Howard County Health Department
Maura J. Rossman, M.D., Health Officer

Bureau of Environmental Health
8930 Stanford Boulevard, Columbia, MD 21045
Main: 410-313-2640 | Fax: 410-313-2648
TDD 410-313-2323 | Toll Free 1-866-313-6300
www.hchealth.org
Facebook: www.facebook.com/hocohealth

RECEIPT DATE: 10/8/2024

ONSITE SEWAGE DISPOSAL SYSTEM PERMIT: REPAIR – HOLDING TANK

P 587824

APPROVAL DATE: 12/6/2024

A Holding tank

PROPERTY ADDRESS: 12561 Indian Hill Drive

SUBDIVISION: Indian Hills LOT: 4 TAX ID: 03-294919

CONTRACTOR: Sams Creek EMAIL: Sams.creek@aol.com

CONTRACTOR ADDRESS: 2810 Sam's Creek Road, New Windsor, MD 21776 PHONE: 443-821-4932

Holding tank agreement signed:

PROPERTY OWNER: Robert Wilson EMAIL: Technerd3000@gmail.com

OWNER ADDRESS: Same as above PHONE: 717-386-2150

SEPTIC TANK SIZE: 2000g (x3) PUMP SIZE: n/a PUMP TANK CAPACITY: n/a

DISTRIBUTION SYSTEM: ☐ GRAVITY ☐ LPD BEDROOMS: 5 APPLICATION RATE: n/a

TRENCHES:	LINEAR FEET REQUIRED: n/a	INLET DEPTH:
	TRENCH WIDTH:	MAXIMUM BOTTOM DEPTH:
	MINIMUM SPACE BETWEEN TRENCHES:	EFFECTIVE AREA BEGINNING DEPTH:
LOCATION:	**SYSTEM STAKED BY INSTALLER AND VERIFIED BY APPROVING AUTHORITY DURING PRE-CONSTRUCTION INSPECTION.**	
NOTES:	Install holding tanks per approved plan. Tanks must be vacuum tested or watertight tested. Test of high water alarm must occur prior to final approval.	

ISSUED BY: Kevin M. Wolf, L.E.H.S. ISSUE DATE: 10/8/2023 EXPIRATION DATE: 10/8/2025

NOTE: **CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION INSPECTION PRIOR TO BEGINNING ANY INSTALLATION**

NOTE: CONTRACTOR REGERSTERED WITH THE STATE OF MD ON-SITE WASTEWATER PROFESSIONALS BOARD: CONFIRMED ☒

NOTE: CONTRACTOR MUST SCHEDULE AN INSPECTION AND GAIN APPROVAL OF ALL COMPONENTS PRIOR TO COVERING

NOTE: STONE MUST BE APPROVED BY HEALTH DEPARTMENT AND GRAVEL TICKET MUST BE AVAILABLE FOR REVIEW.

NOTE: WATERTIGHT SEPTIC TANKS REQUIRED

NOTE: ALL PARTS OF SEPTIC SYSTEM SHALL BE AT LEAST 100 FEET DOWNGRADIENT FROM ANY WATER WELL

NOTE: MANHOLE RISERS REQUIRED ON ALL SEPTIC TANKS AND PUMP CHAMBERS

NOTE: **AN ELECTRICAL PERMIT IS REQUIRED FOR INSTALLATION OF ANY ELECTRICAL COMPONENTS OF THE SYSTEM**

☒ *ELECTRICAL PERMIT ISSUED* E 24005668

NOTE: **THE HCHD DOES NOT WARRANTY ANY SYSTEM AND CANNOT GUARANTEE THE PERFORMANCE OF THIS SYSTEM AS DESIGNED. BY ACCEPTING THIS PERMIT, THE OWNER AND/OR APPLICANT ACKOWLEDGE THAT THE SPECIFICATIONS DETAILED IN THIS DESIGN ARE ONE POSSIBLE OPTION AND THAT THE HCHD WILL REVIEW OTHER PROPOSALS. YOU HAVE THE OPTION TO SEEK THE ADVICE OF A QUALIFIED DESIGN CONSULTANT OR PROFESSIONAL ENGINEER FOR FURTHER GUIADNCE.**

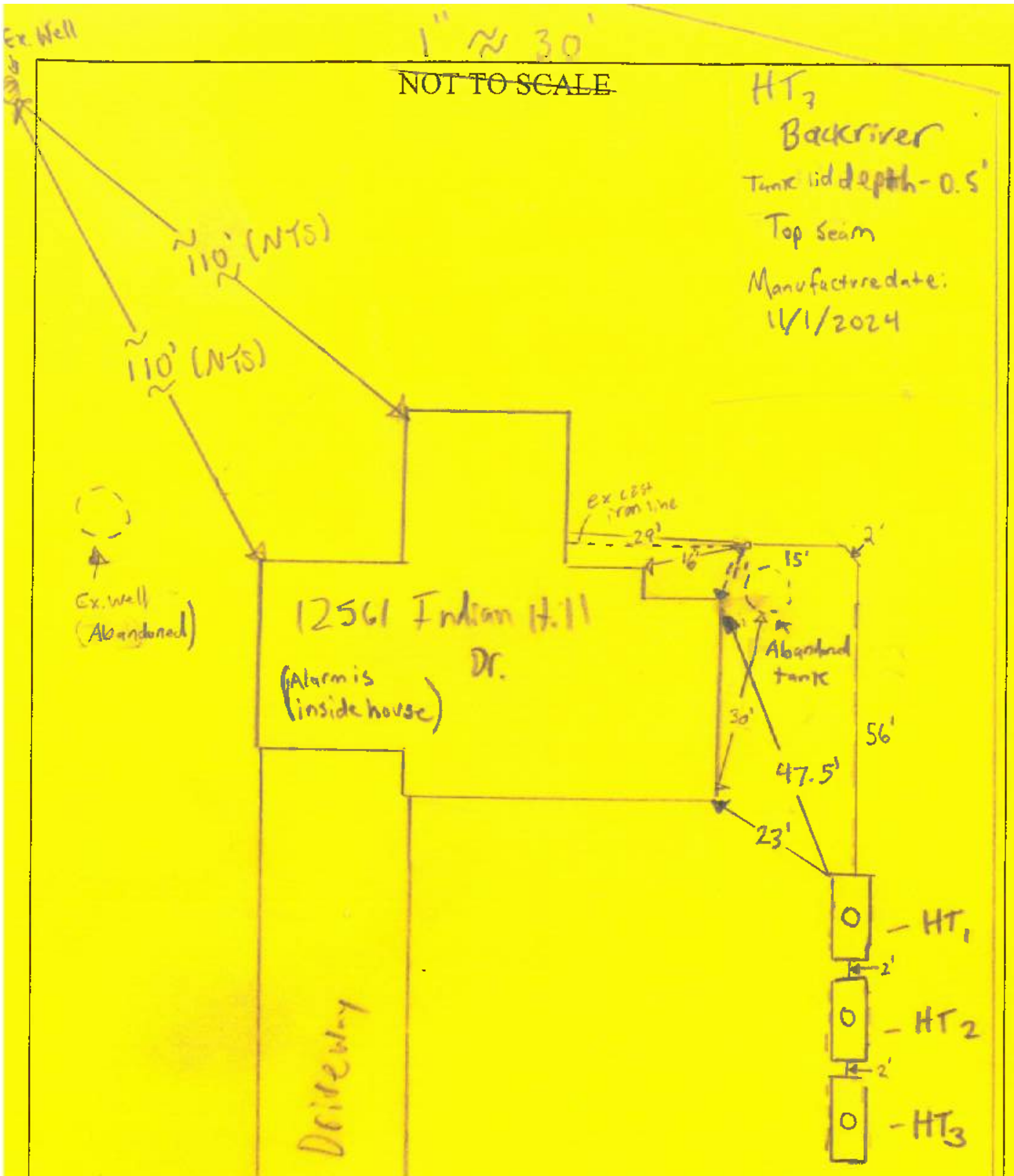
NOTE: **AN INDIVIDUAL CERTIFIED BY MDE AND THE MANUFACTURER FOR BAT INSTALLATION MUST BE PRESENT AT ALL TIMES DURING BAT INSTALLATION.**

NOTE: **MDE RECOMMENDS SEPTIC TANKS, BAT, AND OTHER PRETREATMENT UNITS BE PUMPED AT A FREQUENCY ADEQUATE TO ENSURE THAT SOLIDS ARE NOT DISCHARGED TO THE DISPOSAL AREA**

NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM.

PERMITTEE RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT.

CALL 410-313-1771 TO SCHEDULE INSPECTIONS.



ROAD NAME Indian Hill Drive

TRENCH/DRAINFIELD DATA

WIDTH ______ INLET ______ BOTTOM ______

NUMBER OF TRENCHES ______

TOTAL LENGTH ______

ABSORPTION AREA ______

DISTRIBUTION BOX LEVEL ______

DISTRIBUTION BOX BAFFLE ______

DISTRIBUTION BOX PORT ______

SEPTIC TANK DATA

HT1 ~~SEPTIC TANK 1~~ LEVEL yes

MANUFACTURER Backriver

CAPACITY 2000 GAL

SEAM LOC Top

TANK LID DEPTH 0.5-1

BAFFLES —

BAFFLE FILTER —

MANHOLE LOC Middle

6" PORT LOC ______

WATERTIGHT TEST yes

SLOTTED ______

DATE ON LID 10/30/2024

HT2 ~~PUMP/SEPTIC TANK~~ LEVEL yes

MANUFACTURER Backriver

CAPACITY 2000 GAL

SEAM LOC Top

TANK LID DEPTH 0.5

BAFFLES —

BAFFLE FILTER —

MANHOLE LOC Middle

6" PORT LOC —

WATERTIGHT TEST yes

SLOTTED ______

DATE ON LID 8/22/2024

SEPTIC CONTRACTOR ONSITE INSTALLING SYTEM: Joe Wright

SEPTIC CONTRACTOR ONSITE LICENSED WITH THE STATE OF MD: YES/NO

CONTROL PANEL DATA

CONTROL PANEL HEIGHT N/A
(MIN 30")

INSPECTION DATE N/A

INSPECTION: PASS/FAIL (CIRCLE ONE)

PRE-CONSTRUCTION NOTES:

11/12/2024 - Installer onsite. Unsure of where c/o on patio goes to. Ex well next to porch [illegible] per plan. Excavated + smoked sewer line, found line to go straight to kitchen, does not go around house. No sewer c/o behind garage, c/o is for downspouts. OK to start work. SP/MB

INSTALLATION NOTES:

11/15/2024 - Installer onsite for inspection. Matt [illegible] from Backriver pre-cast onsite, completed air-tight test. All tanks tested + air tight. Measured c/o to house, reinspect for SL connection to tank. SP/MB

11/15/2024 - Contractor Completed the front line to holding tanks. Had enough fall. Existing tank has been abandoned. Electrical work being done currently. Alarm test will be completed later this month/early December. Homeowner is calling certified Well driller to have old existing well abandoned. MB/SP 10/18/24 - Received [illegible] test cert.

12/5/24 Alarms installed in HT_2 and HT_3. Installer confirmed that the level of the float in HT_2 was higher than the alarm in HT_3. MB

FINAL INSPECTOR M. Burns DATE OF APPROVAL 12/5/2024

Clerk of the Circuit Court for

Howard County

9250 Judicial Way
Ellicott City, MD 21043
410-313-2111

LR - Agreement Recording Fee

Name: wilson 1x 20.00 20.00
Ref: 12

LR - Agreement Surcharge

1x 40.00 40.00

SubTotal: 60.00
Total: 60.00

CRD-Credit 60.00
Credit Card Confirmation : 010405

10/02/2024 12:02
#18445388/497/4 CC13-LP
Thank you for visiting us today~

CIRCUIT COURT FOR HOWARD
9250 JUDICIAL WAY
ELLICOTT CITY, MD 21043

SALE

Store: 4153
REF#: 00000002
Batch #: 005 RRN: 427616[illegible]24
10/02/24 12:[illegible]
Trans ID: 1002MDJIP1W8B
APPR CODE: 010405
MASTERCARD Chip
**********4163 **/**

AMOUNT **$60.00**

APPROVED

Mastercard Debit
AID: A0000000041010
TVR: 00 00 08 80 00
TSI: E8 00

CUSTOMER COPY

HOWARD COUNTY
HEALTH DEPARTMENT

Bureau of Environmental Health
8930 Stanford Blvd | Columbia, MD 21045
410.313.2640 - Voice/Relay
410.313.2648 - Fax
1.866.313.6300 - Toll Free

Maura J. Rossman, M.D., Health Officer

CONSENT AGREEMENT FOR USE OF HOLDING TANKS TO CORRECT FAILING SEWAGE SYSTEM

THIS AGREEMENT made this 27th day of September, 2024, by and between Robert A. Wilson, II and Rachel C. Wilson HEREINAFTER REFERRED TO AS Owner, and the Howard County Bureau of Environmental Health, HEREINAFTER REFERRED TO AS the Bureau.

WHEREAS, Owner is seized and possessed of a tract of land at 12561 Indian Hill Drive, Sykesville, MD 21784, known as Tax Map 0009, Grid 0012, Parcel 0136, Tax Account 03-294919, the deed to same being recorded among the land records of Howard County, Maryland in Liber 17771, Folio 00166.

WHEREAS, the Howard County Bureau of Environmental Health has advised the Owner of the need to correct the on-site sewage disposal problems and all parties concerned recognize the only alternative available is a holding tank system to serve the 2,305 square foot residential dwelling containing 5 bedrooms.

WHEREAS, Owner's land meets requirements of COMAR 26.04.02 for installation of a holding tank. NOW THEREFORE, the parties hereto agree as follows:

A. The Owner will install a holding tank(s) consistent with the design approved and permitted by the Bureau and follow the relevant provisions of COMAR 26.04.02 in regard to holding tank operation.

B. Owner agrees to ensure reasonable access to the property and system by the Bureau as well as to provide any information requested by the Bureau to assure proper operation and maintenance of the holding tank(s).

C. Owner agrees that there shall be no liability on the part of the County or Bureau to Owner if the holding tank(s) is not properly maintained.

D. Owner acknowledges and agrees that neither the Bureau nor any of its agents or employees, either officially or individually underwrites the operation of the holding tank(s) and it is understood that the holding tank(s) is a last resort method to correct existing sewage disposal problems on the property.

E. The Owner will devote such care and effort to the maintenance of the holding tank(s) so that it shall not malfunction and cause pollution at the ground surface, the waters of the state, or create a nuisance.

F. The Owner agrees that he shall not alter or tamper with the holding tank(s) in any way that would cause it to malfunction or change it from its extended purpose of sewage storage with the sewage disposal being accomplished by a scavenger.

G. The Owner agrees that, should the holding tank(s) be determined to pose a threat to the public health, safety or comfort, the Bureau may order any necessary changes or corrections for which the Owner agrees to pay. System modification may include requirements for additional tanks and/or more frequent pumping of the holding tank(s).

