

**TRIANGLE
RADIANT BARRIER**555 Fayetteville St #201
Raleigh, NC 27601
Phone: (919) 986-8808
www.TriangleRadiantBarrier.com**Crawlspace Improvement Contract & Invoice**

Customer:	
Name:	Susana Ximil
Street Address:	5931 Cokesbury Road
City, State, Zip:	Fuquay-Varina, NC 27526
Telephone:	919-586-1230
Email Address:	sximil90@gmail.com

Service:	
Date of Contract:	29 Sep 2021
Document Version:	v20210702
Service Address:	Same
Service City, State:	Same
Contract #:	BP2108063RF

Phase 1: Full Mold Remediation, Encapsulated Crawlspace with Environment Conditioning (Less Wall Insulation)

Code	Scope of Work, Special Instructions:	Units:	\$ / unit:	Price:
SPC	Temporarily remove HVAC ducts as needed to allow for maneuver, temporarily seal openings created, and re-install the ducts after crawlspace improvement is complete	1	\$1,150.00	\$1,150.00
1200	Temporary HEPA Air Scrubber Operation at access, High pressure fresh air fans at foundation vents	1	\$61.88	\$61.88
1100	Remove and haul-away existing fiberglass insulation	800	\$0.50	\$400.00
1115	Air seal crawlspace ceiling/living space subfloor utility penetrations with foam spray	800	\$0.45	\$360.00
1102	Fog crawlspace with fungicide to eliminate mold spores, per manufacturer specifications; spray Wood-Cleaning spray to help remove mold staining on wood surfaces	800	\$1.25	\$1,000.00
1203	Remove and haul-away existing vapor barrier and debris from crawlspace ground	800	\$0.45	\$360.00
1111	Install 10-mil vapor barrier, liner staples, full roll-up on piers, 8-inch roll-up ramset and foam bead sealed to perimeter walls, tape on piers/seams/liner staples	800	\$1.55	\$1,240.00
1401	Install drain cover in vapor barrier above foundation drain, per building code	1	\$25.00	\$25.00
1124	Custom build and install entry door frame and door including hinges, handle, and paint; insulate door with CrawlBarrier and air-seal with weather stripping	1	\$400.00	\$400.00
1121	Install HVAC air inducer to moderate crawlspace temperature and relative humidity	1	\$300.00	\$300.00
PERM	Applicable permit fee(s): See "Special Notes, Payment Terms." (Discounts do not apply.)	TBD	TBD	TBD

Initial Contract Price:	\$5,296.88
Referral Discount:	(\$829.38)
Sales Tax:	\$0.00
Final Contract Price, Due Upon Phase 1 Work Completion:	\$4,467.50

Phase 2: Wall Insulation

Code	Scope of Work, Special Instructions:	Units:	\$ / unit:	Price:
1111	Install CrawlBarrier® to crawlspace exterior-facing walls, seams taped. Includes sealing foundation vents and utility penetrations, R-15 fiberglass at rim joists and band boards	480	\$3.30	\$1,584.00
1127	Install smartphone capable thermo-hygrometer to allow customer monitoring and tracking of crawlspace temperature and relative humidity (for wi-fi, add \$55)	1	\$35.00	\$35.00
ASP	One year's Annual Service Plan (two visits per year: general inspection, clean dehumidifier filter, clear condensate drain line, change thermo-hygrometer battery, seal vapor barrier punctures with 10-mil reinforced or better, leaf blower cleanout). 'No Mold' Guarantee with Terms & Conditions. With acceptance of first free year, customer agrees to provide credit/debit info to TRB within 30 days of project completion and agrees to subsequent renewal of at least one year of ASP at \$299.99 + tax.	1	Free	Free

Initial Contract Price:	\$1,619.00
Referral Discount:	(\$323.80)
Sales Tax:	\$0.00
Final Contract Price, Due at QA Inspection:	\$1,295.20

Customer: Susana Ximil
Printed Name9/30/2021 | 9:58 AM PDT
DateDocuSigned by:
Susana Ximil
Signature

Warranty:

Limited Lifetime Warranty (transferable with active Annual Service Plan) on CrawlBarrier. No Mold Guarantee for Encapsulated Crawlspace with active Annual Service Plan and Terms & Conditions met. One year warranty on labor.

