

## Tennessee Department of Environment and Conservation Division of Water Resources William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243 1-888-891-8332 (TDEC)

Phase II Small Municipal Separate Storm Sewer System (MS4) Annual Report

### 1. MS4 Information

	N	ame of MS4: City of Greenbrier		MS4 Permit Numb	er: TNS077810	ı	
	Co	ontact Person: Carla Caughey		Email Address: co	caughey@green	briertn.org	
	Te	elephone: (615) 643-4531		MS4 Program We	b Address: http:	//greenbriertn	.org
	М	ailing Address: 790 W. College St.					
	Ci	ty: Greenbrier	State: TN		ZIP code: 370	73	
		at is the current population of your at is the reporting period for this an		020 <u>census)</u> July1 <u>2020</u> to June 3	30 <u>2021</u>		
2.	<u>Dis</u>	charges to Waterbodies with Unava	ailable Parameters o	or Exceptional Tenn	essee Waters (S	Section 3.1)	
	A.	Does your MS4 discharge into wat to as impaired) for pathogens, nutrestormwater runoff from urbanized and/or according to the on-line statach a list.	rients, siltation or ot areas as listed on T	her parameters rela N's most current 30	ited to 3(d) list	⊠ Yes	□ No
	В.	Are there established and approve ws-tennessees-total-maximum-dai MS4 discharges in your jurisdiction	ily-load-tmdl-progra	m) with waste load		⊠ Yes	□ No
	C.	Does your MS4 discharge to any E http://environment-online.tn.gov:8080/attach a list.	-	,		☐ Yes	⊠ No
	D.	Are you implementing specific Besidischarges to waterbodies with unspecific practices: The City's Buffer permit. All new construction project between their project team and a cregulations put forth by the City and Handbook prior to a permit being is be inspected at least once a month and to identify any illicit discharges certification). If found out of compliance in the penalities deemed appropriate.	available parameter or Zone policy was a state required to having official to ebsure and their TDEC Erosic ssued for the project to ensure compliant (by employee with	rs or ETWs? If yes, amended to be considered a pre-construction that EPSC plans non Prevention & Sect. Active jobsites ar nce with the permit a TDEC EPSC Leve	describe the istent with the on meeting neet the diment Control e required to requirements	⊠ Yes	□No
3.		blic Education/Outreach and Involve Have you developed a Public Infor			4.2.2)	⊠ Yes	□No



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B.	Is your public education program targeting specific pollutants and sources, such as Hot Spots? If yes, describe the specific pollutants and/or sources targeted by your public education program: Every year the focus will be on construction site stormwater and eudcating developers and contractors on the importance of proper BMP installation and maintenance in addition our public eudcation targets many household pollutants such as animal waste, cleaning products, and vehicle fluids.	⊠ Yes	□ No
C.	Do you have a webpage dedicated to your stormwater program? If yes, provide a link/URL: <a href="http://greenbriertn.org">http://greenbriertn.org</a>	⊠ Yes	□ No
D.	Summarize how you advertise and publicize your public education, outreach, involvement opportunities: Stormwater educational information is provided online, on water bille, and is Stormwater pamphlets are availablefor the public at City Hall.		
E.	Summarize the public education, outreach, involvement and participation activities you con reporting period: The City maintains a webpage for easy access to stormwater information is also a member of TNSA who host monthly meetings which enable members of the storm come together and discuss relevant topics and current issues. The City hosted the First Aron March 19th 2021 with a very positive turnout giving away an estimated 150+ trees and "Grasscycling". The City distributed public information eudcation during four city wide ever and crayons. Please see attached informational material.	nal material. T nwater commi nnual Tree Giv 100 pamphlets	he City unity to vaway s about
F.	Summarize any specific successful outcome(s) (e.g., citizen involvement, pollutant reduction improvement, etc.) fully or partially attributable to your public education and participation preporting period: The City of Greenbrier held two city wide clean-up days this 20-21 permic collected and properly disposed of hazardous waste, chemicals, and trash that would have illegally dumped into streams or other water features. The City successfully collaborated waste from Western Kentucky University to implement effective analytical monitoring and be Creek, Unnamed Contributary (Dorris Rd.), Pole Bridge Branch Creek, and War Trace Creek of water). See attached of WKU's Bacteriological and Bioassessment reports.	rogram during t cycle where otherwise be rith Dr. Taylor ioassessment	this the city een and his of Carrs
Illic	it Discharge Detection and Elimination (Section 4.2.3)		
Α.	Have you developed and do you continue to update a storm sewer system map that shows the location of system outfalls where the municipal storm sewer system discharges into waters of the state or conveyances owned or operated by another MS4?	⊠ Yes	□ No
В.	If yes, does the map include inputs into the storm sewer collection system, such as the inlets, catch basins, drop structures or other defined contributing points to the sewershed of that outfall, and general direction of stormwater flow?	⊠Yes	□ No
C.	How many outfalls have you identified in your storm sewer system? #6		
Ο.	Do you have an ordinance, or other regulatory mechanism, that prohibits non-stormwater discharges into your storm sewer system?	⊠Yes	□ No