H. The Owner understands that if violations occur from failure to maintain the holding tank(s) properly, the Bureau may take legal action to ensure compliance.

I. The Owner shall contact the Howard County Bureau of Environmental Health at least 24 hours prior to system completion so that the Bureau may inspect the system in the field with the installer. The Owner further agrees that this system will be installed according to the plans and specifications approved by the Bureau and any changes determined to be necessary by the Bureau as a result of reviewing the field conditions.

J. This agreement shall run with the land and binds the Owner, his heirs, successors or assigns to the provisions of the agreement as long as the property is in existence. Owner further agrees that he/she shall inform any purchaser or lessee of the property of the holding tanks and all conditions in association with it.

K. Owner agrees to record this agreement in the land records of Howard County and assure that it becomes part of the Deed for the subject property in order that prospective buyers may be made aware of the special conditions affecting this property. This agreement shall not be construed to limit any authority of the Bureau to protect the public health, safety or comfort or to issue any other orders or take any other action which is now or may hereinafter be within its authority.

L. Owner certifies that he has obtained a cost estimate and is financially capable of having the sewage removed from the holding tank(s) by a permitted sewage waste hauler on a regular basis so that the holding tank(s) never overflows. The Owner further agrees to enter into and maintain a written service contract which will be renewed annually with any permitted scavenger and will forward a copy to the Bureau prior to the approval of the permit for the holding tank(s) installation and annually thereafter.

M. If the Owner installs any new plumbing, he/she shall install only water conserving fixtures (e.g. toilets installed will use no more than 1.6 gallons of water per flush).

N. The Owner shall not perform any renovations or remodeling which results in any change of use which could lead to a potential increase in wastewater discharge.

O. The approval of a holding tank system provided for in this agreement is only for an interim period until public sewerage facilities become available, at which time the Owner shall connect all buildings to the public facilities and shall properly abandon and back fill the holding tank(s).

P. The Owner shall provide notice of continuous pumping of the tank(s) by a licensed scavenger as evidenced by submitting copies of pumping receipts to the Bureau on a quarterly basis.

WITNESS, the hand of the parties hereto.

Rachel Wilson 9/27/24
Owner Date

9/27/24
Owner Date

10/2/24
Howard County Health Department

Tom W. Ashton R.E.H.S. / L.P.S.S.
On Site Sewage Disposal Consultant

P.O. Box 667
Chincoteague island, VA 23336
540-454-4672

June 28, 2024

RE: 12561 Indian Hill Drive
Sykesville MD 21784
TM 9 Grid 121 Parcel 136
Indian Hill LOT 4

This report is prepared and provided to the client (MIN), the local Approving Authority (Howard County Health Department, "HCHD"), and the Maryland Department of the Environment ("MDE") as the site specific Hydrogeologic report in support of Innovative On-Site Sewage System proposal per State of Maryland Title 26 DEPARTMENT OF THE ENVIRONMENT, Subtitle 04, Chapter 02, .06 Non-Conventional On-Site Sewage Disposal Systems, (A) and (D).

The system design proposal, and the supporting soil / site evaluation information represents a reasonable method, protective of the public health, to replace non-acceptable on-site sewage disposal system serving an existing single - family dwelling.

This Innovative System design proposal is required to be reviewed and accepted by the HCHD and MDE prior to the authorization to prepare construction plans per Title 26 DEPARTMENT OF THE ENVIRONMENT, Subtitle 04, Chapter 02,.06 Non-Conventional On-Site Sewage Disposal Systems, (D) (2) a.

The parcel consists of 1.24 acres and is improved with an approximately 2,300 ft^2+ residence originally built in 1969. Improvements included drilled well (s), and a permitted three-bedroom septic tank / conventional gravel trench system.

The property has most recently been evaluated by the HCHD In March / April, 2024. The purpose of the evaluation was to establish a repair area. The area at the rear of the house was examined. Two pits were evaluated.

One pit ("A") was located in a small area / landscape in the SW corner. Seeping water noted 24" below the ground surface. Free water was noted at 4'. The second pit ("B") was located on a significantly more upland landscape in the SE corner of the property slightly downslope of the existing well serving the property. Seeping water was noted by HCHD at 32". Free water was at approximately 10'. Per the HCHD descriptions, the depths to seeping were at soil horizon contacts. Both pits, "A" and "B" yielded unsatisfactory percolation testing at 48" and 12" respectively.

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On Site Sewage Disposal Consultant

The property was determined to be unsuitable for the installation of a conventional on-site sewage disposal system.

The primary conditions of concern were the landscape position, overall lack of available area, offset to the existing wells, shallow seasonal wetness, and suspected / confirmed slow permeability.

Details on the current system, previous evaluations and permits may be available in the HCHD file.

The only conventional solution available in the regulation is the installation of a holding tank.

Holding tanks are utilized as a last resort when a community sewerage facility is not available or on-site repair protective of public health is not possible.

In these cases, an on-site sewage system proposal for a non-conventional, "Alternative" or "Innovative" system prepared by a consultant may be considered. The site conditions appeared to be "Innovative" and any proposal would be processed in accordance with Title 26 DEPARTMENT OF THE ENVIRONMENT, Subtitle 04, Chapter 02, .06 Non-Conventional On-Site Sewage Disposal Systems.

Further site review was later conducted by HCHD and the MDE Regional Consultant. It was decided that an "Innovative" on-site system evaluation and design proposal may be considered.

A preliminary soil / site evaluation was conducted on May 13, 2024.

The area had approximately .66" rain the previous day, with National Weather Service estimation of precipitation in .5 - 1" over previous 7 days, 2-3" previous 14 days.

I measured and marked the minimum 100' distance from the rear and eastern neighbors. Additionally, the 25' offset from the property's existing well was marked.

Considering the topography and landscape there was only one spot with suitability, downslope of, against the well arcs.

The landscape is by far the best, water appeared to be moving through the site, however the soil characteristics are very marginal, well outside of the rule suitability requirements.

At the road, it is easily seen that the two stormwater structures (and the lot) are at the lowest point of a large, broad drainage swale. I could see and hear flow water in both structures. The flow is crossing the street and moving directly down slope subsurface from the road.

Walking the property, there was some "squishiness" downslope by the house and along the drive as would be expected. There were "soft" areas noted on many portions of the property.

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On Site Sewage Disposal Consultant

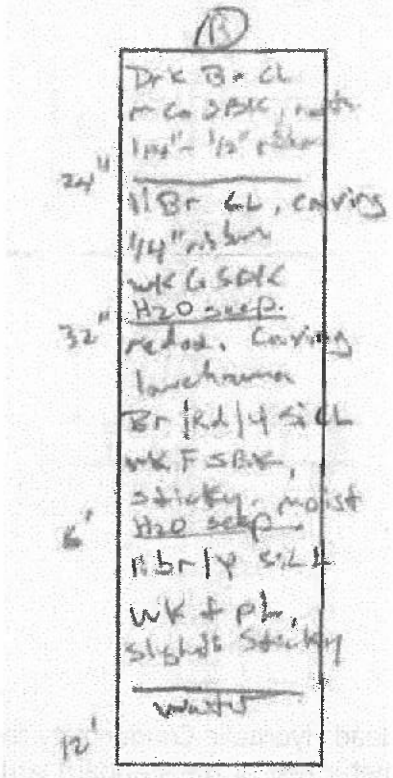
Assuming the house well will need to be abandoned, the area outside the minimum offset 25' below was evaluated.

A small area with a 50' contour was delineated, a sketch developed, and submitted with an email summary to HCHD and MDE with a request to run Hydraulic Conductivity tests. Authorization was granted.

Site and soil evaluations were conducted on June 23rd and 24th, 2024.

Several pilot borings were advanced within the delineated area, including four advanced on for Ksat testing.

Soils were essentially as described during the HCHD evaluation specifically for Pit "B."



Note the depth to free water was observed by HCHD at approximately 10'.

The A horizon was approximately 4 - 6" deep with a Yellowish-Brown color and a friable fine loam texture. The underlying Bw horizon was Yellowish Brown friable to 16 +". Reddish accumulations and a few low chroma colors noted just above the underlying Bt horizon. The color was a Yellowish Brown friable to somewhat firm loam / silty clay loam with low chroma depletions and reddish accumulations. The profile had subrounded quartz gravels, with scattered granite fragments.

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On Site Sewage Disposal Consultant

No features were observed that are interpreted to be indicative of a significant restrictive state. The proposed system design is adequate to address the site conditions as observed.

Four Hydraulic Conductivity (Ksat) tests were set up within the delineated area on the 23rd. All tests were at a 20" depth, 2 – 3 inches into the Bt horizon. All test holes were then filled with water to the surface.

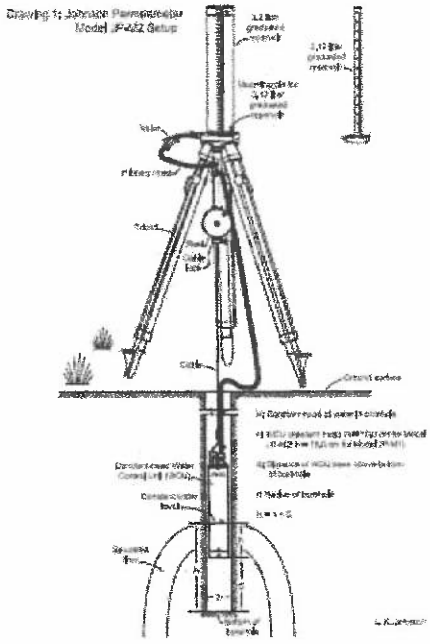
Testing was conducted on the next day, the 24th. The duration of the testing was 3.4 hours.

The Hydraulic Assessment for the site follows this report.

HYDRAULIC ASSESSMENT

Hydraulic Conductivity (Ksat) tests were performed in narrow boreholes utilizing a "Johnson" Precision Permeameter (JP-2).

JP-2



The narrow bore hole Constant Head Hydraulic Conductivity test (Ksat) differs considerably from the MDE single ring infiltrometer test or the standard large diameter falling head "perc" test.

The test provides volume of water over time through the calculated surface area of the static water column depth and the borehole diameter (typically 4"). The tests are conducted until the amount of water absorbed over time reaches a "steady state." Hydraulic Conductivity is a one-dimensional value. The three-dimensional data from the constant head shallow bore hole test is converted to Ksat through calculation utilizing the Glover solution and / or as applicable, methodologies by Amoozegar and Warick.

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On Site Sewage Disposal Consultant

In contrast to the prescriptive falling head, pass / fail "Minutes per Inch" result, Ksat provides values that can be used to confirm the soils characteristics and apply in appropriate system design.

PROPOSED SYSTEM DESIGN
The system design proposal is for 320 gallons per day (GPD) Peak Daily Design Flow.

Base on the limited topographically suitable area, the soils conditions as observed, and the Ksat test results the best solution is the installation of an elevated Areal Fill system.

The 50' x 26' area will be prepared and scarified on contour with a uniform depth (12") of approved sand placed. The upper 10' of the area will contain 12 runs of drip tubing managed as two separate zones. Three inches of sand will be placed over the tubing. The remaining downslope basal extension will have 12" of sand. The side slope and back slope will be scarified sanded for a minimum of 6', tapering to grade. The downslope perimeter will be scarified and sanded for 10', tapering to grade. The area will be appropriated capped and graded.

Once constructed, a lateral groundwater interceptor ("French Drain") is to be installed 10' above the site at a depth of 36".

To maximize management of the absorption area, an average / peak flow equalization timed pump dose regime will be provided. Note the system configuration will not allow the dispersal of greater than the peak daily design flow of 320 GPD. The average flow will be 225 GPD. See the *example* two zone dose regime following.

Advanced pretreatment would be required. To maintain an average dose regime as much as possible, a minimum 1500-gallon drip dispersal dose equalization tank.

This report and system design proposal is representative of, and consistent with current standard of practice in the protection of the public health and the water resource. The site is somewhat marginal and represents a level of risk.

A through plumbing audit is highly recommended with the installation of water saving devices / fixtures and water conservation practices.

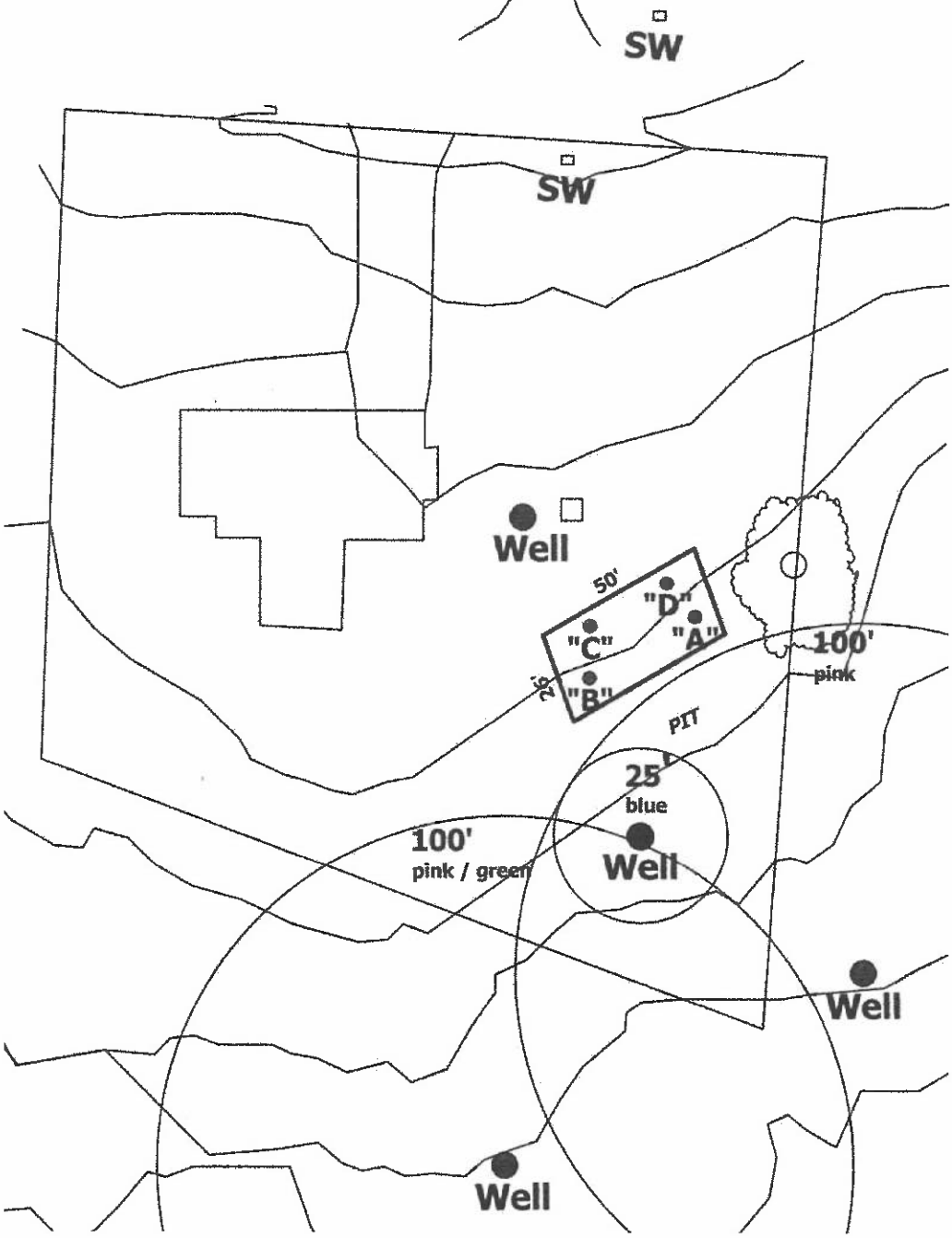
If you have any questions or require further information, please feel free to get in touch.