Special Notes, Payment Terms:

Crawlspace has multiple loose wires. Prior to TRB conducting any work in the crawlspace, Customer must have a licensed electrical inspect and verify to TRB, in writing, that there are no electrical safety hazards in the crawlspace. If any electrical safety hazards are identified, Customer must separately contract with electrician to rectify the safety hazards prior to install.

Customer will need to have removed all personal items from the crawlspace prior to work commencement. Should Customer prefer to have TRB provide content movement, Customer will need to designate where and how to store the items temporarily out of the crawlspace and the install crew will do so and will return the items into the crawlspace after work completion at a rate of \$60 per labor hour, invoiced for the actual number of labor hours required to do so. If the Customer would like to have TRB haul-away any personal items, commensurate time involved in the hauling and any dump fees will be added to the final invoice. Building, Electrical, and/or Mechancial Permit, if applicable for the city or county where the work is taking place, will be obtained and the associated cost added to the final invoice and Customer agrees to pay this additional cost. If Customer opts to subsequently install upgrades after the completion and within six months of any contracted scope of work, additional charges for travel and post-install considerations will be charged, above and beyond the prices listed in this Estimate, as follows: \$375 for dehumidifier, \$150 for sanitization, \$200 for deodorization, \$275 for soil odor mitigation system, \$450 for sump pump without French drain, \$600 for sump pump and French drain. Any subsequent work after six months to be separately contracted. If the contracted work includes a dehumidifier and/or sump pump, the listed price above includes a licensed electrician installation of an associated 110V electrical outlet(s). The listed price assumes there will be sufficient amperage available in the electrical wires existing in the crawlspace to support the additional outlet. Should the electrician determine that the available amperage is insufficient and must install a new electrical wire directly from the electrical panel to support the outlet, an additional cost of \$175.00 per run will be added to the invoice.

Annual Service Plan (ASP) provided at no cost to Customer for first year when Customer agrees to auto-renewal for subsequent years. ASP may be cancelled at any time at which time no further renewals will take effect after the notification date. ASP are subject to county sales tax and any applicable taxes are due upon project completion.

All prices above reflect all currently available discounts and special offers. No payment is due until project completion. Total payment, due at completion, is payable via cash, check, debit card, or credit card. 3% transaction fee added to debit card, credit card, or any financing payments that process as a credit card.

Customer: Susana Ximil
Printed Name

9/30/2021 | 9:58 AM PDT
Date

DocuSigned by:
Susana Ximil
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Signature

