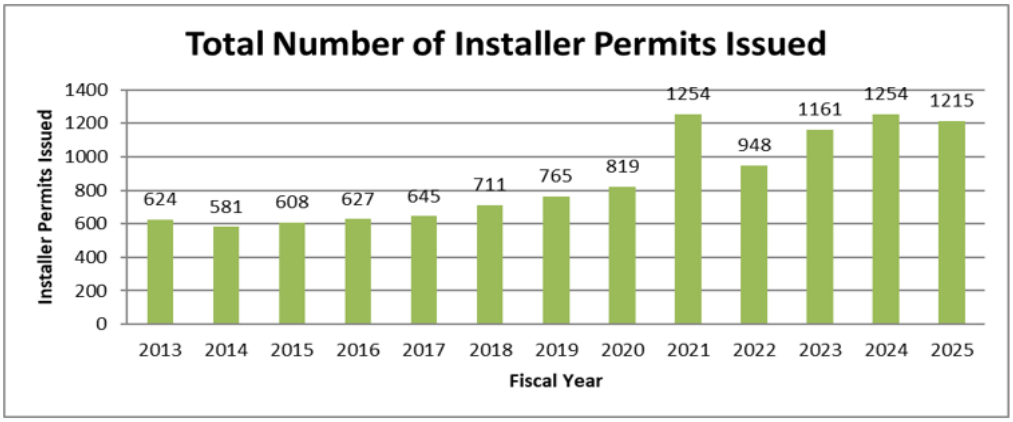
4,925 permits issued, ⬆ 7%



128 pumper permits issue, ⬇ 5%



1215 installer permits issued, ⬇ 3%



- OSCAR System Performance, Installation Challenges, and Design Considerations in Idaho.
    - Two Health Districts have reported recurring failures and operational challenges with the OSCAR systems. Staff time required for repeated troubleshooting and site visits continues to increase. Installers in Gem County and other districts are observing similar field performance concerns, suggesting the issue may be broader than isolated system failures.
    - Concerns that there isn't enough topsoil in colder months. The manual requires a few inches of topsoil and sod to cover the coils.
    - James asked if the manual needs to be updated and if they need to talk to the manufacturer.
    - Joe asked if this was for seasonal use or recreational.
    - James said he wasn't sure.
    - Mitch asked if installers reached out.
    - James confirmed that he's waiting for more details.
    - Mitch has a list and will provide the information to James. He has had seven failures since 2022 and will provide the information to James. Additionally, he said that not all of them are due to freezing; failures occurring at varying periods of time, some at 2 months and others up to 3 years, some are related to engineering.
    - Joe wanted to know if it was a failure in the sand or soil barrier.
    - Mitch said one has cattails growing in it.
    - Jason said they've had one that failed due to grading for drain back pipes and another one without fencing due to elk. He also said he's not aware of any other issues. Additionally, he is interested in finding out the issues in the failures.
    - Mitch said it could be due to their high groundwater, which the system was supposed to cover.
    - James said any feedback would be appreciated, and how performance in the field is occurring. He also said to include the background information, including the timelines of occurrence, and they would talk to the manufacturer about adjustments.
    - Jason asked if Dave with Oscar had gone onsite to evaluate the failure situations.
    - Mitch said they have come onsite and made changes, but some homeowners have chosen to use different systems.
    - James said he would check with his contact in Washington to see if they have had any issues and how they've been addressed.
    - Jason asked for the manufacturer's oversight.
    - Mitch asked about water softener disposal. He also asked if this could be an item for a future meeting. Additionally, he said that installers would like to hand out information to homeowners.
    - James said he would circle back and provide an update.
-

Action Item 6 – Motion to schedule the next meeting

- The proposed date for the next meeting is Thursday, June 11, 2026

Motion: Joe Canning

Second: Kellye Johnson

Verbal Vote: Unanimously approved.