Tom W. Ashton R.E.H.S., L.P.S.S.

Tom W. Ashton R.E.H.S. / L.P.S.S.
On Site Sewage Disposal Consultant

SITE SKETCH

(not to scale)



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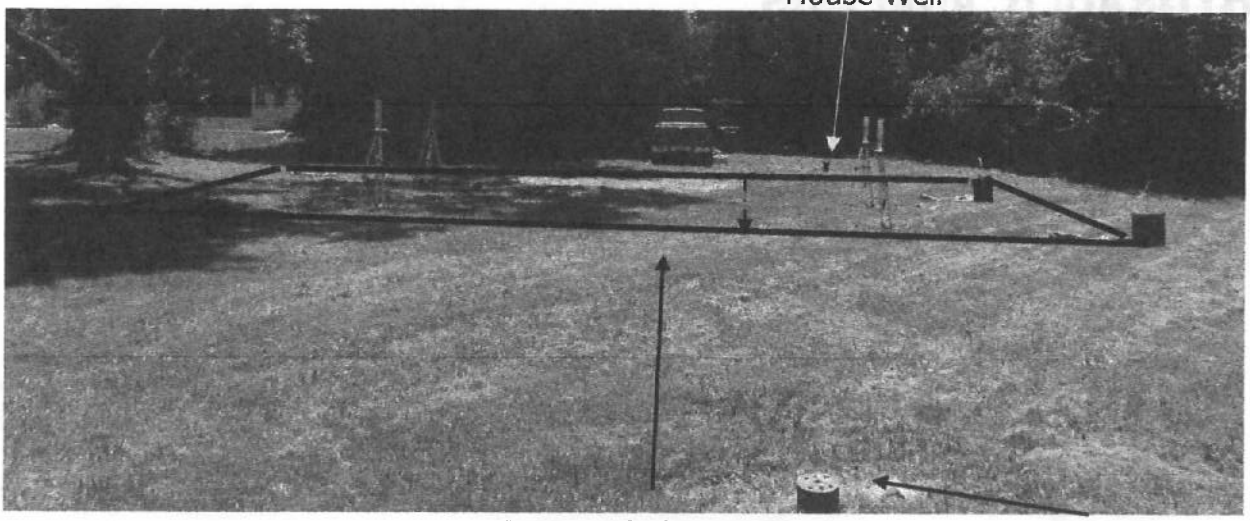
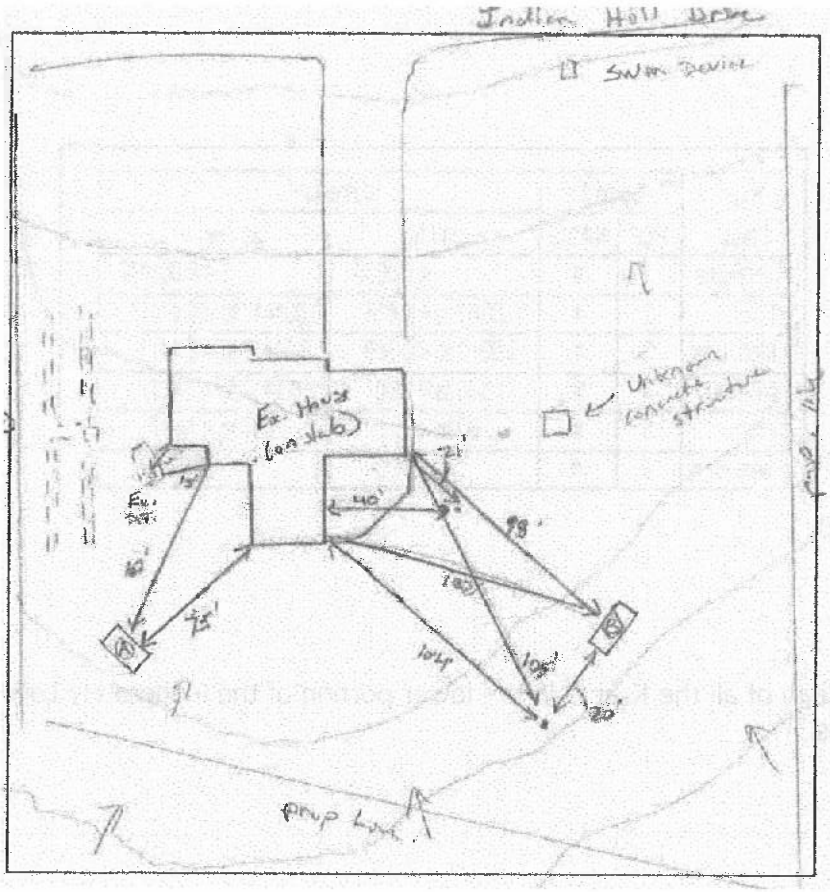


HCHD SKETCH

(not to scale)



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On Site Sewage Disposal Consultant

HYDRAULIC ANALYSIS

Ksat Class

	CM / Day	Test Hole ID No.	A HC in./hr
	5.49	A - 22	0.09
	3.66	B -22	0.06
	1.22	C - 22	0.02
	2.44	D - 22	0.04

		AVG	3.20 cm / Day	In. / Hour
D	AVG			0.053
E	Stand. DEV			
F	Low SD			0.027
G	Geo Mean			0.046
H	Min. Test			0.020
I	VAR			

2.78 cm/day

K_{sat} Class	Code [1]		Criteria [2]	
	PDP	NASIS	cm / hr	in / hr
Very Low	1	≠	< 0.0036	< 0.001417
Low	2	≠	0.00360 to < 0.036	0.001417 to < 0.01417
Mod. Low	3	≠	0.0360 to < 0.360	0.01417 to < 0.1417
Mod. High	4	≠	0.360 to < 3.60	0.1417 to < 1.417
High	5	≠	3.60 to < 36.0	1.417 to < 14.17
Very High	6	≠	≥ 36.0	≥ 14.17

The Geometric Mean of all the Ksat is in the lower portion of the Moderately Low Hydraulic Conductivity Class.

Tom W. Ashton R.E.H.S. / L.P.S.S.
On Site Sewage Disposal Consultant

HYDRAULIC ANALYSIS

K-2 12561 Indian Hill

BASAL Loading = 0.246 g/ft²/day or 1.00 cm / Day

AREA ft² = 1300 GPD = 320 0.0165 in / Hr

CM / Day	Test Hole ID No.	A HC in./hr	C gal. / day	Loading Rate %
5.49	A - 22	0.09	1.346	18.3%
3.66	B -22	0.06	0.898	27.4%
1.22	C - 22	0.02	0.299	82.3%
2.44	D - 22	0.04	0.598	41.1%

AVG 3.20 cm / Day In. / Hour

D	AVG	0.79 g /day or	31.34% of design		0.053
E	Stand. DEV	0.39			
F	Low SD	0.40 g /day or	61.77% of design		0.027
G	Geo Mean	0.68 g /day or	36.09% of design		0.046
H	Min. Test	0.30 g /day or	82.28% of design		0.020
I	VAR	0.15			

2.78 cm/day

"A" Measured Hydraulic Conductivity in Inches per Hour.

"D" Average of all data in "C" compared to footprint area loading
"E" Standard deviation of all data in "C"
"F" "D" - "E", 88% of all the data is "faster" compared to footprint area loading
"G" Geometric Mean of all data in "C" compared to footprint area loading
"H" The lowest individual, (slowest) data compared to footprint area loading
"I" ("D" - "G") / "G"

Note that the analysis represents infiltrative surface loading rate (Fill bottom) of the absorption area, with the Ksat depth 22" below the point of effluent application just into the first limiting soil boundary.

The Geometric Mean represents <37% of the peak daily design flow infiltrative loading rate.

Tom W. Ashton R.E.H.S. / L.P.S.S.
On Site Sewage Disposal Consultant

LOADING RATES

TUBING SANDBED LOADING RATE

Sandbed Width (10') x Sandbed Length (50') = 500 ft^2.
320 GPD / 500 ft^2 = .66 gal/ft^2/day

BASAL LOADING RATE

(Tubing Sand Bed and Downslope Extension)

50 Length x 26' Width = 1300 ft^2
320 GPD / 1300 ft^2 = .246 gal/ft^2/day

DOSE REGIME *example*

320 GALLONS PER (GPD) Peak Daily Design Flow

DOSE REGIME 225 Dose Regime AVG Flow (GPD) @ 70.40%

Total System Tubing Length =	1200	FT		TUBING VC		70
Z1 Tubing Length =	600	FT or	50.0%	7.8	GAL	
Z2 Tubing Length =	600	FT or	50.0%	7.8	GAL	
AVERAGE FLOW =	225.28	GPD				
Z1 Dose Percentage =	112.6	GPD				
Z2 Dose Percentage =	112.6	GPD				
TOTAL # of DOSES per DAY =	6.0	or every		4.0	Hours	
# of DOSES per ZONE per DAY =	3.0	or every		8.0	Hours	

Z1 Dose VOLUME =	37.5	GAL	4.8	x Tubing Dose VOL.
Z2 Dose VOLUME =	37.5	GAL	0.06	GAL / Emitter per Dose
Dose Run TIME =	4.17	MINUTES	8.0	OZ / Emitter per Dose

PEAK FLOW =	320	GPD			
TOTAL # of DOSES per DAY =		8.5 or every	2.8	Hours	
# of DOSES per ZONE per DAY =		4.3 or every	5.6	Hours	

NOTE: At average flow each zone receives a dose of .2" every 8 Hours below tubing at soil interface.

Tom W. Ashton R.E.H.S. / L.P.S.S.
On Site Sewage Disposal Consultant

SOIL EVALUATION REPORT / SYSTEM DESIGN PROPOSAL LIMITATIONS and DISCLAIMER

This report is prepared and provided to the client, the local Approving Authority, and the Maryland Department of the Environment (MDE) as the site specific Hydrogeologic report in support of Innovative On-Site Sewage System proposal per State of Maryland Title 26 DEPARTMENT OF THE ENVIRONMENT, Subtitle 04, Chapter 02, .06 Non-Conventional On-Site Sewage Disposal Systems, (A) and (D).

The system design proposal and the supporting soil / site evaluation represents a reasonable method, protective of the public health, to replace a non-acceptable on-site sewage disposal system serving an existing single - family dwelling.

The report is prepared is been prepared to the best of my ability, knowledge, and skills in accordance with the regulatory regulations, policies, and guidance in effect at the time. The evaluation and recommendations have been conducted and presented in accordance with the current standard of practice referencing previous evaluations by the government, others, and includes desktop investigation, and / or other sources as available. Field evaluation / analysis and proposed system design are as described herein. There may be limiting conditions not revealed in course of this investigation.

This Innovative System design proposal is required to be reviewed and accepted by the Approving Authority and MDE prior to the preparation of construction plans per Title 26 DEPARTMENT OF THE ENVIRONMENT, Subtitle 04, Chapter 02,.06 Non-Conventional On-Site Sewage Disposal Systems, (D) (2) a.

This report and system design proposal is the property of the client. This document is not a permit to install a system or to is to be construed to be assurance that government approval or permit issuance will be secured. No warranty, expressed or implied, is made. This document does not represent or warrant the operation or proper functioning of any on-site wastewater treatment and dispersal functioning for any period of time.

Design proposal and sketches are based on observed points in field, absorption area stakeout, and where applicable / available county GIS, available government files, and evaluations by others.

Field control has been prepared for the sole purpose of satisfying state and local on-site sewage review for preliminary design proposal. Locations and elevations interpolated / assumed. The evaluation and proposal do not represent a survey or is intended to address compliance with other laws, regulations, and ordinances.

Maryland
Department of
the Environment

Wes Moore, Governor
Aruna Miller, Lt. Governor

Serena McIlwain, Secretary Designate
Suzanne E. Dorsey, Deputy Secretary

4/26/2023

Tom Ashton
P.O. Box 667
Chincoteague VA, 23336

RE: Confirmation of Tom Ashton Onsite Sewage Disposal
Registration for an Individual Providing On-Site Wastewater Services in Maryland

Dear Tom Ashton:

The Maryland Department of the Environment's On-Site Systems Division hereby affirms that an application bearing your name and associated payment has been processed in accordance with requirements set forth in Environmental Article §9-11A. You are formally registered with the Department as an individual who provides On-Site Wastewater Services in Maryland. This registration is valid for a period of two years beginning December 31, 2022, and expiring on December 31, 2024.

Per the Department's previous correspondence, individuals who provide on-site wastewater services in the State may only continue to do so if they pay a $150.00 fee to the Department on or before December 31, 2022, and every two years thereafter until the Board of On-Site Wastewater Professionals is operational. Please retain this document as proof of registration while performing on-site wastewater services in Maryland. In addition, your name has been added to the list of registered individuals on MDE's website.

Find out more about the Board of On-Site Wastewater Professionals, proposed regulations, and other updated information regarding the on-site wastewater systems at https://mde.maryland.gov/programs/water/BayRestorationFund/OnsiteDisposalSystems/Pages/WastewaterServiceProfessionals.aspx .

If you have any questions, please contact the Onsite System Division at 410-537-3778 or email onsitewastewater@maryland.gov.