TERMS AND CONDITIONS

- I. The Customer may cancel this contract within three (3) business days from the Contract Date. After such date (the "Binding Date"), this Contract becomes binding and the Customer may not modify this Contract without the express written consent of Triangle Radiant Barrier (TRB). Any modification proposed by the Customer after the Binding Date will be subject to additional charges as appropriate and as agreed to between TRB and the Customer(s). TRB may suspend work during the pendency of any requested modification. Should the Customer desire to cancel this Contract after the Binding Date, the Customer shall be liable for twenty percent (20%) of the full Contract price.
- II. Customer must provide a minimum 72 business hours' notice to delay/reschedule a project. If less than 72 business hours' notice is provided, a non-refundable, non-creditable fee of 10% must be paid before the project can be rescheduled.
- III. Customer must allow TRB the opportunity to complete any contracted work within 90 days of the signed contract unless delay beyond 90 days is approved in writing by TRB and/or unless TRB is unable to logistically perform the work within that period.
- III. Should any work performed by TRB be deemed unsatisfactory by the Customer(s), the Customer agrees that TRB will have the right to remedy, in any reasonable manner, the error, defect or omission having given rise the unsatisfactory condition. The Customer agrees to allow reasonable access to TRB and/or TRB's sub-contractors to effect said remedy. Failure to grant such reasonable access to the serviced property will constitute a waiver by the Customer's claim(s) of error, defect or omission.
- IV. Payments not received within fifteen (15) calendar days of the due date are deemed in default and shall bear a late penalty of 23.99% per annum or the maximum rate allowed by law, applied retroactively to the date of invoicing. If the Customer(s) fail(s) to pay TRB any amounts due under this Contract within thirty (30) days after the due date, the Customer(s) agree(s) to pay all late penalties as well as any costs related to collection and reasonable attorney's fees, should the same be referred to an agency or attorney for collection.
- V. TRB is not responsible for any scope of work not included in this contract, to include any work related to previously unknown conditions. Should such conditions be found that immediately impact the integrity and safety of TRB scope of work, TRB shall notify the Customer immediately for rectification by the Customer. Neither party has offered any inducement to agree except the inducements in this Contract. This Contract is not executed in reliance upon any statement or representation of any person or party or their representatives. This Contract contains the entire agreement between the parties and supersedes any prior agreements or understandings. The language in the Contract is the language chosen by the parties to express their mutual intent, and no rule of strict construction shall apply nor shall any provision be interpreted against any party regardless of which party drafted that provision.
- VI. The Customer(s) have read the accompanying "Crawlspace Option Descriptions" and understand the 'pros' and 'cons' of the options offered.
- VII. If the Customer is opting for spray/fogging fungicide, wood cleaning spray, sanitization, and/or deodorization, the Customer confirms that he/she has reviewed and understands the associated Material Safety Data Sheet(s) available at <https://www.trangleradiantbarrier.com/msds>. The Customer evaluated said information and will take appropriate self-precautions and ensure that appropriate precautions are taken by any/all other persons who may be impacted by the use of said product(s) as part of this Contract's Scope of Work.
- VIII. Customer acknowledges that staining caused by mold on wood may not be fully eliminated with the wood-cleaning spray and/or dry ice blasting and shall indemnify, release, and hold harmless TRB against all claims, including claims by third parties, relating in any way to any mold staining issues unless such claims arise out of TRB intentional or reckless torts.
- IX. If a single Customer is signing this form, that Customer represents that he/she is duly authorized and legally able to sign this Contract and that such signature shall be equally binding upon any other persons who may have an ownership/custodial right/interest to the property.
- X. The Customer(s) agree(s) to submit any legal claim against TRB to arbitration. This Contract is performable under North Carolina state law. If any provision of the Contract is determined to be unenforceable, such determination shall not affect the remaining terms of the Contract, which shall remain fully effective and enforceable. The Customer agrees that Wake County, North Carolina shall be the exclusive and mandatory venue for any disputes arising out of any aspect of this Contract or in any way related to the negotiation, formation, performance, non-performance, interpretation, or termination of any aspect of this Contract.
- XI. If the crawlspace is to be non-venting, closed, or fully sealed as part of the scope of work, the Customer is advised to refer to an HVAC and/or plumbing professional regarding proper ventilation requirements for gas-burning, crawlspace-installed utility system components. The Customer understands that TRB does not retain responsibility for post-installation ventilation requirements for gas-burning appliance safety and/or operation. If Customer suspects or is concerned about the prospect of Radon, please consult a Radon testing company. TRB does not provide Radon testing though TRB can install a Radon mitigation system, if desired by the Customer.
- XII. Dehumidifiers are warranted by their manufacturer and Customer shall submit any claims to said manufacturer. TRB does not provide any warranty on the dehumidifier. Should Customer desire labor to facilitate a claim, such labor would need to be separately contracted with TRB and accordingly paid by the Customer. TRB accumulatively charges \$150 trip charge, \$65 per labor hour (including transit time to distributor/store/warehouse to obtain needed materials and for any related trips to dump), and reimbursement costs for materials/permits. Services for any mechanical malfunctioning of a dehumidifier not related to installation labor shall be subject to the above charges, even if during the one-year labor warranty period.
- XIII. 'No Mold Guarantee' is contingent on conditions in crawlspace remaining below 65% relative humidity at all times, verified by full and complete (no substantive time gaps) recorded data on the Customer's thermo-hygrometer app and the Customer maintaining an active Annual Service Plan (ASP).
- XIV. In accepting the first year's ASP at no cost, the Customer gives TRB permission to charge Customer's charge card for annual auto-renewals. Customer agrees to provide charge card details telephonically to TRB and said details will be stored securely within the Customer's profile and will be processed only for the approved auto-renewals. ASP may be cancelled at any time at which time no further renewals will take effect after the notification date. Refunds not available once ASP charge has been made. Card will be charged annually upon expiration of Customer's ASP at the amount of \$299.00. TRB will notify the Customer at the email address provided above at least one (1) week prior to charging the card listed above. To cancel the ASP and the recurring charge, the Customer must notify TRB via email at least three (3) business days prior to the designated renewal date.
- XV. Full conditions of TRB's Warranty and 'No Mold Guarantee' are included in the Warranty Certificate.