Action Item 7 – Motion to adjourn the meeting

Motion: Kellye Johnson

Second: Joe Canning

Verbal Vote: Unanimously approved, and the meeting was adjourned at 11:16 a.m.

Appendix B

4.5.3.1 Basic Design Requirements

The following minimum design elements apply to both septic tank and pretreated effluent systems and continuous and noncontinuous flush drip distribution systems:

1. Drip distribution tubes are placed directly in approved native soil at a depth of 6–18 inches with a minimum final cover of 12 inches.
    a. Cobbles may be removed from the native soil without it being considered disturbed.
2. Drip distribution tubes should be placed on contour and slightly for proper drainage to the manifold and ultimately the dose tank. If the dosing tank is installed above the drainfield, the distribution tubes should be sloped toward the drip tubing for drainage out into the drainfield.
    a. Drip tubing is made of low-density, linear polyethylene to withstand the effects of cold weather. These properties of the drip tubing allow drainage of effluent from drip tubing. Therefore it is the hard/rigid components of the drainfield that must be protected from freezing.
3. A minimum of two zones are recommended, but not required, regardless of system size, and zones should be kept as small as is reasonable.
    a. Individual lateral lengths should be designed to provide equal discharge volumes across the lateral emitters (lateral length is calculated from the connection point on the supply line to the connection point on the return line).
    b. Lateral lengths may differ within a zone as long as the minimum flushing velocity can be maintained at the terminal end of each lateral.
    c. Zones within a system should be close to equal in size to achieve efficient and consistent application of wastewater.
    d. In lower permeability soils (i.e., clayey soils), it is recommended that drip tubing and emitter spacing be reduced while maintaining the minimum square footage to

increase the emission points and maintaining the dosing volume to decrease wastewater travel distance through the soil.

4. The design application rate is based on the most restrictive soil type encountered within the minimum effective depth of soil below the drip distribution tubing required to meet the necessary separation distance to limiting layers.
5. Septic tank effluent drip distribution systems are required to be adequately filtered with a 100–115 micron or smaller spin/screen filters or disk filters that are flushable or nonflushable before discharge into the drip distribution tubing network. Filters are not required for pretreated effluent drip distribution systems but are recommended.
6. When installed, effluent filters are required to be:
   a. Automatically backflushed to flush the solids off the filter surface and return them to the inlet pipe of the septic tank, or
   b. Inspected periodically and hand cleaned if necessary.
7. A minimum of two vacuum relief valves are required per zone.
   a. The valves are located at the highest points on both the distribution and return manifolds.
   b. Vacuum relief valves are located in a valve box that is adequately drained and insulated to prevent freezing.
8. Pressure compensating emitters must be used in all drip distribution installations.
10. The hydraulic design of the drip distribution system should achieve discharge rates and volumes that vary no more than ±10% between all the emitters within a zone during a complete dosing event.
    a. Consideration should be given to the unequal distribution during flow pressurizing and depressurizing periods.
    b. The designer must be able to mathematically support the design for equal distribution.
10. Dosing requirements in all drip distribution systems include the following:
    a. Timed dosing is required.
    b. Dosing will only occur when the dosing chamber has sufficient volume to deliver a full design dose to the drip distribution system.
    c. Sufficient rest time must be programmed to provide time for effluent to distribute away from the drip lines.
    d. Must include a flow meter or run time/event counter.
    e. The capability to monitor flow rates both during dosing and flushing events.
    f. Small, frequent doses should be avoided and dose volumes should be several times the total supply and return manifold and drip tubing volumes within the dosing zone.
11. Dosing chambers must provide sufficient storage for equalization of peak flows and meet the requirement of section 4.19.3.3.2 and 4.19.3.4.
12. Each valve, filter, pressure regulator, and any other nondrip tube or piping component is required to be accessible from grade and should be insulated to prevent freezing.

.