Sincerely,

Adam Corry

Adam N. Corry, LEHS
Chief, Onsite Systems Division
Wastewater Pollution, Prevention and Reclamation Program

Constant-Head Borehole Permeameter Test

Solution: Amoozegar & Warrick (Shallow WT or Impermeable layer)

File Name.....: Indian Hill

Project Name.....:	12561 Indian Hill	Boring No.....:	A-20
Project No.....:		Investigators.....:	TW Ashton
Project Location.....:	Sykesville MD 21784	Date.....:	June 24, 2024
Boring Depth.....:	20" (Specify units)	WCU Base Ht. h:	10.2 cm***
Boring Diameter.....:	15.24 cm	WCU Susp. Ht. S:	15.2 cm
Boring Radius r.....:	7.62 cm	Const. Wtr. Ht. H:	25.4 cm
WT/Imp. Standoff s..:	30.5 cm	H/r**.....:	3.3 (H/r > 5.0)
Soil Temperature T..:	22 °C		
Dyn. Visc. @ T.....:	0.000955 kg/m·s	Dyn. Visc. @ T_B.:	0.001003 kg/m·s

Solution and Terminology (Amoozegar & Warrick)*

$K = 3Q\{\ln(H/r)/[\pi H(3H+2s)]\}$ [Basic A&W #15 solution]

$K_B = 3QV\{\ln(H/r)/[\pi H(3H+2s)]\}$ [Temp-corrected A&W #15 solution]

K_B: Saturated Hydraulic Conductivity @ base Tmp. T_B °C: 20

Q: Rate of flow of water from the borehole

H: Constant height of water in the borehole

r: Radius of the cylindrical borehole

s: Dist. (standoff) between bottom of the BH and a WT. or Imp. Layer

V: Dynamic viscosity of water @ T °C/Dyn. Visc. of water @ T_B °C

Reservoir Volume (ml)	Time (12 hr) (h:mm:ss A/P)	Volume Out (ml)	Elapsed Time Total (min)	Elapsed Time Interval (min)	Flow Rate (ml/min)	K_B Equivalent Values (µm/sec)	(cm/sec)	(cm/day)	(in/hr)	(ft/day)
3,270	9:00:00 AM									
1,700	9:05:00 AM	1,570	5.00	5.00	314.0	16.4	1.64E-03	142.1	2.33	4.66
1,500	9:15:00 AM	200	15.00	10.00	20.0	1.0	1.05E-04	9.0	0.15	0.30
1,210	9:25:00 AM	290	25.00	10.00	29.0	1.5	1.52E-04	13.1	0.22	0.43
950	9:45:00 AM	260	45.00	20.00	13.0	0.7	6.81E-05	5.9	0.10	0.19
3,250	9:45:30 AM									
3,050	9:55:00 AM	200	54.50	9.50	21.1	1.1	1.10E-04	9.5	0.16	0.31
2,890	10:05:00 AM	160	64.50	10.00	16.0	0.8	8.38E-05	7.2	0.12	0.24
2,600	10:25:00 AM	290	84.50	20.00	14.5	0.8	7.59E-05	6.6	0.11	0.22
2,330	10:45:00 AM	270	104.50	20.00	13.5	0.7	7.07E-05	6.1	0.10	0.20
2,080	11:05:00 AM	250	124.50	20.00	12.5	0.7	6.55E-05	5.7	0.09	0.19
1,850	11:25:00 AM	230	144.50	20.00	11.5	0.6	6.02E-05	5.2	0.09	0.17
1,620	11:45:00 AM	230	164.50	20.00	11.5	0.6	6.02E-05	5.2	0.09	0.17
1,370	12:05:00 PM	250	184.50	20.00	12.5	0.7	6.55E-05	5.7	0.09	0.19
1,120	12:25:00 PM	250	204.50	20.00	12.5	0.7	6.55E-05	5.7	0.09	0.19

Note:
Boring advanced, prepared, and sanded on previous afternoon June 23rd. Test hole filled with water to

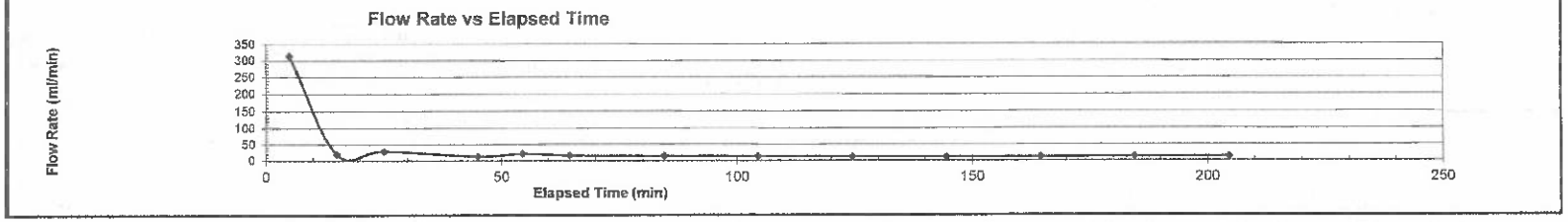
Natural Moisture.....:	Slty Moist / Dry	Consistence.....:	Friable
USDA Txt./USCS Class:	II	WT Depth.....:	12"
Struct./% Pass. #200..:	na	Init. Sat. Time...:	NA

Enter K_{satB} Value.....: .09 in. / hr.

Data Logger No.:

Note: K_B is determined by visually analyzing the Flow Rate vs Elapsed Time Graph and averaging the the results for the final three to five stabilized values.

*Amoozegar & Warrick, Equation #15, 1986. The distance from the bottom of the borehole to the water table or an impermiable layer is ≤2X the depth of the water in the borehole. Redoximorphic soil indicators are ignored in determining water table depth for this solution. **H/r ≥5 to ≤10. ***Model JP-M1: h = 15 cm, WCU-3 (3" Dia.): h = 10 cm, WCU-2 (2" Dia.): h = 17 cm. Revised 2/28/2020.



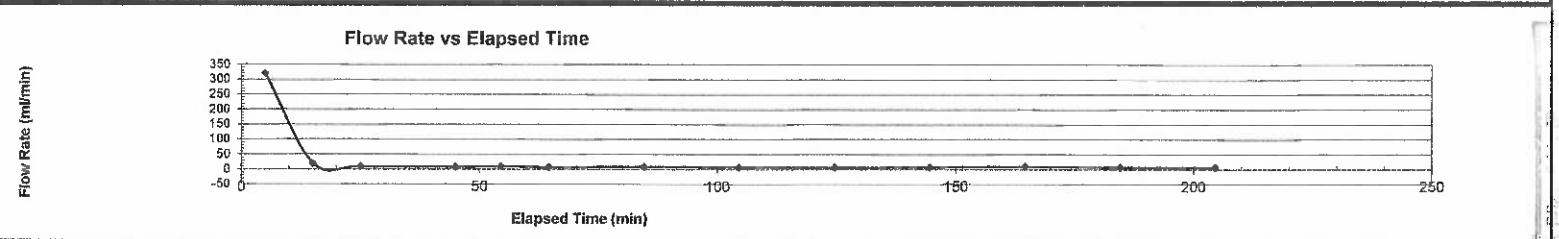
Constant-Head Borehole Permeameter Test		Solution: Amoozegar & Warrick (Shallow WT or Impermeable layer)		File Name.....: Indian Hill
Project Name.....: 12561 Indian Hill		Boring No.....: B-20		Solution and Terminology (Amoozegar & Warrick)*
Project No.....:		Investigators.....: TW Ashton		$K = 3Q\{\ln(H/r)/[\pi H(3H+2s)]\}$ [Basic A&W #15 solution]
Project Location.....: Sykesville MD 21784		Date.....: June 24, 2024		$K_B = 3QV\{\ln(H/r)/[\pi H(3H+2s)]\}$ [Temp-corrected A&W #15 solution]
Boring Depth.....:	20" (Specify units)	WCU Base Ht. h:	10.2 cm***	K_B: Saturated Hydraulic Conductivity @ base Tmp. T_B °C: 20
Boring Diameter.....:	15.24 cm	WCU Susp. Ht. S:	15.2 cm	Q: Rate of flow of water from the borehole
Boring Radius r.....:	7.62 cm	Const. Wtr. Ht. H:	25.4 cm	H: Constant height of water in the borehole
WT/Imp. Standoff s..:	30.5 cm	H/r**.....:	3.3 (H/r > 5.0)	r: Radius of the cylindrical borehole
Soil Temperature T..:	22 °C			s: Dist. (standoff) between bottom of the BH and a WT. or Imp. Layer
Dyn. Visc. @ T.....:	0.000955 kg/m·s	Dyn. Visc. @ T_B.:	0.001003 kg/m·s	V: Dynamic viscosity of water @ T °C/Dyn. Visc. of water @ T_B °C

Reservoir Volume (ml)	Time (12 hr) (h:mm:ss A/P)	Volume Out (ml)	Elapsed Time Total (min)	Elapsed Time Interval (min)	Flow Rate (ml/min)	K_B Equivalent Values (µm/sec)	(cm/sec)	(cm/day)	(in/hr)	(ft/day)
3,210	9:01:00 AM									
1,610	9:06:00 AM	1,600	5.00	5.00	320.0	16.8	1.68E-03	144.8	2.38	4.75
1,410	9:16:00 AM	200	15.00	10.00	20.0	1.0	1.05E-04	9.0	0.15	0.30
1,310	9:26:00 AM	100	25.00	10.00	10.0	0.5	5.24E-05	4.5	0.07	0.15
1,140	9:46:00 AM	170	45.00	20.00	8.5	0.4	4.45E-05	3.8	0.06	0.13
3,200	9:46:30 AM									
3,110	9:56:00 AM	90	54.50	9.50	9.5	0.5	4.96E-05	4.3	0.07	0.14
3,030	10:06:00 AM	80	64.50	10.00	8.0	0.4	4.19E-05	3.6	0.06	0.12
2,860	10:26:00 AM	170	84.50	20.00	8.5	0.4	4.45E-05	3.8	0.06	0.13
2,710	10:46:00 AM	150	104.50	20.00	7.5	0.4	3.93E-05	3.4	0.06	0.11
2,570	11:06:00 AM	140	124.50	20.00	7.0	0.4	3.67E-05	3.2	0.05	0.10
2,410	11:26:00 AM	160	144.50	20.00	8.0	0.4	4.19E-05	3.6	0.06	0.12
2,220	11:46:00 AM	190	164.50	20.00	9.5	0.5	4.98E-05	4.3	0.07	0.14
2,070	12:06:00 PM	150	184.50	20.00	7.5	0.4	3.93E-05	3.4	0.06	0.11
1,920	12:26:00 PM	150	204.50	20.00	7.5	0.4	3.93E-05	3.4	0.06	0.11

Note:
Boring advanced, prepared, and sanded on previous afternoon June 23rd. Test hole

Natural Moisture.....: Sity Moist / Dry	Consistence.....: Friable	Enter K_{satB} Value.....:	.06 in. / hr
USDA Txt./USCS Class: tl	WT Depth.....: 12"	Data Logger No.:	Note: K_B is determined by visually analyzing the Flow Rate vs Elapsed Time Graph and averaging the the results for the final three to five stabilized values.
Struct./% Pass. #200..: na	Init. Sat. Time...: NA		

*Amoozegar & Warrick, Equation #15, 1986. The distance from the bottom of the borehole to the water table or an impermiable layer is ≤2X the depth of the water in the borehole. Redoximorphic soil indicators are ignored in determining water table depth for this solution. **H/r ≥5 to ≤10. ***Model JP-M1: h = 15 cm, WCU-3 (3" Dia.): h = 10 cm, WCU-2 (2" Dia.): h = 17 cm. © Johnson Permeameter, LLC. Revised 2/28/2020.



Constant-Head Borehole Permeameter Test

Solution: Amoozegar & Warrick (Shallow WT or impermeable layer)

File Name.....: Indian Hill

Project Name.....:	12561 Indian Hill	Boring No.....:	C-20	Solution and Terminology (Amoozegar & Warrick)*	
Project No.....:		Investigators.....:	TW Ashton	$K = 3Q\{\ln(H/r)/[\pi H(3H+2s)]\}$ [Basic A&W #15 solution]	
Project Location.....:	Sykesville MD 21784	Date.....:	June 24, 2024	$K_B = 3QV\{\ln(H/r)/[\pi H(3H+2s)]\}$ [Temp-corrected A&W #15 solution]	
Boring Depth.....:	20" (Specify units)	WCU Base Ht. h:	10.2 cm***	K_B: Saturated Hydraulic Conductivity @ base Tmp. T_B °C:	20
Boring Diameter.....:	15.24 cm	WCU Susp. Ht. S:	15.2 cm	Q: Rate of flow of water from the borehole	
Boring Radius r.....:	7.62 cm	Const. Wtr. Ht. H:	25.4 cm	H: Constant height of water in the borehole	
WT/Imp. Standoff s..:	30.5 cm	H/r**.....:	3.3 (H/r > 5.0)	r: Radius of the cylindrical borehole	
Soil Temperature T..:	22 °C			s: Dist. (standoff) between bottom of the BH and a WT. or Imp. Layer	
Dyn. Visc. @ T.....:	0.000955 kg/m·s	Dyn. Visc. @ T_B.:	0.001003 kg/m·s	V: Dynamic viscosity of water @ T °C/Dyn. Visc. of water @ T_B °C	

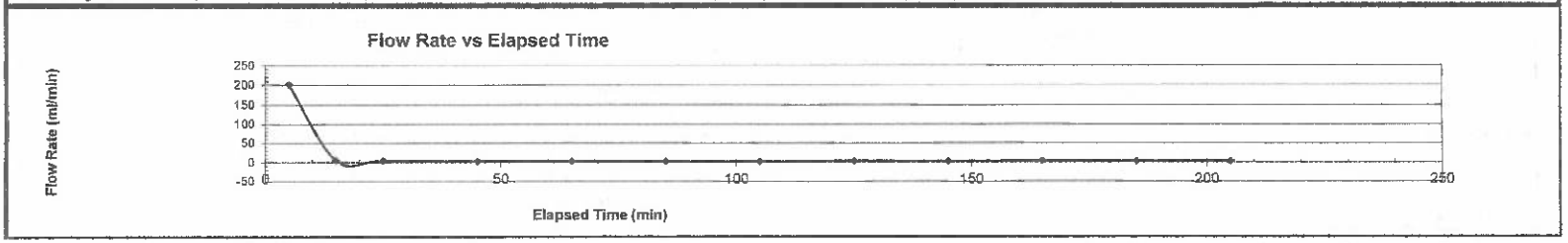
Reservoir Volume (ml)	Time (12 hr) (h:mm:ss A/P)	Volume Out (ml)	Elapsed Time Total (min)	Elapsed Time Interval (min)	Flow Rate (ml/min)	K_B Equivalent Values (µm/sec)	(cm/sec)	(cm/day)	(in/hr)	(ft/day)
2,780	9:02:00 AM									
1,770	9:07:00 AM	1,010	5.00	5.00	202.0	10.6	1.06E-03	91.4	1.50	3.00
1,720	9:17:00 AM	50	15.00	10.00	5.0	0.3	2.62E-05	2.3	0.04	0.07
1,670	9:27:00 AM	50	25.00	10.00	5.0	0.3	2.62E-05	2.3	0.04	0.07
1,610	9:47:00 AM	60	45.00	20.00	3.0	0.2	1.57E-05	1.4	0.02	0.04
1,550	10:07:00 AM	60	65.00	20.00	3.0	0.2	1.57E-05	1.4	0.02	0.04
1,490	10:27:00 AM	60	85.00	20.00	3.0	0.2	1.57E-05	1.4	0.02	0.04
1,440	10:47:00 AM	50	105.00	20.00	2.5	0.1	1.31E-05	1.1	0.02	0.04
1,360	11:07:00 AM	80	125.00	20.00	4.0	0.2	2.09E-05	1.8	0.03	0.06
1,300	11:27:00 AM	60	145.00	20.00	3.0	0.2	1.57E-05	1.4	0.02	0.04
1,220	11:47:00 AM	80	165.00	20.00	4.0	0.2	2.09E-05	1.8	0.03	0.06
1,160	12:07:00 PM	60	185.00	20.00	3.0	0.2	1.57E-05	1.4	0.02	0.04
1,100	12:27:00 PM	60	205.00	20.00	3.0	0.2	1.57E-05	1.4	0.02	0.04

Note:
Boring advanced, prepared, and sanded on previous afternoon June 23rd. Test hole filled with water to surface.