Customer: Susana Ximil
Printed Name

9/30/2021 | 9:58 AM PDT
Date

DocuSigned by:
Susana Ximil
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Signature

Description of Available Options and Upgrades for Crawlspace Improvement

Please initial the pages below to acknowledge the Options and Upgrades offered.

Spray / Fogging Fungicide Mold Remediation and Wood-Cleaning Spray

Scope of work: Fogger/spray application of mold-remediating fungicide. Spray application of wood cleaner to visible mold stains on crawlspace joists and subflooring.

Pros: Effective at killing light to medium mold. Wood-cleaning spray helps to alleviate light to medium mold staining / visible accumulation on wood surfaces.

Cons: Introduces chemicals into the crawlspace which may be of concern to some homeowners (please read the accompanying Material Safety Data Sheet to determine if self-precautions are prudent). May not be fully effective against heavy mold. While there is no manufacturer-specified requirement to vacate the home during application of wood-cleaning spray, wood-cleaning spray has a strong smell similar to bleach due to its sodium chloride content which may be an annoyance to some home occupants if present during or within a couple hours of application. Customer with sensitivities in this regard may want to have a 'back-up plan' to vacate the home during application, in case the smell is deemed as overly annoying. Wood-cleaning spray is often not effective against heavy mold staining / visible accumulation, especially on porous surfaces such as OSB plywood which is often used as subflooring and pony wall sheathing. Dry Ice Blasting provides better removal of mold staining / visible accumulation from wood surfaces.

Dry Ice Blasting: Chemical-Free Full Crawlspace Mold Remediation and Stain Removal



Scope of work: Temporary use of HEPA air scrubber (negative pressure) and high-pressure fans at the foundation vents (positive pressure) to ensure high-pressure ventilation during the blasting process. Dry Ice Blasting at -115° F instantly freezes and kills mold spores and simultaneously helps remove mold staining and accumulated growth on wood surfaces (see our website for more information and a demonstration video).

Pros: Most effective means of remediating medium to heavy mold and removing medium to heavy mold staining / visible accumulation on wood surfaces, especially on porous surfaces such as OSB plywood often used for subflooring and pony wall sheathing. Chemical-free and residue-free.

Cons: Higher cost than chemical cleaning processes.

Sanitization

Scope of work: Manual cleaning of all crawlspace utility surfaces (HVAC air handler/distribution boxes/ducts, plumbing pipes, electrical wires/plates, etc) with a hospital-grade disinfectant / sanitizer / virucide.

Pros: Highly effective against sickness and disease-causing mold, bacteria, germs, fungi, and viruses. Results in visibly clean utility surfaces.

Cons: Cost related to this optional service. Introduction of chemicals into the crawlspace, which may concern some homeowners.

Crawlspace Deodorization / Odor Remediation

Scope of work: Spray application of a non-caustic blend of natural enzymes and non-pathogenic bacteria that encapsulate and neutralize decaying organic matter in the soil, which is a primary source of bad odors in crawlspaces.

Pros: Effective against odors existing in the crawlspace, some of which can become specifically more pronounced upon crawlspace sealing / encapsulation without deodorization. Deodorizing a crawlspace as part of the encapsulation process is substantially less in cost than doing so after the encapsulation process has been completed.

Cons: Cost related to this optional service. Introduction of chemicals into the crawlspace, which may concern some homeowners.

Crawlspace Odor Mitigation with option for Radon Gas Mitigation

Scope of work: Install of perforated pipe under the ground vapor barrier attached to negative-pressure ventilation fan and solid PVC exhaust pipe vented out of the crawlspace.

Pros: In ~1% of sealed crawlspaces, odors may be exacerbated due to higher moisture in the soil (caused by the trapped ground air vapor) increasing organic matter decay. A mitigation system effectively displaces these odors away from the home. System may be adapted for radon gas mitigation. Installing a Mitigation System as part of the encapsulation process is substantially less in cost than doing so after the encapsulation process has been completed.

Cons: Cost related to this optional service. Additional energy consumption for fan operation.

Non-Sealed, Venting Crawlspace



Scope of work:

- R-19 fiberglass batt insulation in the crawlspace ceiling
- 6-mil (or better) polyethylene vapor barrier to crawlspace ground

Pros: Most affordable option to meet current building code.