Appendix C

Planet Care Biofilters

Be Gentle With The Earth

Planet Care BIOFILTERS

Coir Peat Biofilter, Easy Assembly, Easy Maintenance

Wastewater Biofilters

Coir/Peat Biofilter - Poly Tank

FXC/PBF 450 - 450GPD TREATMENT SYSTEM

Coir/Peat Biofilter - Concrete Tank

FXC/PBFC450 - 450GPD TREATMENT SYSTEM

FXC/PBFC600 - 600GPD TREATMENT SYSTEM

FXC/PBFC750 - 750GPD TREATMENT SYSTEM

FXC/PBFC900 - 900GPD TREATMENT SYSTEM

*Larger than 900GPD

Recommended Unit Sizing:
2x Average Daily Flow

3 bedroom home = 250 GPD
Add 50 GPD per bedroom.

Examples:

2 Bedroom = 200 GPD
3 Bedroom = 250 GPD
4 Bedroom = 300 GPD
5 Bedroom = 350 GPD

Multi-Unit Structures-
Add 150 GPD per each Kitchen
Add 50 GPD per bedroom

*Multiple Planet Care Bio-filters can be used in conjunction to meet capacity requirements. Planet Care recommends flow to distribution box when using more than one Bio-filter to equalize flow before discharge.

NSF Certified to NSF/ANSI Standard 40

MADE IN IOWA

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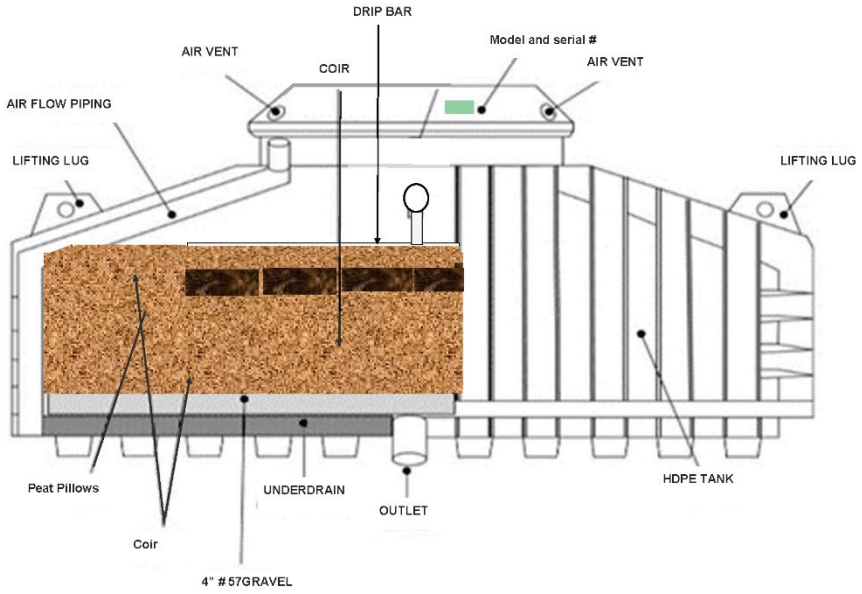
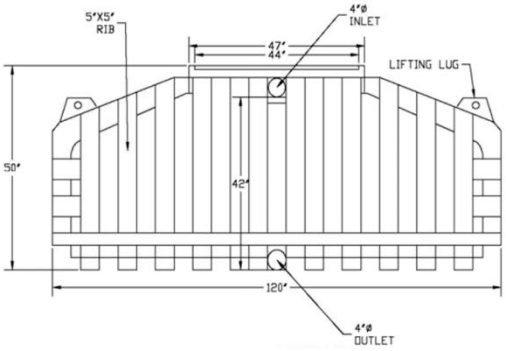
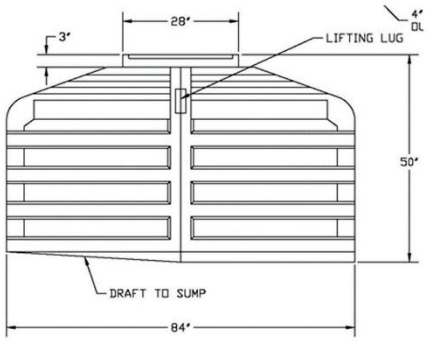
Planet Care Biofilters