Natural Moisture.....:	Silty Moist / Dry	Consistence.....:	Friable	Enter K_{satB} Value.....:	.02 in. / hr.
USDA Txt./USCS Class:	II	WT Depth.....:	12"	Data Logger No.:	
Struct./% Pass. #200..:	na	Init. Sat. Time...:	NA		

Note: K_B is determined by visually analyzing the Flow Rate vs Elapsed Time Graph and averaging the the results for the final three to five stabilized values.

*Amoozegar & Warrick, Equation #15, 1986. The distance from the bottom of the borehole to the water table or an impermiable layer is ≤2X the depth of the water in the borehole. Redoximorphic soil indicators are ignored in determining water table depth for this solution. **H/r ≥5 to ≤10. ***Model JP-M1: h = 15 cm, WCU-3 (3" Dia.): h = 10 cm, WCU-2 (2" Dia.): h = 17 cm. Revised 2/28/2020.

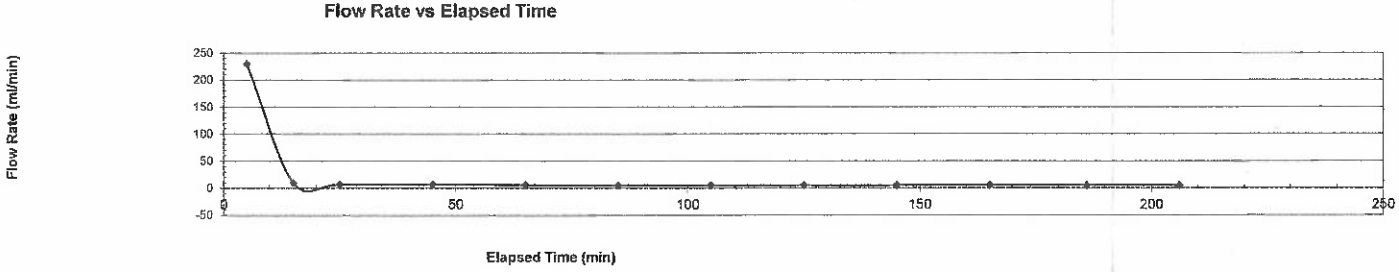


Constant-Head Borehole Permeameter Test			Solution: Amoozegar & Warrick (Shallow WT or Impermeable layer)			File Name.....: Indian Hill				
Project Name.....: 12561 Indian Hill			Boring No.....: D-20			Solution and Terminology (Amoozegar & Warrick)*				
Project No.....:			Investigators.....: TW Ashton			$K = 3Q\{\ln(H/r)/[\pi H(3H+2s)]\}$ [Basic A&W #15 solution]				
Project Location.....: Sykesville MD 21784			Date.....: June 24, 2024			$K_B = 3QV\{\ln(H/r)/[\pi H(3H+2s)]\}$ [Temp-corrected A&W #15 solution]				
Boring Depth.....: 20" (Specify units)			WCU Base Ht. h: 10.2 cm***			K_B: Saturated Hydraulic Conductivity @ base Tmp. T_B °C: 20				
Boring Diameter.....: 15.24 cm			WCU Susp. Ht. S: 15.2 cm			Q: Rate of flow of water from the borehole				
Boring Radius r.....: 7.62 cm			Const. Wtr. Ht. H: 25.4 cm			H: Constant height of water in the borehole				
WT/Imp. Standoff s..: 30.5 cm			H/r**.....: 3.3 (H/r > 5.0)			r: Radius of the cylindrical borehole				
Soil Temperature T..: 22 °C						s: Dist. (standoff) between bottom of the BH and a WT. or Imp. Layer				
Dyn. Visc. @ T.....: 0.000955 kg/m·s			Dyn. Visc. @ T_B.: 0.001003 kg/m·s			V: Dynamic viscosity of water @ T °C/Dyn. Visc. of water @ T_B °C				
Reservoir Volume (ml)	Time (12 hr) (h:mm:ss A/P)	Volume Out (ml)	Elapsed Time Total (min)	Elapsed Time Interval (min)	Flow Rate (ml/min)	K_B Equivalent Values (µm/sec)	(cm/sec)	(cm/day)	(in/hr)	(ft/day)
3,210	9:03:00 AM									
2,060	9:08:00 AM	1,150	5.00	5.00	230.0	12.0	1.20E-03	104.1	1.71	3.41
1,960	9:18:00 AM	100	15.00	10.00	10.0	0.5	5.24E-05	4.5	0.07	0.15
1,890	9:28:00 AM	70	25.00	10.00	7.0	0.4	3.67E-05	3.2	0.05	0.10
1,750	9:48:00 AM	140	45.00	20.00	7.0	0.4	3.67E-05	3.2	0.05	0.10
1,630	10:08:00 AM	120	65.00	20.00	6.0	0.3	3.14E-05	2.7	0.04	0.09
1,520	10:28:00 AM	110	85.00	20.00	5.5	0.3	2.88E-05	2.5	0.04	0.08
1,420	10:48:00 AM	100	105.00	20.00	5.0	0.3	2.62E-05	2.3	0.04	0.07
1,320	11:08:00 AM	100	125.00	20.00	5.0	0.3	2.62E-05	2.3	0.04	0.07
1,220	11:28:00 AM	100	145.00	20.00	5.0	0.3	2.62E-05	2.3	0.04	0.07
1,110	11:48:00 AM	110	165.00	20.00	5.5	0.3	2.88E-05	2.5	0.04	0.08
1,000	12:09:00 PM	110	186.00	21.00	5.2	0.3	2.74E-05	2.4	0.04	0.08
890	12:29:00 PM	110	206.00	20.00	5.5	0.3	2.88E-05	2.5	0.04	0.08

Note:
Boring advanced, prepared, and sanded on previous afternoon June 23rd. Test hole

Natural Moisture.....: Slty Moist / Dry	Consistence.....: Friable	Enter K_{satB} Value.....:	.04 in. / hr		
USDA Txt./USCS Class: Il	WT Depth.....: 12"	Data Logger No.:	Note: K_B is determined by visually analyzing the Flow Rate vs Elapsed Time Graph and averaging the the results for the final three to five stabilized values.		
Struct./% Pass. #200..: na	Init. Sat. Time...: NA				

*Amoozegar & Warrick, Equation #15, 1986. The distance from the bottom of the borehole to the water table or an impermiable layer is ≤2X the depth of the water in the borehole. Redoximorphic soil indicators are ignored in determining water table depth for this solution. **H/r ≥5 to ≤10. ***Model JP-M1: h = 15 cm, WCU-3 (3" Dia.): h = 10 cm, WCU-2 (2" Dia.): h = 17 cm. ©Johnson Permeameter, LLC. Revised 2/28/2020.



Wolf, Kevin

From: Wolf, Kevin
Sent: Wednesday, April 24, 2024 11:05 AM
To: 'Amir Forghani'
Cc: Wendy Min
Subject: RE: MDE Evaluation for 12561 Indian Hill Dr
Attachments: Designers MD 2016 Mid-Western Region_Updated 2024.pdf

Amir,
Based on the review of the property information and site assessments by the Health Department and the Maryland Department of the Environment (MDE), it is recommended the owner seek the services of a qualified and experienced private on-site systems soils evaluator/designer who will visit the site, evaluate potential areas with a proposed stakeout and submit an official proposal for our joint consideration.

Since the proposed available area appears limited with slow permeability, Ksat testing with permeameters or additional infiltration tests may be required to be performed by the designer.

Should the consultant have any questions, please have them get in touch with me or MDE's regional consultant, Steven Krieg.

Attached is a list of qualified designers who you may reach out to for help. IF by any chance you have someone else in mind other than the ones on this list, please let me know so I can reach out to them first. Let me know if you have any questions regarding this next step.

Thanks,

Kevin M. Wolf, LEHS, REHS/RS
Groundwater Mgmt. Sec. Supervisor
Well & Septic Program
Howard County Health Department
8930 Stanford Blvd.
Columbia, MD 21045
410-313-2645 (Office)
410-313-2648 (Fax)
www.hchealth.org
kwolf@howardcountymd.gov

HOWARD COUNTY HEALTH DEPARTMENT

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CONFIDENTIALITY NOTICE

This message and the accompanying documents are intended only for the use of the individual or entity to which they are addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this email is not the intended recipient, you are hereby notified that you are strictly prohibited from reading, disseminating, distributing, or copying this communication. If you have received this email in error, please notify the sender immediately and destroy the original transmission.

From: Amir Forghani <amir@getamir.com>
Sent: Tuesday, April 23, 2024 3:45 PM
To: Wolf, Kevin <KWolf@howardcountymd.gov>
Cc: Wendy Min <minw012@gmail.com>
Subject: Re: MDE Evaluation for 12561 Indian Hill Dr

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

Hi Kevin,

Thanks for the email. I was under the impression we were meeting tomorrow. What was the tenantative solution; Sand mount, drip?

Sent from my Verizon, Samsung Galaxy smartphone

From: Wolf, Kevin <KWolf@howardcountymd.gov>
Sent: Tuesday, April 23, 2024 3:41:30 PM
To: Amir Forghani <amir@getamir.com>
Cc: Wendy Min <minw012@gmail.com>
Subject: Re: MDE Evaluation for 12561 Indian Hill Dr

Amir,

I will be following up on an email with you shortly. A tentative evaluation has been made and a recommendation is currently under review by the Maryland Department of the Environment.

Kevin

From: Amir Forghani <amir@getamir.com>
Sent: Tuesday, April 23, 2024 12:56:44 PM
To: Wolf, Kevin <KWolf@howardcountymd.gov>
Cc: Wendy Min <minw012@gmail.com>
Subject: Re: MDE Evaluation for 12561 Indian Hill Dr

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

Hi Kevin,

I hope you are well. Any updates on tomorrow?

Sent from my Verizon, Samsung Galaxy smartphone

From: Amir Forghani <amir@getamir.com>
Sent: Monday, April 22, 2024 3:06:25 PM
To: Wolf, Kevin <KWolf@howardcountymd.gov>
Cc: Wendy Min <minw012@gmail.com>
Subject: Re: MDE Evaluation for 12561 Indian Hill Dr

Good afternoon Kevin,

Thank you for your email. I hope you had a good weekend. I left my schedule for Wednesday the 24th open. Do you have any idea what time we will be meeting?

Sent from my Verizon, Samsung Galaxy smartphone

From: Wolf, Kevin <KWolf@howardcountymd.gov>
Sent: Friday, April 19, 2024 12:29:57 PM
To: Amir Forghani <amir@getamir.com>
Cc: Wendy Min <minw012@gmail.com>
Subject: RE: MDE Evaluation for 12561 Indian Hill Dr

Hello Amir,
I still have not solidified the exact day. It may change due to his workload. We are leaning to 4/24 for now. Ill update you with any changes.

Kevin

From: Amir Forghani <amir@getamir.com>
Sent: Thursday, April 18, 2024 11:57 AM
To: Wolf, Kevin <KWolf@howardcountymd.gov>
Cc: Wendy Min <minw012@gmail.com>
Subject: Re: MDE Evaluation for 12561 Indian Hill Dr

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

HI Kevin,

I hope you are well. Just wanted to follow up to see if you were able to confirm the inspection date on 4/22 or 4/24? If we could get out there sooner, that would be even better ☺

From: Wolf, Kevin <KWolf@howardcountymd.gov>
Sent: Wednesday, April 10, 2024 9:34 AM
To: Amir Forghani <amir@getamir.com>
Cc: Wendy Min <minw012@gmail.com>
Subject: RE: MDE Evaluation for 12561 Indian Hill Dr

Amir,
Nice meeting you too. I have contacted MDE regional consultant and confirmed either 4/22 or 4/24 as the dates of the site visit. Ill know something more concrete as we approach the date.

Thanks,

Kevin M. Wolf, LEHS, REHS/RS
Groundwater Mgmt. Sec. Supervisor
Well & Septic Program
Howard County Health Department
8930 Stanford Blvd.
Columbia, MD 21045
410-313-2645 (Office)
410-313-2648 (Fax)
www.hchealth.org
kwolf@howardcountymd.gov

HOWARD COUNTY HEALTH DEPARTMENT

twitter.com/HoCoHealth
facebook.com/HoCoHealth
instagram.com/hocohealth

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From: Amir Forghani <amir@getamir.com>
Sent: Tuesday, April 9, 2024 11:24 AM
To: Wolf, Kevin <KWolf@howardcountymd.gov>
Cc: Wendy Min <minw012@gmail.com>
Subject: MDE Evaluation for 12561 Indian Hill Dr

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

Good morning Kevin,

It was nice meeting you this past Thursday. The owner has decided to move forward with the MDE evaluation in order to determine what kind of septic system they'd recommend. Please confirm receipt of this email and when the soonest we can get him out. Thank you, we appreciate your effort helping resolve this matter.