Cons: Fiberglass provides the lowest insulation performance relative to other insulation options. Lower-mil vapor barrier (particularly if not reinforced) is more prone to tearing, puncturing, and deterioration and does not perform as well as thicker vapor barriers to reduce air moisture in the crawlspace. Open, non-sealed foundation vents allow relative humidity to accumulate in the crawlspace from the outside and rarely provide adequate ventilation airflow. This option offers no capability to moderate crawlspace relative humidity which makes the crawlspace highly susceptible to condensation which often will accumulate/puddle on the vapor barrier and lead to mold, mildew, corrosion, rust, wood rot, and reduced service life for utilities. For any crawlspace that has had mold issues, using this option for improvement will almost certainly see a return of mold again over time. Non-sealed crawlspaces allow the intrusion of insects, rodents and snakes. Poor quality air in the crawlspace can migrate into the living space through non-sealed subfloor penetrations (e.g. electrical, plumbing) and HVAC return duct leaks.

Closed Crawlspace with Environment Conditioning



Scope of work:

- R-19 fiberglass batt insulation in the crawlspace ceiling
- 6-mil (or better) polyethylene vapor barrier to crawlspace ground
- Air-seal crawlspace foundation vents, exterior wall penetrations
- Insulate and air-seal crawlspace entry hatch/door
- Install dehumidifier
- Install Bluetooth or wifi-capable thermo-hygrometer

Pros: Enables an ability to help moderate relative humidity in a crawlspace. Can help to hinder intrusion by insects, rodents, snakes. A thermo-hygrometer will allow the homeowner to monitor temperature and relative humidity in the crawlspace.

Cons: Lowest insulation performance relative to other insulation options. Lower-mil vapor barrier (particularly if not reinforced) is more prone to tearing, puncturing, and deterioration and does not perform as well as thicker vapor barriers to reduce air moisture in the crawlspace. Does not seal the masonry perimeter foundation walls which are porous, resulting in higher levels of relative humidity for the dehumidifier to have to overcome, as compared to Encapsulated / Sealed crawlspaces and may not result in the ability to *effectively* or *efficiently* moderate relative humidity below 65%, the level which may be conducive to condensation, mold, mildew, corrosion, rust, wood rot, and reduced service life for utilities. If the end result does not *effectively* or *efficiently* moderate relative humidity, additional work (at additional expense) may be required. Poor quality air in the crawlspace can migrate into the living space through non-sealed subfloor penetrations (e.g. electrical, plumbing) and HVAC return duct leaks. Any gas-burning appliances in the crawlspace will require adequate HVAC intake and outtake ventilation.

Encapsulated / Sealed Crawlspace with CrawlBarrier® and Environment Conditioning



Scope of work:

- Air-seal crawlspace foundation vents, exterior wall penetrations
- 10-mil (or better) polyethylene vapor barrier to crawlspace ground
- Insulate and air-seal crawlspace entry hatch/door
- Install CrawlBarrier® to crawlspace foundation walls
- Install HVAC air inducer and/or dehumidifier
- Install wireless, Bluetooth, or WiFi-capable thermo-hygrometer

Pros: Most affordable fully encapsulated / sealed crawlspace option. CrawlBarrier®. Greatly improved indoor air quality. In conjunction with a quality ground vapor barrier and environmental conditioning (HVAC air inducer and/or dehumidifier), will help to moderate relative humidity in the crawlspace. Unlike spray foam, installation does not require occupants to vacate the home. Can help to hinder intrusion by insects, rodents, snakes.

Cons: A thermo-hygrometer will allow monitoring of the temperature and relative humidity in the crawlspace. Unlike the rigid foam board (see below), spray foam does not have an anti-termite additive. Any gas-burning appliances in the crawlspace will require adequate HVAC intake and outtake ventilation.

Encapsulated / Sealed Crawlspace with Spray Foam and Environment Conditioning



Scope of work:

- Remove existing fiberglass insulation from the crawlspace
- Air-seal crawlspace foundation vents, exterior wall penetrations
- 10-mil (or better) polyethylene vapor barrier to crawlspace ground
- Insulate and air-seal crawlspace entry hatch/door
- 2" Closed Cell Spray Foam to crawlspace perimeter walls
- Install wireless, Bluetooth, or WiFi-capable thermo-hygrometer
- Install Bluetooth or wifi-capable thermo-hygrometer

Pros: Improved indoor air quality. In conjunction with a quality ground vapor barrier and environmental conditioning (HVAC air inducer and/or dehumidifier), will help to moderate relative humidity in the crawlspace. A thermo-hygrometer will allow the homeowner to monitor crawlspace temperature, humidity. Can help to hinder intrusion by insects, rodents, snakes.