ACOIR/PEAT BIOFILTER- POLY

FXC/PBF450







Square footage for Coir/ Peat Filter bed surface area

118.25" x 83.75" = 9,903.4375 / 144 = 68.77 sq ft

Cubic feet for Coir/Peat Filter

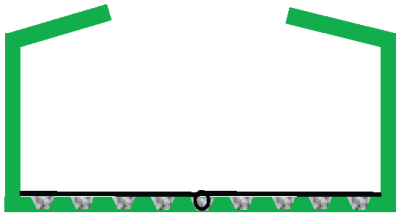
31" /12 = 2.58 ft — 2.58 ft x 68.77 sf = 177.42 cf

Coir peat volume in Waco HDPE coir/peat tank 173.4

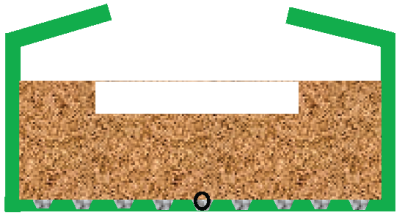
Underdrain Depth	4"
Peat Filter Depth	31"
Air Gap / top of filter to bottom of the	7"
Outlet invert to Inlet invert height	42"

Minimum coir/peat depth 30 inches

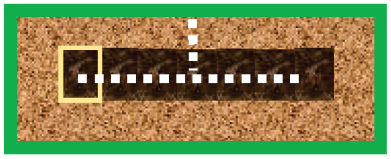
Check all corrugated pipes in the tank floor for holes down—all other pipe is solid- Check that all connectors are good. Place 4 inches of #57 non reactive washed septic stone in the bottom of the tank. The top of the pipe will be visible.



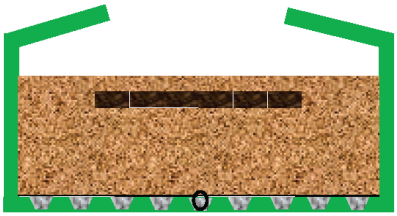
Set aside the peat pillows in each sack and fill the tank with all the coir sacks - The number of pillows in each super sack is marked in a circle on each sack - Channel out a trough for the pillows in the center of the tank opening



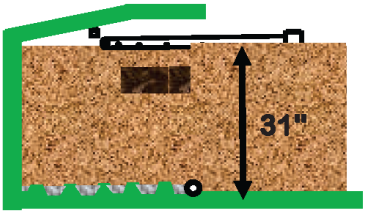
Place the 6 pillows (C/PBF450) level under the drip bar location



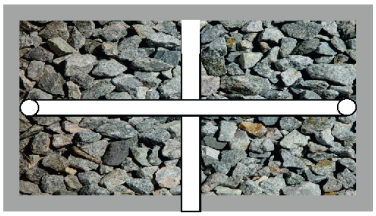
Cover the pillows and level the coir filter bed. Attach the drip bar and level. Tighten the 2" union. Recheck level.

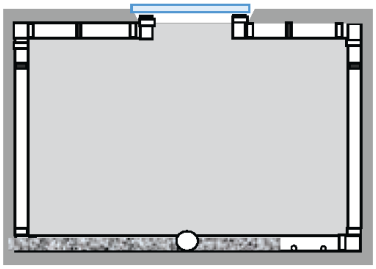


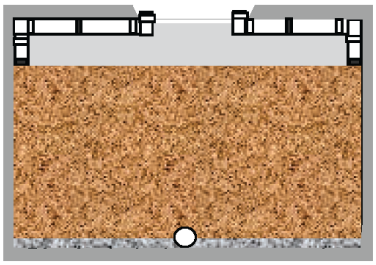
The coir should be ~ 31 inches in depth - it is ok to partially cover the drip bar. It is normal for some settling to occur during the first 6 months. No coir will need to be added during the normal life span of the Coir/Peat biofilter. Expected service life of the Coir is 12– 14 years under normal usage and loading.