4.

	E.	Have you implemented a plan to detect, identify and eliminate non-stormwater discharges, including illegal disposal, throughout the storm sewer system? If yes, provide a summary: Inspections and screenings are performed by the Building and Codes Department by a certified TDEC Level 1 EPSC. Our IDDE plan includes procedures for identification of hot spots within the City, 29 hotspot inspections were performed during the 20-21 permit cycle along with dry weather screening of stormwater outfalls, an eudcation component for municipal employees (ilicit discharge training by OHM Advisiors June 2021) business owners/operators, and the general public. All of these componets together have aided in proper identification and elimination of illicit discharge.	⊠ Yes	□ No
	F.	How many illicit discharge related complaints were received this reporting period? #4		
	G.	How many illicit discharge investigations were performed this reporting period? #4		
	H.	Of those investigations performed, how many resulted in valid illicit discharges that were a eliminated? #4	addressed and	d/or
5.	Co	instruction Site Stormwater Runoff Pollutant Control (Section 4.2.4)		
	A.	Do you have an ordinance or other regulatory mechanism requiring:		
		Construction site operators to implement appropriate erosion prevention and sediment control BMPs consistent with those described in the TDEC EPSC Handbook?	⊠ Yes	□ No
		Construction site operators to control wastes such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste?	⊠ Yes	☐ No
		Design storm and special conditions for unavailable parameters waters or Exceptional Tennessee Waters consistent with those of the current Tennessee Construction General Permit (TNR100000)?	⊠ Yes	□ No
	В.	Do you have specific procedures for construction site plan (including erosion prevention and sediment BMPs) review and approval?	⊠ Yes	□ No
	C.	Do you have sanctions to enforce compliance?	⊠ Yes	□ No
	D.	Do you hold pre-construction meetings with operators of priority construction activities and inspect priority construction sites at least monthly?	⊠ Yes	□ No
	E.	How many construction sites disturbing at least one acre or greater were active in your jurperiod? #4	isdiction this r	eporting
	F.	How many active priority and non-priority construction sites were inspected this reporting p	period? #4	
	G.	How many construction related complaints were received this reporting period? 0		
6.	<u>Pe</u>	rmanent Stormwater Management at New Development and Redevelopment Projects (Sec	tion 4.2.5)	
	Α.	Do you have a regulatory mechanism (e.g. ordinance) requiring permanent stormwater pollutant removal for development and redevelopment projects? If no, have you submitted an Implementation Plan to the Division?	⊠ Yes ⊠ Yes	□ No
	В.	Do you have an ordinance or other regulatory mechanism requiring:	_	
		Site plan review and approval of new and re-development projects?	⊠ Yes	□ No