Cons: Higher price. Residents must vacate the premises during installation, due to the chemical processes taking place. Introducing chemicals into a crawlspace may be of concern to some owners. The spray foam manufacturer recommends remaining out of the home for 24 hours after completion of spraying the foam. Spray foam does not expand or cure uniformly, which can give a 'cave-like' appearance. Unlike the rigid foam board (see below), spray foam does not have an anti-termite additive. Any gas-burning appliances in the crawlspace will require adequate HVAC intake and outtake ventilation.

Encapsulated / Sealed Crawlspace with Bora-Foam® Rigid Foam Board and Environment Conditioning



Scope of work:

- Remove existing fiberglass insulation from the crawlspace
- Air-seal crawlspace foundation vents, exterior wall penetrations
- 10-mil (or better) polyethylene vapor barrier to crawlspace ground
- Insulate and air-seal crawlspace entry hatch/door
- Bora-Foam® installed to crawlspace perimeter walls
- Install HVAC air inducer and/or dehumidifier
- Install wireless, Bluetooth, or WiFi-capable thermo-hygrometer

Pros: Optimal indoor air quality improvement. All of the 'pros' from the "Encapsulated / Sealed Crawlspace with Spray Foam" in addition to a cleaner finished look. Pre-treated with Borate (an anti-termite additive). Unlike spray foam, installation does not require occupants to vacate the home.

Cons: Highest price, relative to the other options. Any gas-burning appliances in the crawlspace will require adequate HVAC intake and outtake ventilation

Sealed Rim Joists

Scope of work: Insulate and air seal the crawlspace rim joists with either CrawlBarrier® (edges sealed with foam spray), 2" closed cell spray foam, or Bora-Foam® (edges sealed with foam spray)

Pros: Provides better insulation and air sealing benefit than fiberglass insulation.

Cons: Negates access to the rim joists for termite inspection (not required by Code but desired by some pest control companies). Cost related to this optional service.

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Initials

Environmental Conditioning: HVAC Air Inducer vs. Dehumidifier



An Air Inducer disburse ~50 cubic feet per minute of conditioned air to help moderate crawlspace temperature and relative humidity. One inducer needed per 1,500 sq ft of crawlspace.

Pros: Significantly lower cost than a dehumidifier. Moderates both relative humidity and temperature. Moderating the temperature will help living space floors feel less cold in winter and will prevent frozen water pipes.

Cons: Can only be used in lieu of a dehumidifier in crawlspaces encapsulated with either spray foam or rigid foam board. Air induction is subject to several variables which impact its effectiveness: size and capacity of the HVAC system, supply air available at distribution boxes where air induction can be installed, the amount of relative humidity challenging the crawlspace, homeowner usage of the HVAC system. Relies on active HVAC operation and can be ineffective, particularly when outside temperatures are moderate but relative humidity is high as can happen in autumn and spring. May not *effectively* or *efficiently* moderate relative humidity below the target 65% level. If the installed air induction proves insufficient, additional air induction and/or a dehumidifier may need to be installed, at additional cost. Consumes conditioned air for operation, incurring a commensurate heating/cooling cost.



A dehumidifier extracts air moisture to help moderate crawlspace relative humidity. Accumulated water is expelled out of the crawlspace via a drain line/pipe.

Pros: The most effective means to moderate crawlspace relative humidity. Can be adjusted to keep relative humidity under a specific and programed level. Works whenever relative humidity is high, regardless of temperature.

Cons: Higher installation cost than air induction. Does not moderate temperature in the crawlspace. Requires cleaning the air filter, approximately twice per year. Consumes electricity for operation, incurring a commensurate electrical cost.

Vapor Barrier Specifications

	<u>6-mil</u>	<u>10-mil</u>	<u>10-mil Reinforced</u>	<u>12-mil Reinforced</u>	<u>16-mil Reinforced</u>	<u>Description</u>
ASTM Class	C	C	A	A	A	A (best), B, C
Tensile Strength	25	32	133	100	163	lbs/sq inch
Puncture Resistance	2.54	3.31	34.92	43.55	55.85	lbs
Permeance	0.099	0.0181	0.0016	0.0016	0.0015	Perms

LED Lighting



Our optional LED String Lights can fully light your entire crawlspace. In combination with the white vapor barrier and white or reflective wall covering, crawlspaces become very bright, making it more comfortable for access and home maintenance. Each 50' LED String Light provides 7,500 lumens. Installation includes a licensed electrician installation of a 110V GFI outlet and a light on/off control at the crawlspace entry.