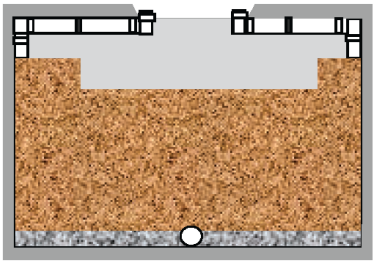


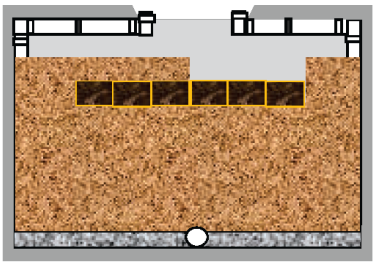
Place and glue 1500 lb crush 4"perforated pipe holes down on the floor of the tank using the provided 4"cross - Place and glue ell and solid pipe upright pvc - strap to the tank wall near the top. Dry fit 90° ell and pipe for the horizontal run at the top of the tank. Dry fit the drip bar in the center of the tank. Drill the holes in the insulation cover and line up with the 4" air exchange pipe. Glue and strap the pipe. Pull the peat pillows from the super sacks and empty all of the coir into the tank— level and create a trough for the peat pillows and 6-8 inches of cover.

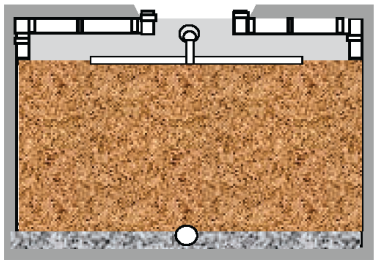


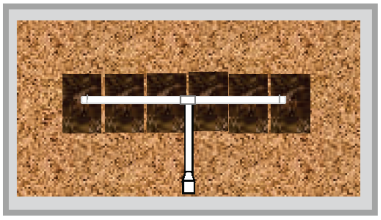


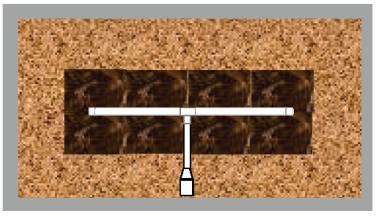












Place peat pillows under the drip bar location as shown - two rows may be needed as pillow count will vary by model - cover with coir to a minimum depth of 6 inches and a maximum depth 10 inches on larger units Install drip bar in the center of the tank and level with a torpedo level.

Planet Care Biofilter 2480 Berkshire PKWY Suite B Clive, Iowa 50325
contact@planetcarebiofilters.com www.planetcarebiofilters.com

OFFICIAL LISTING

NSF certifies that the products appearing on this Listing conform to the requirements of NSF/ANSI 40 - Residential Wastewater Treatment Systems

This is the Official Listing recorded on May 27, 2020.

Planet Care Inc.
4102 Bob White Boulevard
Pulaski, VA 24301
540-980-2420

Facility: Pulaski, VA

Model Number	Rated Capacity Gallons/Day	Classification
Coco/peat Biofilter Series -Concrete [1]		
FXC/PBFC450	450	Class I
FXC/PBFC600	600	Class I
FXC/PBFC750	750	Class I
FXC/PBFC900	900	Class I
Planet Care Coir/Peat Biofilter - Poly		
FXC/PBF 450	450	Class I

[1] Suffix C denotes concrete tank.

Note: Additions shall not be made to this document without prior evaluation and acceptance by NSF.