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		A process to ensure stormwater control measures (SCMs) are properly installed and maintained?	⊠ Yes	□No
		Permanent water quality riparian buffers? If yes, specify requirements: <u>The City has adopted the TN CGP requirements for buffers.</u>	⊠ Yes	□No
	C.	What is the threshold for development and redevelopment project plans plan review (e.g., disturbing greater than one acre, etc.)? Projects disturbing greater than 1/4 acre or less a larger development. Also, all activities proposing a borrow area are required to submit a	than 1/4 acre i	f part of
	D.	How many development and redevelopment project plans were reviewed for this reporting	period? <u>#5</u>	
	E.	How many development and redevelopment project plans were approved? #5		
	F.	How many permanent stormwater related complaints were received this reporting period?	<u>#4</u>	
	G.	How many enforcement actions were taken to address improper installation or maintenance	ce? <u>#4</u>	
	<b>H</b> .	Do you have a system to inventory and track the status of all public and private SCMs installed on development and redevelopment projects?	⊠ Yes	□ No
	I.	Does your program include an off-site stormwater mitigation or payment into public stormwater fund? If yes, specify.	☐ Yes	⊠ No
7.	Stor	mwater Management for Municipal Operations (Section 4.2.6)		
	A.	As applicable, have stormwater related operation and maintenance plans that include info maintenance activities, schedules and the proper disposal of waste from structural and no controls been developed and implemented at the following municipal operations:		
		Streets, roads, highways?	⊠ Yes	□No
		Municipal parking lots?	⊠ Yes	□No
		Maintenance and storage yards?	⊠ Yes	□ No
		Fleet or maintenance shops with outdoor storage areas?	⊠ Yes	□ No
		Salt and storage locations?	□Yes	⊠ No
		Snow disposal areas?	☐ Yes	⊠ No
		Waste disposal, storage, and transfer stations?	⊠ Yes	□No
	B.	Do you have a training program for employees responsible for municipal operations at facilities within the jurisdiction that handle, generate and/or store materials which constitute a potential pollutant of concern for MS4s?	⊠ Yes	□ No
		If yes, are new applicable employees trained within six months, and existing applicable employees trained and/or retrained within the permit term?	⊠ Yes	□No
8.	Revi	ewing and Updating Stormwater Management Programs (Section 4.4)		
	A.	Describe any revisions to your program implemented during this reporting period including	but not limited	to:

### Phase II Small Municipal Separate Storm Sewer System (MS4) Annual Report

Modifications or replacement of an ineffective activity/control measure. The City of Greenbrier has been more proavtive with Public informationand outreach, also annual illicit discharge training for employees and during our city wide clean-up day the city hosted 20 volunteers to pick up trash and litter from highway whereas 55 bags of trash and litter were collected.

Changes to the program as required by the division to satisfy permit requirements. <u>Public and employee eudcation was implimented as well as analytical monitering and bacteriological study of streams.</u>

Information (e.g. additional acreage, outfalls, BMPs) on newly annexed areas and any resulting updates to your program. <u>No areas have been annexed this reporting this permit cycle.</u>

В.	In preparation for this annual report, have you performed an overall assessment of your stormwater management program effectiveness? If yes, summarize the assessment results, and any modifications and improvements scheduled to be implemented in the		
	next reporting period. Fot the next permit cycle we will continue to focus our public	⊠ Yes	П№
	information eudcation on the following groups: general housekeeping activities, owners	<u></u>	
	of permanet BMP's, contractors, developers, long term quality impacts, auto repair		
	shops, and landscape companies. Our consulting engineers have developed a GIS		
	Storm Sewer map which can be found on our city website http://greenbriertn.org.		

### 9. Enforcement Response Plan (Section 4.5)

A.	Have you implemented an enforcement response plan that includes progressive		
	enforcement actions to address non-compliance, and allows the maximum penalties	⊠ Yes	☐ No
	specified in TCA 68-221-1106? If no, explain.		

B. As applicable, identify which of the following types of enforcement actions (or their equivalent) were used during this reporting period; indicate the number of actions, the minimum measure (e.g., construction, illicit discharge, permanent stormwater management), and note those for which you do not have authority:

<u>Action</u>	Construction	Permanent Stormwater	<u>Illicit</u> <u>Discharge</u>	In Your E	RP?
Verbal warnings	# <u>0</u>	# <u>0</u>	# <u>0</u>	⊠ Yes	□ No
Written notices	# <u>0</u>	# <u>0</u>	# <u>4</u>	⊠ Yes	□ No
Citations with administrative penalties	# <u>0</u>	# <u>O</u>	# <u>0</u>	⊠ Yes	□No
Stop work orders	# <u>O</u>	# <u>O</u>	# <u>0</u>	⊠ Yes	□ No
Withholding of plan approvals or other authorizations	# <u>0</u>	# <u>0</u>	# <u>0</u>	⊠ Yes	□No
Additional Measures	# <u>O</u>	# <u>0</u>	# <u>0</u>	Describe: N/A	
C. Do you track instance	es of non-complianc	e and related enforce	ement documentat	ion? 🛛 Yes	□ No

D. What were the most common types of non-compliance instances documented during this reporting period? Illicit discharge.