FILE INQUIRY NOTES

10521 Indian Hill Rd.

DATE	RESULTS OF REVIEW FOR FILE
3/22/2024	Spoke w/ Sam's Creek. Cust update about property. He explained to me that the property is up for re-sale pending contract. He explained that Tighe did an inspection and said the trenches were probed and are holding water. Sam's Creek is scheduled to do the perc test on us but will dig system up prior to Health Dept. consult. (KW)
4/24/2024	Steve was not able to make the site date as planned. Was told by MDE to issue letter to owner for approved design. Will visit site on Friday if he has availability. (KW) ↳ Email sent to owner and owner agent (Andr. Forgland) (KW)
4/26/2024	Site meeting w/ Steve K. Evaluation covered in detail outlining potential areas for a drip system. Several augers were dug on the SE side of property near ex. well. See pics results for note. Confirmed that Ksat today will need to be done. Very wet, slow permability soils site severely limited. (KW)

Holding Tank Design & Component Specifications

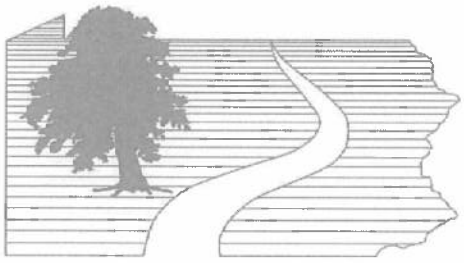
Prepared for

12561 Indian Hill Drive Tract

Situate in

Sykesville, 3rd Election District,

Howard County,
Maryland



Penn's Trail Environmental, LLC
327 E. Ridgeville Blvd. #141
Mount Airy, MD 21771
Phone: (301) 829-5022
www.pennstrail.com

August 26, 2024

PTE#6975

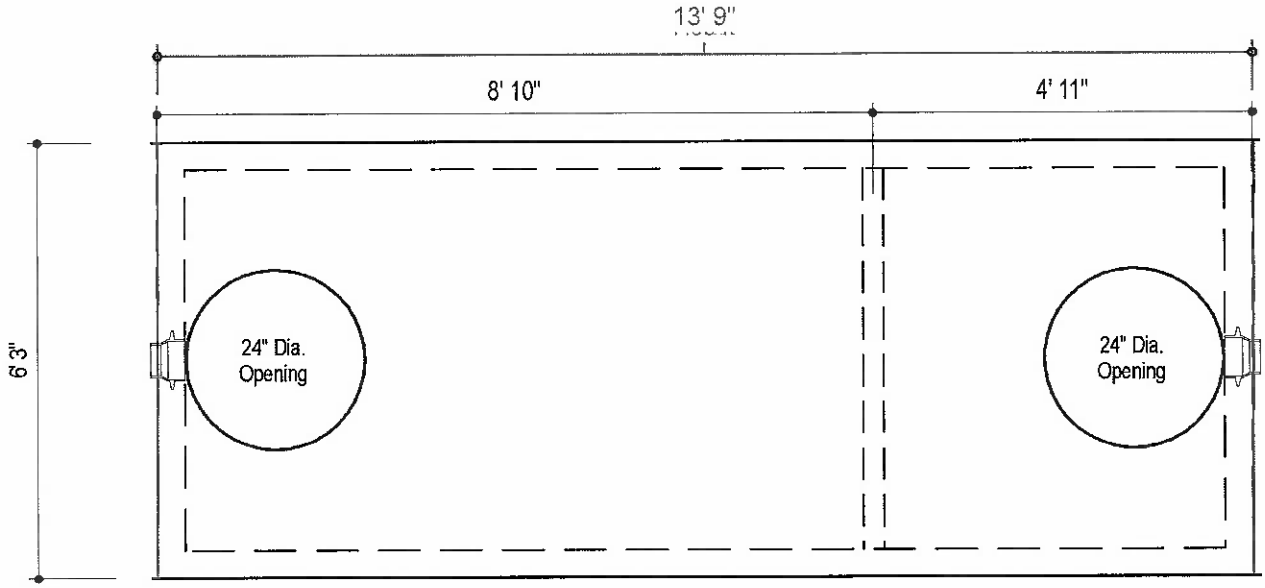
Appendices

System Component #1 – Holding Tanks

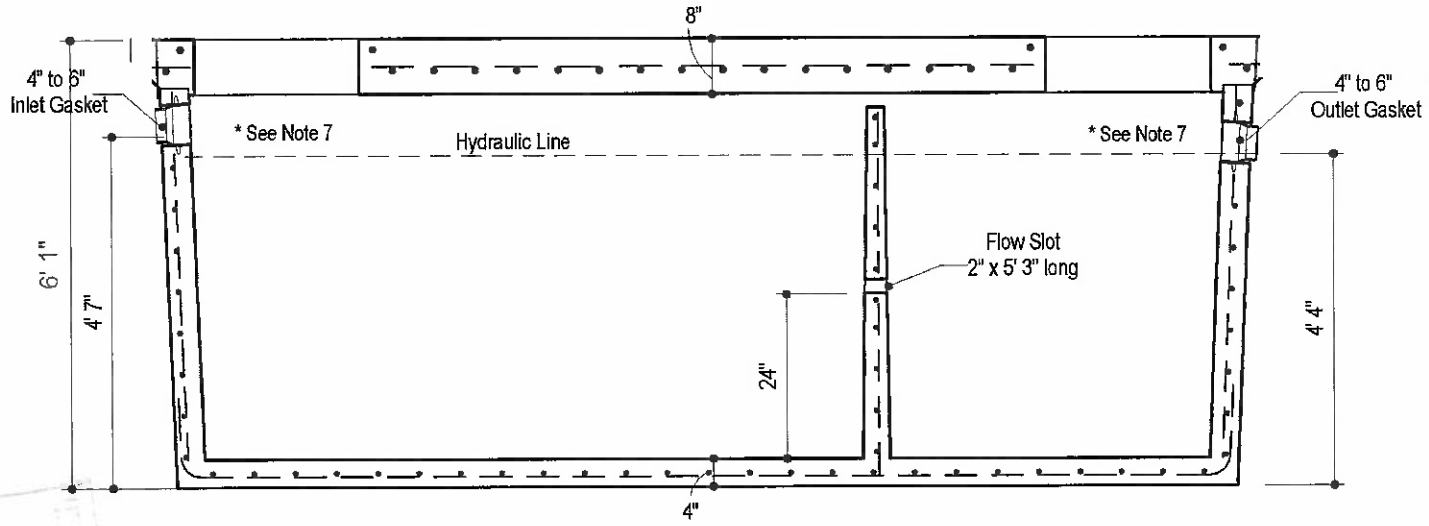
System Component #2 – Alarm & Floats

Maintenance Logs

System Component #1 – Holding Tank



PLAN VIEW w/Top Slab



SECTION VIEW

DESIGN DATA & GENERAL NOTES

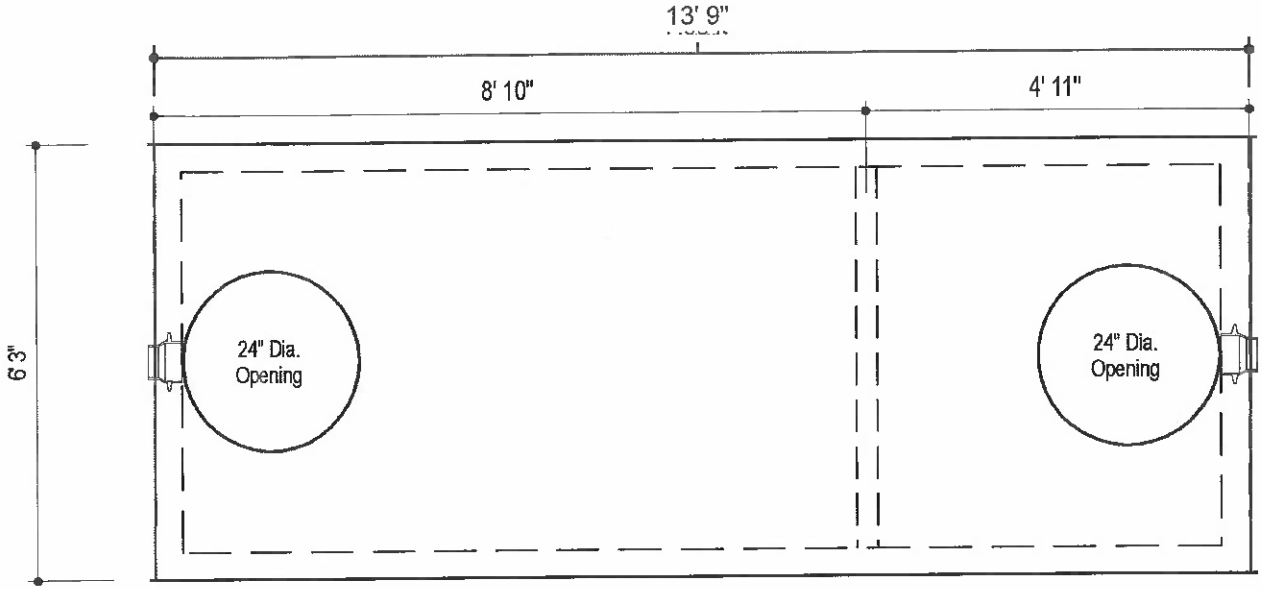
[1] Concrete strength f'c=5,000 p.s.i. @ 28 days. Density = 150 pcf.
[2] Cement - Portland Type I/II per ASTM C 150-92.
[3] Admixtures & plasticizers per ASTM C 260-86 & C 494-92.
[4] Reinforcing per ASTM A615, Grade 60, domestic. Min. 1-1/2" cover.
Walls, base, & top slab designed for HS-20 loading.
[5] Top slab sealed with butyl rope mastic.
[6] Maximum 3' of earth cover over top slab.
[7] Depending on use of tank, inlet & Outlet baffle may be required by code.

BACK RIVER PRE-CAST, LLC
P.O. Box 329
Glyndon, MD 21071
410-833-3394 office
410-833-4116 fax
www.backriverprecast.com

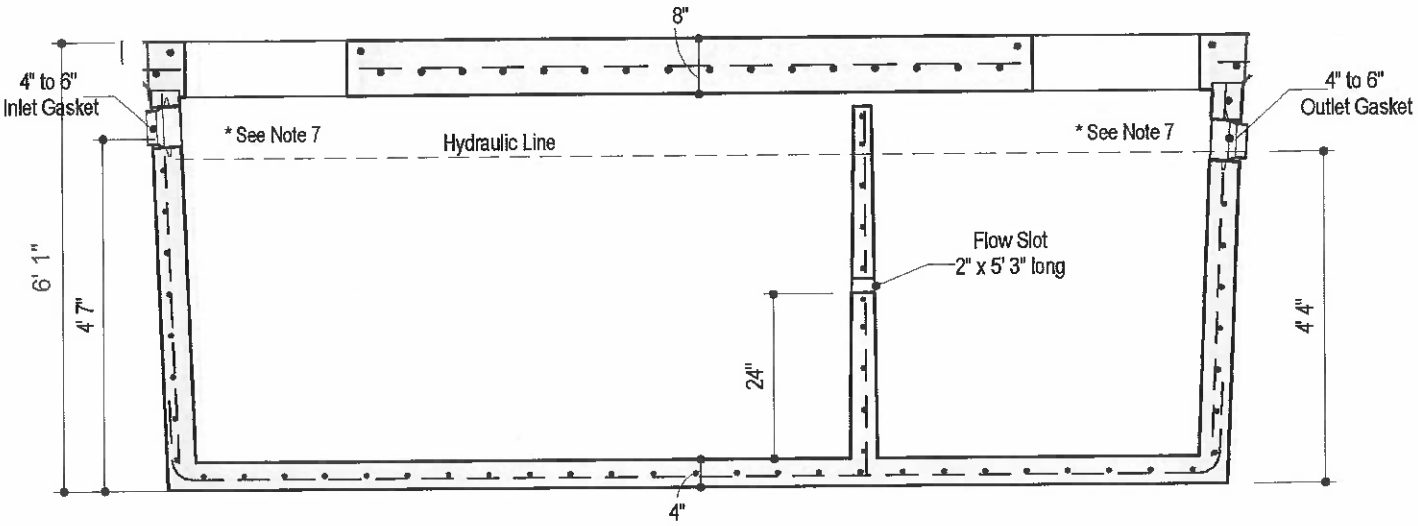
2000 GALLON TANK
Heavy Traffic Rated

Stock Item [Approx. Wt. - 22,950 lbs.]

Dwg. No. 2000TR	No Scale	Aug. 11, 2008



PLAN VIEW w/Top Slab



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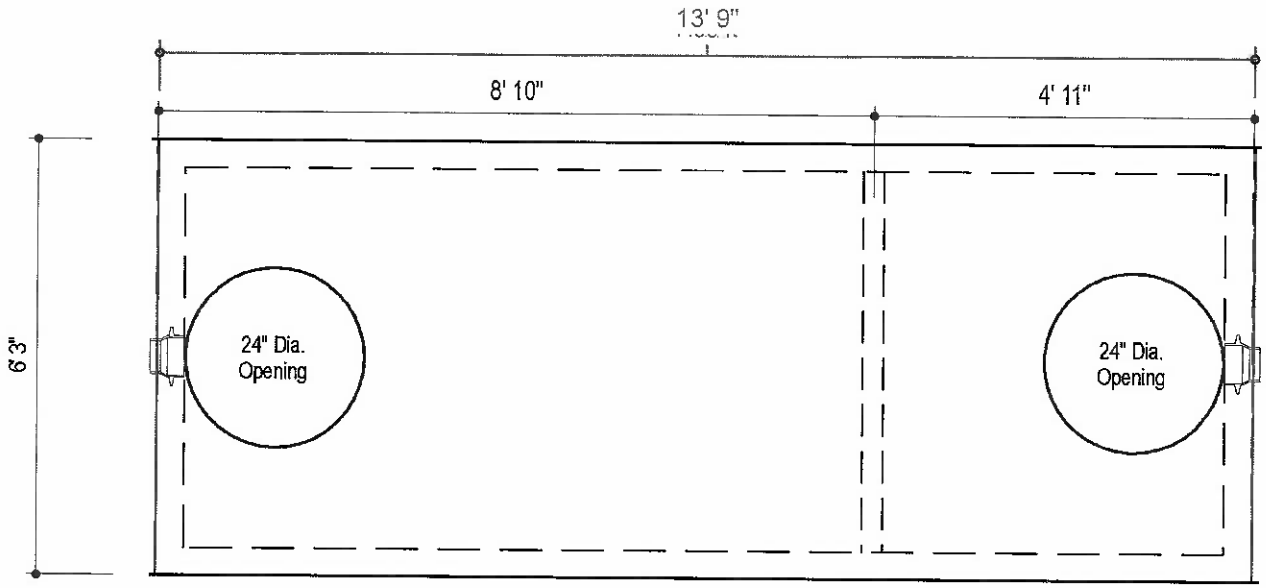
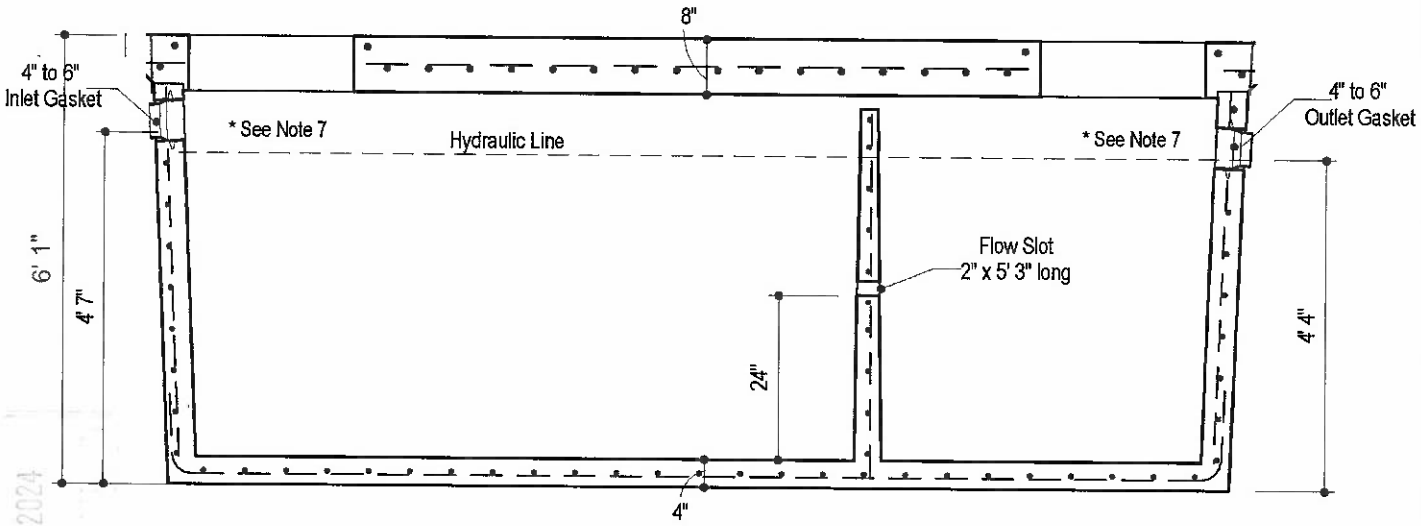


PLAN VIEW w/Top Slab



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Stock Item [Approx. Wt. - 22,950 lbs.]