C0212482

789 N. Dixboro Road, Ann Arbor, Michigan 48105-9723 USA
1-800-NSF-MARK / 734-769-8010
www.nsf.org

Planet Care Biofilters

Wastewater Treatment

Operation and Maintenance for the FXC/PBF Series Biofilters

1. If using a dosing pump to dose the Planet Care module/s disconnect power.
2. Loosen the stainless steel screws and remove the green cover on the module.
This will expose the white insulation cover.
3. Remove the insulation cover that sits upon support pipes and carefully set aside.
4. Loosen and the 2" pvc union and remove the drip bar assembly.
5. Rinse and flush the inlet pipe and drip bar with fresh water. Visually inspect the filter bed for grease and or oily substances that should not be present.
6. Rake and turn the coir chips with a long , ~ 4 – 5", tine rake to break up any bio-mat, if present. The coir chips should be turned over completely down to the peat pillows unless the coir chips appear clean. A short handled rake or fork with 4 inch or longer tines.
7. Re-level the entire coir chip bed completely.
8. Rinse the inlet assembly into the septic tank and reattach the 2" union. Level the 2" drip bar with a bubble level and tighten 2" union. Recheck level.
9. Flush all air exchange and discharge pipes between the sample port and the coir/peat tank with clean water.
10. Inspect effluent. Effluent should be odor free. It may have a tea color for the first year of service is due to coir-peat "washing" and is completely normal with a slight to clear color thereafter.
11. If sampling is required grab an effluent sample from the sampling port or the closest point downstream of the Biofilter. Using a clean jar capture a sample. Place the lid on the jar and place in a cooler with ice and take immediately to the lab. Document the procedure .
12. Examine tank area for any unusual settling and any signs of water infiltration. Make sure that all surface and runoff water is diverted away from system. Replace all lids and secure as per manufacture's requirements.
13. Maintenance Completion. Examine drainfield area for any unusual settling or wet spots. Verify that trees and shrubs have not been planted on or near the Planet Care tanks or module/s or drainfields. Make sure power is reconnected if this is a pumped system. Fill out the maintenance form noting any problems or corrections done during the service visit. Send copies to Planet Care, the owner and Health Department as required by code

Troubleshooting the coir/peat system

A coir/peat treatment system is a Living Ecosystem filter. Like any filter it can become clogged with time and usage. A average life is 12 or more years when operated as per the homeowner manual and serviced regularly. Since the entire treatment of the wastewater is the Living Biofilter correct installation procedures, routine maintenance and the customer following the owners manual will keep the system functioning correctly. Check the septic tank to see if it appears normal. A septic tank that is not operating properly, leaking, not pumped, chemical sheens or lack of regular service may cause the biofilter to bind or fill up. Septic tank solids from a missing septic tank outlet filter can contribute to the binding. If the treatment system is slow perking as demonstrated by water standing on the coir/peat surface longer than a minute indicates it may be time to rake the top loose layer of coir. Check the condition of the peat pillows and replace if mushy. This does not normally occur. A garbage disposal creates many fine solids in the grinding of the waste scraps will shorten the normal life of the coir/peat and require more frequent pumping of the septic tank. Ground and surface water infiltration in any portion of the treatment system will carry fine soil that will prematurely clog the filter. If binding of the bed occurs through normal usage and servicing, finding the cause of the binding is the key to preventing reoccurrence. In cold climates good drainage around the unit, adequate cover and or insulation may be required to prevent freezing, especially on north facing sites or if the unit has not been serviced regularly. By raking the coir down to a the top layer of pillows will show how deep the restrictive layer is. Remove and replace the peat pillows and any grease or oil covered coir. If the binding is uniformly found throughout the whole top layer replacement may be required. Biomat formation is normal and may be raked and mixed back into the top layer of coir. The removal of the top layer is typically done by a snow shovel or similar tool. Rake all coir to the center opening as the clogged coir is removed. The removed coir/peat if clogged by chemicals must be disposed according to state code, typically in a landfill. Coir/peat that has reached its service life by normal operations or soil infiltration once removed should be placed in a safe area to drain and may be lightly sprinkled with lime or on a truck or trailer with a tarp to prevent effluent leaks and hauled to the disposal site. Several days of direct sunlight with turning the material or spreading thinly will make the material safe for mixing into the soil where allowed by code.