Annual Service Plan

Our Annual Service Plan (ASP) provides a No Mold Guarantee which will remediate, at no cost to the Customer, any mold that forms in the crawlspace while that crawlspace has ASP coverage. The ASP includes two visits per year by TRB to provide for all crawlspace improvement maintenance needs to include cleaning your dehumidifier filter and condensate drain line, changing thermo-hygrometer and smoke/carbon monoxide detector batteries, sealing any vapor barrier punctures (if any; applies to 10-mil reinforced or better), leaf blower cleanout, wipe down/clean any mud or other stains on the vapor barrier, and general performance inspection.

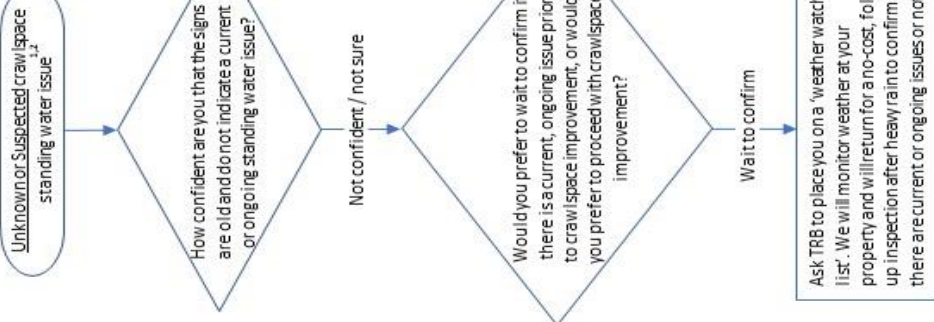
Material Safety Data Sheets

For any work items above which include a chemical product, the associated Material Safety Data Sheet (MSDS) may be viewed and/or downloaded at www.TriangleRadiantBarrier.com/msds.

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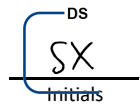
What to do about unknown or suspected standing water issues in a crawlspace



1. Physical crawlspace inspection for Estimate purposes cannot fully ascertain if a crawlspace is subject to standing water issues, particularly if there's not been rain prior to that inspection. It is possible that the inspection notes show no signs of standing water issues and the commensurate Estimate does not specifically recommend a sump pump and French drain, yet there still be standing water issues that only become apparent after the crawlspace is closed or sealed / encapsulated. Please note that closing or sealing / encapsulating a crawlspace does not make it water proof or guarantee against potential future standing water. In those cases where standing water is subsequently found in a crawlspace, please refer to TRB's "How to Resolve Known Standing Water Issues in a Crawlspace" to learn about needed actions / work. Any needed actions / work would need to be separately Contracted at separate cost.