Dwg. No. 2000TR	No Scale	Aug. 11, 2008

System Component #2 – Alarm & Floats

TANK ALERT® AB Alarm System

Easy-to-install liquid level alarm system with auto-reset and battery backup features for indoor use.

ORDERING INFORMATION

120 VAC Part #	Description	List Price	Shipping Weight
1011421	TA AB-01H (120 VAC w/15' SJE SignalMaster® High Level)	$103.28	2.73 lbs.
1011424	TA AB-01L (120 VAC w/15' SJE SignalMaster® Low Level)	$103.28	2.73 lbs.
1011422	TA AB-01H (120 VAC w/15' Sensor Float® High Level)	$106.73	2.81 lbs.
1011423	TA AB-01X (120 VAC no float)	$76.04	1.44 lbs.

H = High Level L = Low Level X = No Float

MASTER CARTON holds 16 boxed units.

OPTIONS

CONTROL SWITCH OPTIONS

The Tank Alert® AB alarm system comes standard with a 15ft **SJE SignalMaster®** control switch with mounting clamp. Other float switches are available. See control switch section of the catalog.

To determine the price of alarm with an alternate float, add the price of the part number with "no float" to the price of the float switch.

SIGNALING TYPE E UL LISTED 288X SP® LR54245

SPECIFICATIONS

VOLTAGE FOR 120 VAC MODEL:
Primary: 120 VAC, 50/60 Hz, 2.4 watts max. (alarm condition)
Secondary: 9 VDC

BATTERY BACKUP POWER: 9 VDC

ALARM ENCLOSURE: 6 x 4 x 2.25 inches (15.24 x 10.16 x 5.71 cm), NEMA 1 plastic

ALARM HORN: 87 decibles at 10 feet (3 meters)

AUXILIARY ALARM CONTACTS (OPTIONAL): 120 VAC, 5 amps max N/O, 3 amp max N/C (CSA certified only unit)

POWER CORD: 6 foot (1.8 meter)

FLOAT SWITCH CONNECTION TERMINAL: for float switch connection only (voltage across terminals is 8-9 VDC)

FLOAT SWITCH: SJE SignalMaster® control switch with mounting clamp

CABLE: 15 feet (4.57 meters), flexible 18 gauge, 2 conductor (UL) SJOW, water resistant (CPE)

FLOAT: 2.74 inch diameter x 4.83 inch long (7.0 cm x 12.3 cm), high impact, corrosion resistant polypropylene housing for use in sewage and water up to 140°F (60°C)

OTHER INFORMATION

Option	Description	Price
AUX	Auxiliary Alarm Contacts (CSA certified only unit, factory installed)	$17.25

Call or fax your order!
1-888-DIAL-SJE (1-888-342-5753) Fax 218-847-4617

SJE Rhombus®
www.sjerhombus.com
sje@sjerhombus.com

Cat Page PN 1012194M

SJE-Rhombus

TANK ALERT® AB Alarm Installation Instructions

This alarm system monitors liquid levels in lift pump chambers, sump pump basins, holding tanks, sewage, agricultural, and other water applications.

The Tank Alert® AB indoor alarm system can serve as a high or low level alarm depending on the float switch model used. The alarm horn sounds when a potentially threatening liquid level condition occurs. The horn can be turned off, but the alarm light remains on until the condition is remedied. Once the condition is cleared the alarm will automatically reset. A green "Power On" light indicates 120 VAC primary power to the alarm. Low battery chirp feature indicates when battery should be replaced.

TANK ALERT® AB ALARM

- **120 VAC Model Voltage -** (circuits not supervised) Primary: 120 VAC, 60 Hz, 2.4 watts maximum (alarm condition) Operating Voltage: 9 VDC ⧈ Double insulation
- NEMA 1 enclosure rated for indoor use.
- Automatic alarm reset.
- Red "alarm" light and green "power on" light, alarm "test" switch, and horn "silence" switch.
- 6 foot (1.8 meter) power cord.
- Alarm horn sounds at 87 decibels at 10 feet (3 meters).
- Can be used with any UL Listed switching mechanism rated to include 1 amp, 9 VDC load.
- Maximum line impedance for initiating device: 5 ohms.
- If primary power fails, the alarm system continues to work due to battery backup feature. Battery Backup Power - (circuit not supervised) 9 VDC
- Complete package includes standard SJE SignalMaster® control switch with 15 feet (4.57 meters) of cable (other lengths available) and mounting clamp.
- Switching mechanism operates on low voltage and is isolated from the power line to reduce the possibility of shock.
- Low battery chirp.
- External terminal block for easy float switch installation.
- Three-year limited warranty.

OPTIONS

When ordered with the alarm, this system is available with:

- alternate float switch models for high or low level warning.
- splice kit.

PREVENTATIVE MAINTENANCE

- Periodically inspect the product. Check that the cable has not become worn or that the housing has not been damaged so as to impair the protection of the product. Replace the product immediately if any damage is found or suspected.
- Periodically check to see that the float is free to move and operate the switch.
- Use only SJE-Rhombus® replacement parts.

SJE-RHOMBUS® THREE-YEAR LIMITED WARRANTY

SJE-RHOMBUS® warrants to the original consumer that this product shall be free of manufacturing defects for three years after the date of consumer purchase. During that time period and subject to the conditions set forth below, **SJE-RHOMBUS®** will repair or replace, for the original consumer, any component which proves to be defective due to defective materials or workmanship of **SJE-RHOMBUS®**.

THIS EXPRESS WARRANTY DOES NOT APPLY TO THE MOTOR START KIT COMPONENT. SJE-RHOMBUS® MAKES NO WARRANTIES OF ANY TYPE WITH RESPECT TO THE MOTOR START KIT.

ELECTRICAL WIRING AND SERVICING OF THIS PRODUCT MUST BE PERFORMED BY A LICENSED ELECTRICIAN.

THIS WARRANTY DOES NOT APPLY: (A) to damage due to lightning or conditions beyond the control of **SJE-RHOMBUS®**; **(B)** to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with printed instructions provided; **(C)** to failures resulting from abuse, misuse, accident, or negligence; **(D)** to units which are not installed in accordance with applicable local codes, ordinances, or accepted trade practices, and **(E)** to units repaired and/or modified without prior authorization from **SJE-RHOMBUS®**.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

TO OBTAIN WARRANTY SERVICE: The consumer shall assume all responsibility and expense for removal, reinstallation, and freight. Any item to be repaired or replaced under this warranty must be returned to **SJE-RHOMBUS®**, or such place as designated by **SJE-RHOMBUS®**.

ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS ARE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. SJE-RHOMBUS® SHALL NOT, IN ANY MANNER, BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES AS A RESULT OF A BREACH OF THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY.

⚠ WARNING **ELECTRICAL SHOCK HAZARD**

Disconnect power before installing or servicing this product. A qualified service person must install and service this product according to applicable electrical and plumbing codes.

⚠ WARNING **EXPLOSION OR FIRE HAZARD**

Do not use this product with flammable liquids. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70.

Failure to follow these precautions could result in serious injury or death. Replace product immediately if switch cable becomes damaged or severed. Keep these instructions with warranty after installation. This product must be installed in accordance with National Electric Code, ANSI/NFPA 70 so as to prevent moisture from entering or accumulating within boxes, conduit bodies, fittings, float housing, or cable.

For detailed specifications on this product, or for the complete line of SJE-Rhombus® panel, alarm, and switch products, visit our web site at www.sjerhombus.com.

INSTALLING THE ALARM & FLOAT SWITCH

1. Determine indoor mounting location for alarm.
2. Insert screw (supplied) at desired wall location.
   Note: Screw is to be located over wall stud or used with a wall anchor sized for a #8 x 1.25" self tapping screw.
3. Hang alarm using keyhole on back of enclosure. Install second screw in mounting flange located on bottom of alarm.
4. Make sure power to alarm is disconnected.
5. Place the float switch cord into the clamp as shown in Figure A.
6. Locate the clamp at the desired activation level and secure the clamp to the discharge pipe as shown in Figure A.
   Note: Do not install cord under hose clamp.
7. Tighten the hose clamp using a screwdriver. Over tightening may result in damage to the plastic clamp. Make sure the float cable is not allowed to touch the excess hose clamp band during operation.
   Note: All hose clamp components are made of 18-8 stainless steel material. See your SJE-Rhombus® supplier for replacements.
8. Bring cable leads back to alarm and wire according to Figure B.
   Note: When used with a pump application, connect alarm to a circuit separate from the pump circuit. This allows the alarm to operate if the pump circuit fails.
9. Open battery door and install 9 VDC alkaline battery (not included). **Battery must be installed for backup alarm to function. Note:** The green power on light does not come on when unit is on battery power.
10. Plug the alarm in to apply primary power. Verify that the green "power on" light illuminates.
11. Check installation by manually tipping the float. The horn will sound and the "alarm" light should come on.
12. Press "silence" button to silence the horn. The horn will silence while the red "alarm" light stays on.
13. Tip float back down and press "test" button. The "alarm" light and horn will activate.
14. Test unit once a week. **Replace battery every 12 months and after each alarm condition** to ensure proper operation. If battery is low, low battery chirp feature will cause the horn to chirp approximately once per minute. Replace battery when this happens.
15. Using the provided cable clasp, secure cord to outlet as shown in Figure C. Use existing receptacle faceplate screw and supplied washer.
16. Test unit once per week to insure proper operation.

Figure A

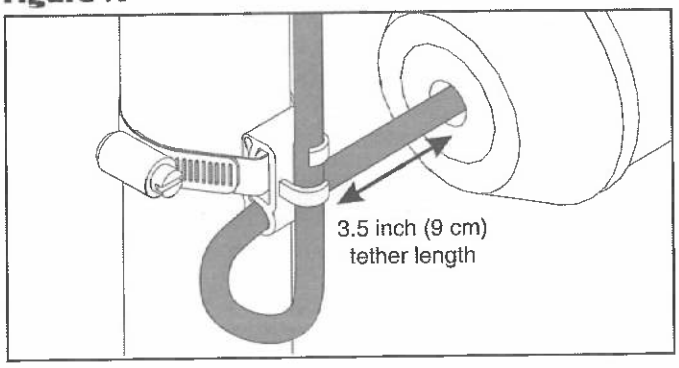


Figure B

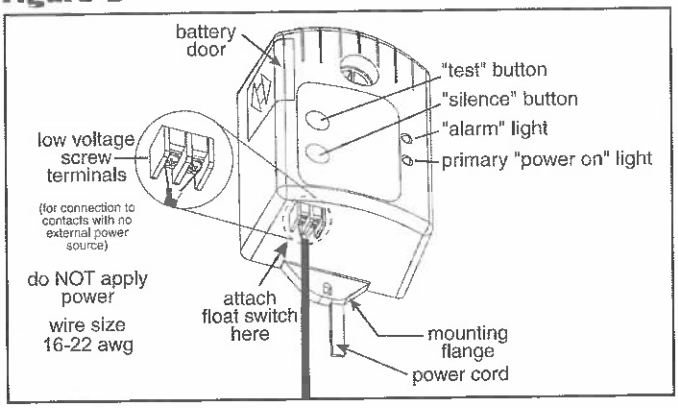
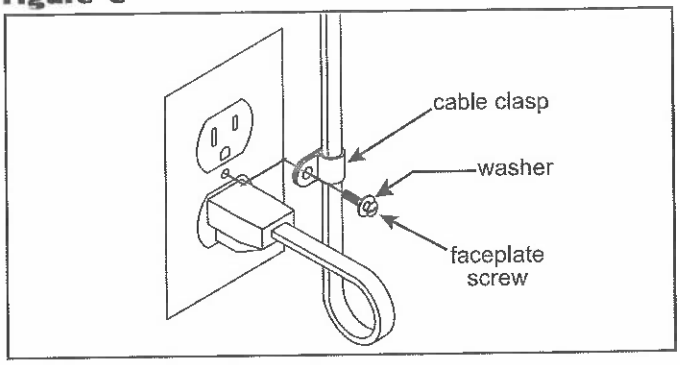


Figure C



SJE-Rhombus®

22650 County Highway 6 ■ P.O. Box 1708 ■ Detroit Lakes, Minnesota 56502 USA
1-888-DIAL-SJE (1-888-342-5753) ■ Phone: 218-847-1317 ■ Fax: 218-847-4617 ■ E-mail: sje@sjerhombus.com

Instl. Instr. PN 1012188G

SJE SIGNALMASTER® Control Switch

Mechanically-activated, narrow-angle float switch designed to activate pump control panels and alarms.

This narrow-angle sensing device is used to accurately monitor liquid levels in:

- potable water
- water
- sewage applications

The SJE SignalMaster® control switch is not sensitive to rotation.

Normally Open Model (high level)
The control switch turns on (closes) when the switch tips slightly **above** horizontal signaling a high level, and turns off (opens) when the switch drops slightly below horizontal.

Normally Closed Model (low level)
The control switch turns on (closes) when the switch tips slightly **below** horizontal signaling a low level, and turns off (opens) when the switch tips slightly above horizontal.

FEATURES

- Passed NSF Standard 61 protocol by an approved Water Quality Association laboratory.
- Mechanically-activated, snap action contacts.
- High impact, corrosion resistant, polypropylene float housing.
- Not sensitive to rotation.
- Control differential of 1.5 inches (4 cm) above or below horizontal.
- Yellow colored cap for easy identification of normally open control switch.
- White colored cap for easy identification of normally closed control switch.
- UL Listed for use in water and sewage.
- CSA Certified.
- Five-year limited warranty.