Replacement of the peat

Replacement of the coir/peat is needed when the filter bed becomes mushy and or fails a performance test. To replace the coir/peat : Pumping the septic tank and then the coir/peat filter bed is recommended. Use a long tooth rake pull the few peat pillows out and set on a trap or the transport vehicle. Remove the remaining loose coir with a heavy vacuum truck or shovel if OSHA guidelines can be followed. Flush the underdrain with clean water till it runs clear. Follow the install manual for the coir/peat placement procedures Close the unit up as per the install manual. The unit may be returned to service. Dispose of the coir/peat by state code. If no code is in place put the pillows in direct sunlight for a day. They may be sprinkled with lime on the top of each pillow. After a few days in direct sunlight till into the soil, unless prohibited by state code. Dispose of the coir/peat at a landfill when state code does not allow tilling back in to the soil. The landfill operator should be able to incorporate the coir/peat into the soil capping the landfill to help establish a natural cover. Only Planet Care coir/peat material may be used as a replacement.

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contact@planetcarebiofilters.com • planetcarebiofilters.com

Planet Care Biofilters

Wastewater Treatment

Operation and Maintenance Guide for Planet Care FXC/PBF Series Biofilters

Before you service the unit

Call the customer a day or two before service top inform them the date and the approximate time you will be there. Only state approved or licensed service providers that have successfully completed the Planet Care Coir/Peat Biofilter series training are authorized to service the Planet Care Biofilters..

USING THE Planet Care Biofilter FXC/PBF series

The Minimum number of services required by Planet Care Inc. is 1 per year. The biofilter and frequency of maintenance of the Planet Care Biofilter depends on what the customer puts in their system. Residential applications require maintenance as long as the unit is in service.

Do NOT allow the following in any Planet Care Biofilter:

Backflush from a water softener - Floor drains or foundation drains - Ground or surface water
Fats, Oils and Grease (FOG) from any source - Paints or solvents, pesticide products, any toxic substances
RV chemicals, prescription medications - septic tank or septic system additives of any type
Excessive or frequent bleach use or strong disinfectants lye, pine oil or any oil based cleaners
Petroleum products or any non-biodegradable substances - Strong or line cleaning acids
Disposable paper products such as rubber or plastics paper towels, diapers, tampons, condoms, sanitary napkins

The Planet Care Biofilter is a passive, all natural coir/peat filter bed. There is no activated sludge produced in this treatment process. The septic tank is the only portion of this treatment process that produces and routinely requires the removal of accumulated sludge. If any sludge or grease is found on the coir/peat filter bed it can be removed with a shovel or similar tool. If any sludge is found on the coir/peat bed the septic tank and the outlet filter should be checked. If dirt is present on the filter bed check for ground and or surface water leaks. Biomat may form on top of the coir/peat filter. This is normal and will vary based on waste strength from the tank. A proper service will break up any biomat and is mixed into the filter bed with a rake during the raking and turning of the loose peat moss.

There is only regular maintenance of the Planet Care Biofilter and replacement of the coir/peat when the filter has reached its service life. Please refer to the owners guide for the biofilter model number. It is also molded into the biofilter cover to order so the correct replacement kit is ordered.

Be sure to fill out and submit a Maintenance Report. Leave a copy with the homeowner, one to Planet Care Inc. and one to the local Health Department. This a required compliance and should be filed within 10 business days. If any repairs or service can not be done during this visit you should notify the customer on the estimated time and cost of the repair. Your local distributor will carry most replacement parts.

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Appendix D

08. Minimum Tank Capacities. (3-31-22)

a. Tanks serving single dwelling units. The minimum tank capacity is one thousand (1,000) gallons. For each bedroom over four (4) in a dwelling unit, add two hundred fifty (250) gallons. (7-1-25)

b. Tanks serving all other flows. The minimum tank capacity per structure is one thousand (1,000) gallons or a volume equal to at least two (2) times the maximum daily flow, whichever is greater. (7-1-25)