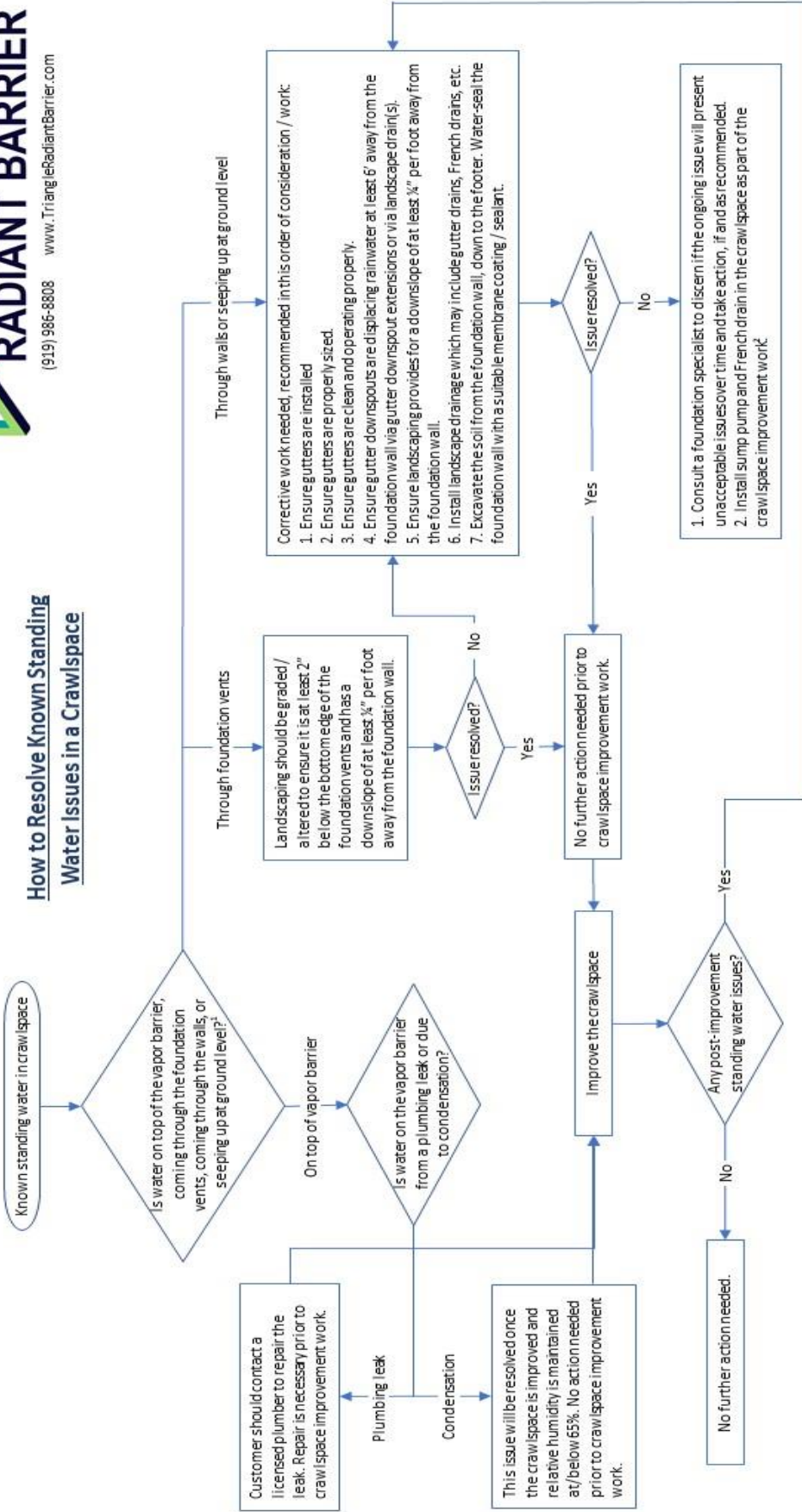
2. Streaking stains under foundation vents indicate water intrusion through the vents. Dark staining on the surface of the walls and/or white efflorescence crystallization (appears as dried white power/crystals on masonry) indicates water intrusion / seepage through the masonry walls. Dark staining along and just above ground level indicates water seeping up from the ground due to a saturated water table.

3. Water issues are best resolved at the source of the issue. In the case of crawlspace standing water, the source is almost invariably water collecting outside the crawlspace. A sump pump and French drain in the crawlspace only captures the water secondarily, after it has migrated through/under the foundation walls. Long-term water migration through/under masonry walls can degrade their structural integrity, particularly at the mortar joints. For this reason, a crawlspace sump pump and French drain should be the last resort when resolving standing water issues in a crawlspace. Remediation work outside the crawlspace to address the water at the source is optimal. Please refer to TRB's flowchart "How to Resolve Known Standing Water Issues".





How to Resolve Known Standing Water Issues in a Crawlspace



1. Streaking stains under foundation vents indicates water intrusion through the vents. Dark staining on the surface of the walls and/or white efflorescence crystallization (appears like dried white powder/crystals on masonry) indicates water intrusion through the masonry walls. Dark staining along and just above ground level indicates water is seeping up from the ground due to a saturated water table.

2. Water issues are best resolved at the source of the issue. In the case of crawlspace standing water, the source is almost invariably water collecting outside the crawlspace. A sump pump and French drain in the crawlspace only captures the water secondarily, after it has migrated through/under the foundation walls. Long-term water migration through/under masonry walls can degrade their structural integrity, particularly at the mortar joints. For this reason, a crawlspace sump pump and French drain should be the last resort when resolving standing water issues in a crawlspace. Remediation work outside the crawlspace to address the water at the source is optimal.