LR54245 LISTED 83N2

MEMBER Hydraulic Water Quality ASSOCIATION

OPTIONS

This switch is available:

- CE certified unit available upon request.
- for normally open (high level) applications or normally closed (low level) applications.
- in standard cable lengths of 10, 15, 20, or 30 feet and 3, 5, 6, or 10 meters (longer lengths available)
- with two mounting options that allow for flexibility in installation:

  Mounting Clamp: for applications where the switch can be attached to a discharge pipe or similar mounting device.

  Externally Weighted: for applications where the switch can be suspended from above.

SPECIFICATIONS

CABLE: flexible 18 gauge, 2 conductor (UL, CSA) SJOW, water-resistant (CPE)

FLOAT: 2.74 inch diameter x 4.83 inch long (7.0 x 12.3 cm) high impact, corrosion resistant, polypropylene housing for use in sewage and water up to 140°F (60°C)

MAXIMUM WATER DEPTH: 30 feet (9 meters), 13 PSI (90 kPa)

ELECTRICAL: 5 amp, 125/250 VAC, 50/60 Hz

NOTE: This switch is not recommended for controlling:

- electric loads less than 100 milliamps, 12 VAC
- non-arcing electric loads

SEE BACKSIDE FOR ORDERING INFORMATION.

SJE Rhombus®
PO Box 1708, Detroit Lakes, MN 56502
1-888-DIAL-SJE • 1-218-847-1317
1-218-847-4617 Fax
email: customer.service@sjerhombus.com
www.sjerhombus.com

SJE SIGNALMASTER® Control Switch

Mechanically-activated, narrow-angle float switch designed to activate pump control panels and alarms.

ORDERING INFORMATION

Normally Open		Normally Closed		List Price	Shipping Weight
Part#	Description	Part#	Description		
1006042	10SGMPCNO	1006046	10SGMPCNC	$34.39	1.04 lbs.
1006050	10SGMWENO	1006054	10SGMWENC	$42.14	2.73 lbs.
1006043	15SGMPCNO	1006047	15SGMPCNC	$37.63	1.37 lbs.
1006051	15SGMWENO	1006055	15SGMWENC	$45.39	3.05 lbs.
1006044	20SGMPCNO	1006048	20SGMPCNC	$40.87	1.69 lbs.
1006052	20SGMWENO	1006056	20SGMWENC	$48.65	3.30 lbs.
1006045	30SGMPCNO	1006049	30SGMPCNC	$47.93	2.34 lbs.
1006053	30SGMWENO	1006057	30SGMWENC	$55.66	4.03 lbs.

PC = Pipe Clamp WE = Weighted Externally NO = Normally Open NC = Normally Closed
NOTE: Descriptions are grouped by cable length measured in feet (10, 15, 20, 30).

OPTIONS

MOUNTING CLAMP
is standard - deduct optional

PACKAGING
Bagged - standard.
Boxed - optional
Bulk - optional

ADDITIONAL CABLE
Longer cable lengths available. Please call for details.

UL Listed for Water & Sewage

LISTED 83N2 LR54245

Passed NSF standard 61 protocol by an approved Water Quality Association laboratory.

MEMBER Water Quality ASSOCIATION

SPECIFICATIONS

CABLE: flexible 18 gauge, 2 conductor (UL) SJOW, water-resistant (CPE)

FLOAT: 2.74 inch diameter x 4.83 inch long (7 x 12.3 cm), high impact, corrosion resistant polypropylene for use in sewage and water up to 140°F (60°C)

MAXIMUM WATER DEPTH: 30 feet (9 meters), 13 psi

ELECTRICAL: 5 amp, 125/250 VAC, 50/60 Hz

This switch is not recommended for controlling:
- electric loads less than 100 milliamps, 12 VAC
- non-arcing electric loads

OTHER INFORMATION

NORMALLY OPEN (high level) OPERATION
The control switch closes (turns on) when the float tips slightly **above** horizontal signaling a high level, and opens (turns off) when the float drops slightly **below** horizontal in potable water, water or sewage applications.

NORMALLY CLOSED (low level) OPERATION
The control switch closes (turns on) when the float tips slightly **below** horizontal signaling a low level, and opens (turns off) when the float tips slightly **above** horizontal in potable water, water or sewage applications.

SJE-Rhombus
Control Switch Installation Instructions

SJE-Rhombus® narrow angle control switches accurately monitor liquid levels in sewage, and non-potable water applications. These switches are designed to activate pump control panels and alarms.

The SJE SignalMaster® and SJE SignalMaster® SPDT control switches passed NSF Standard 61 protocol by an approved Water Quality Association laboratory for use in potable water applications.

SJE SIGNALMASTER®

- Mechanically activated.
- Control differential of 1.5 inches above or below horizontal.
- Not sensitive to rotation.
- Mounting options: mounting clamp or cable weight.

SJE SIGNALMASTER® SPDT

- Mechanically activated.
- Control differential of 1.5 inches above or below horizontal.
- Not sensitive to rotation.
- Mounting options: mounting clamp or cable weight.

SENSOR FLOAT®

- Mercury activated.
- Suitable for use with an intrinsically safe circuit.**
- Not sensitive to rotation.
- Mounting options: mounting clamp, internal or cable weight.

**Contact SJE-Rhombus for specific intrinsically safe applications.

SENSOR FLOAT® MINI

- Mercury activated.
- Narrow angle float switch in a small float housing.
- Suitable for use with an intrinsically safe circuit.**
- Not sensitive to rotation.
- Mounting options: mounting clamp or cable weight.

**Contact SJE-Rhombus for specific intrinsically safe applications.

PREVENTATIVE MAINTENANCE

- Periodically inspect the product. Check that the cable has not become worn or that the housing has not been damaged so as to impair the protection of the product. Replace the product immediately if any damage is found or suspected.
- Periodically check to see that the float is free to move and operate the switch.
- Use only SJE-Rhombus® replacement parts.
- The Sensor Float® and Sensor Float® Mini control switches contain mercury and MUST be recycled or disposed of according to local, state, and federal codes.

SJE-RHOMBUS® FIVE-YEAR LIMITED WARRANTY

SJE-RHOMBUS® warrants to the original consumer that this product shall be free of manufacturing defects for five years after the date of consumer purchase. During that time period and subject to the conditions set forth below, **SJE-RHOMBUS®** will repair or replace, for the original consumer, any component which proves to be defective due to defective materials or workmanship of **SJE-RHOMBUS®**.

THIS EXPRESS WARRANTY DOES NOT APPLY TO THE MOTOR START KIT COMPONENT. SJE-RHOMBUS® MAKES NO WARRANTIES OF ANY TYPE WITH RESPECT TO THE MOTOR START KIT.

ELECTRICAL WIRING AND SERVICING OF THIS PRODUCT MUST BE PERFORMED BY A LICENSED ELECTRICIAN.

THIS WARRANTY DOES NOT APPLY: (A) to damage due to lightning or conditions beyond the control of **SJE-RHOMBUS®**; **(B)** to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with printed instructions provided; **(C)** to failures resulting from abuse, misuse, accident, or negligence; **(D)** to units which are not installed in accordance with applicable local codes, ordinances, or accepted trade practices, and **(E)** to units repaired and/or modified without prior authorization from **SJE-RHOMBUS®**.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

TO OBTAIN WARRANTY SERVICE: The consumer shall assume all responsibility and expense for removal, reinstallation, and freight. Any item to be repaired or replaced under this warranty must be returned to **SJE-RHOMBUS®**, or such place as designated by **SJE-RHOMBUS®**.

ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS ARE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. SJE-RHOMBUS® SHALL NOT, IN ANY MANNER, BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES AS A RESULT OF A BREACH OF THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY.

NOTICE!

Products returned must be cleaned, sanitized, or decontaminated as necessary prior to shipment to ensure that employees will not be exposed to health hazards in handling said material. All applicable laws and regulations shall apply.

⚠WARNING **ELECTRICAL SHOCK HAZARD**

Disconnect power before installing or servicing this product. A qualified service person must install and service this product according to applicable electrical and plumbing codes.

⚠WARNING **EXPLOSION OR FIRE HAZARD**

Do not use this product with flammable liquids. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70.

Failure to follow these precautions could result in serious injury or death. Replace product immediately if switch cable becomes damaged or severed. Keep these instructions with warranty after installation. This product must be installed in accordance with National Electric Code, ANSI/NFPA 70 so as to prevent moisture from entering or accumulating within boxes, conduit bodies, fittings, float housing, or cable.

For detailed specifications on this product, or for the complete line of SJE-Rhombus® panel, alarm, and switch products, visit our web-site at www.sjerhombus.com.

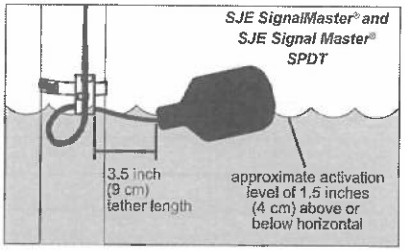
MOUNTING THE SWITCH

WARNING: Do not install switch in direct line of incoming liquid.

1. Place the cord into the clamp as shown in Figure C.
2. Locate clamp at desired activation level and secure the clamp to the discharge pipe as shown in Figures A and B. **Note:** Do not install cord under hose clamp.
3. Tighten the hose clamp using screwdriver. Over tightening may result in damage to the plastic clamp. Make sure the float cable is not allowed to touch the excess hose clamp band during operation.
4. Wire switch as shown in Figure D.
5. Check installation. Allow system to cycle to insure proper operation.

Note: All hose clamp components are made of 18-8 stainless steel material. See your SJE-Rhombus® supplier for replacements.

Figure A



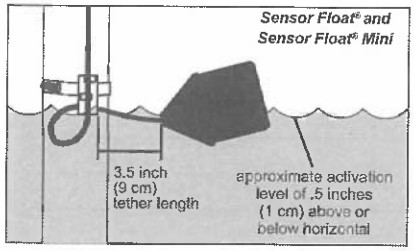
CABLE WEIGHT

1. Determine desired activation level.
2. Suspend switch and cable weight at desired activation level as shown in Figure E.
3. Wire switch as shown in Figure D.
4. Check installation. Allow system to cycle to insure proper operation.

To adjust cable weight tether length:

1. Release clip.
2. Adjust cable weight to desired position.
3. Lay switch cable in weight channel.
4. Align clip with weight channel and slide towards switch cable as shown in Figure E.
5. Snap clip snugly up to cable, moving clip to tightest possible position.

Figure B



INTERNAL WEIGHT

SENSOR FLOAT® CONTROL SWITCH ONLY

1. Determine desired activation level as shown in Figures A & B.
2. Suspend switch 7 inches below desired activation level as shown in Figure F. Switch remains partially submerged during the "on" tipping action. Switch can be totally submerged and still continue to operate properly.
3. Wire switch as shown in Figure D.
4. Check installation. Allow system to cycle to insure proper operation.

Figure C

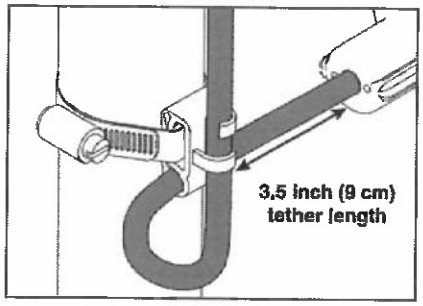


Figure E

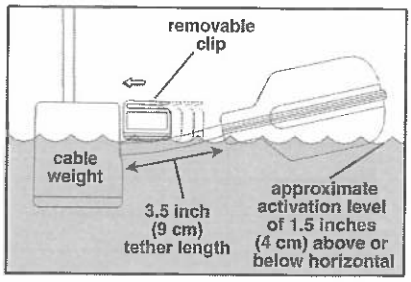


Figure F

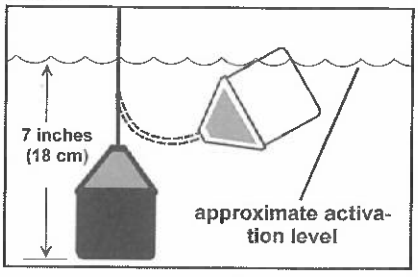
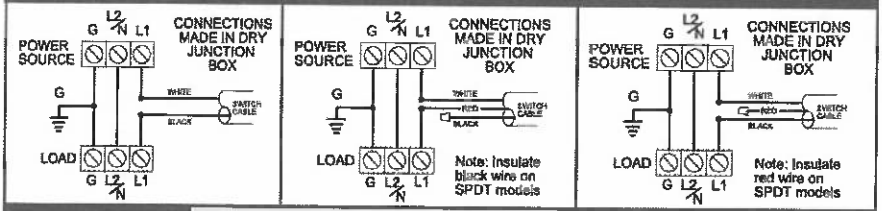


Figure D

Normally Open and Normally Closed — **SJE SignalMaster® SPDT Only** — **Normally Closed** — **Normally Open**



⚠WARNING

In 230 VAC installations, one side of the line going to the load is always **HOT**. This condition exists if the switch is on or off. Install double pole disconnect on all 230 VAC circuits.

On SPDT Models, insulate unused red or black wires with wire nut. Wire can become electrically hot

Ensure cable connections are performed in a **dry** junction box or other watertight seal that seals both conductors and cable jacket. Failure to do so could result in electrical shock hazard and/or water traveling down cable and entering the switch. Failure to guard against this may affect switch performance.

SJE Rhombus

22650 County Highway 6 ■ P.O. Box 1708 ■ Detroit Lakes, Minnesota 56502 USA

1-888-DIAL-SJE (1-888-342-5753) ■ Phone: 218-847-1317 ■ Fax: 218-847-4617 ■ E-mail: customer.service@sjerhombus.com

Instl. Instr. PN 1011974L

Maintenance Log

Date	*Service Provider*	*Service (action)*	*Comment*

Maintenance Log

Date	Service Provider	Service (action)	Comment

BACK RIVER PRE-CAST, LLC
PO BOX 329
GLYNDON, MD 21071
410-833-3394

LEAK TESTING CERTIFICATION

Leak testing performed in accordance with ASTM C 1227.9.2.1 – watertight integrity testing utilizing vacuum.

Date: November 15, 2024

Address: 12561 Indian Hill Dr., Sykesville, MD 21784

Tank #1: furthest from the road

Size: 2000 gallons

Test start time: 8:39 am Test finish time: 8:44 am

Gauge # 1: 5.4 hg Gauge # 2: 6.0 hg

Tank #2: in the middle from the road

Size: 2000 gallons

Test start time: 9:01 am Test finish time: 9:06 am

Gauge # 1: 5.2 hg Gauge # 2: 5.8 hg

Tank #3: closest to the road

Size: 2000 gallons

Evaluate start time: 9:24 am Test finish time: 9:29 am

Gauge # 1: 5.6 hg Gauge # 2: 6.2 hg

Tank manufacture: Back River Pre-Cast, Reisterstown, MD

Installer: Sams Creek

MDE representative present onsite: None

I certify that the above holding tanks passed vacuum testing in accordance with ASTM C 1227

Matthew Geckle

Vice-President