### 10. Monitoring, Recordkeeping and reporting (Section 5)

- A. Summarize any analytical monitoring activities (e.g., planning, collection, evaluation of results) performed during this reporting period. Analytical monitoring performed May 2021-July 2021
- B. Summarize any non-analytical monitoring activities (e.g., planning, collection, evaluation of results) performed during this reporting period. <u>Inspection site visits to active construction sites are performed on a routine basis</u> with a TDEC Level 1 certification.

### 11. Certification

This report must be signed by a ranking elected official or by a duly authorized representative of that person. See signatory requirements in sub-part 6.7.2 of the permit.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Lanny Adcock, Mayor

Printed Name and Title

Signature Signature

Annual reports must be submitted by September 30 of each calendar year (Section 5.4) to the appropriate Environmental Field Office (EFO), identified in the table below:

EFO	Street Address	City	Zip Code	Telephone
Chattanooga	1301 Riverfront Pkwy, Suite 206	Chattanooga	37402	(423) 634-5745
Columbia	1421 Hampshire Pike	Columbia	38401	(931) 380-3371
Cookeville	1221 South Willow Ave.	Cookeville	38506	(931) 520-6688
Jackson	1625 Hollywood Drive	Jackson	38305	(731) 512-1300
Johnson City	2305 Silverdale Road	Johnson City	37601	(423) 854-5400
Knoxville	3711 Middlebrook Pike	Knoxville	37921	(865) 594-6035
Memphis	8383 Wolf Lake Drive	Bartlett	38133	(901) 371-3000
Nashville	711 R S Gass Boulevard	Nashville	37216	(615) 687-7000

9/13/21



## • APPENDIX A: <u>DISCHARGES TO WATERBODIES</u> <u>WITH UNAVAILABLE PARAMETERS OR</u> <u>EXCEPTIONAL TENNESSEE WATERS</u>

**SUPPORTING MATERIALS** 



ITY SOURCE_NAME	Municipal (Urbanized righ Density Area) Municipal (Urbanized High Density Area)	Unrestricted Cattle Access	Grazing in Riparian or Shoreline Zones	Grazing in Riparian or Shoreline Zones	Grazing in Riparian of Shoreline Zones	Grazina in Riparian or Shoreline Zones	Grazing in Riparian or Shoreline Zones	Municipal (Urbanized High Density Area)	Municipal (Urbanized High Density Area)	Sanitary Sewer Overflows (Collection System Failures)	Site Clearance (Land Development or Redevelopment)	Site Clearance (Land Development or Redevelopment)	Non-irrigated Crop Production	Sanitary Sewer Overflows (Collection System Failures)	Grazing in Riparian or Shoreline Zones	Grazing in Riparian or Shoreline Zones	Non-irrigated Crop Production	Non-irrigated Crop Production	Non-inigated Crop Floduction	Non-imigated crop Production	Grazing in Riparian or Snoreline Zones	Grazing in Riparian of Shoreline Zones	Non-irrigated Crop Production	Dairies (Outside Milk Parlor Areas)	Grazing in Riparian or Shoreline Zones	Unrestricted Cattle Access	Grazing in Riparian or Shoreline Zones	Unrestricted Cattle Access	Grazing in Riparian of Shoreline Zones	Grazing in Riparian or Shoreline Zones	Upstream impoundments (e.g., PI-300 INC.) Structures)	Upstream Impoundments (e.g., PI-506 NRCS Structures)	Municipal (Urbanized riigh Density Area)	Municipal (Urbanized High Density Area)	Sanitary Sewer Overflows (Collection System Failures)	Municipal Point Source Discharges	Municipal Point Source Discharges	Municipal Point Source Discharges	Municipal Point Source Discharges	Sanitary Sewer Overflows (Collection System Failures)	Site Clearance (Land Development or Redevelopment)				
TMDL_PRIORITY		٦	_		۔ د		AN	_	7	T	_	_	_	AN									-			<b>.</b>		ŭ.	J	_ ;	ζ.	٠,		-	ΨN	-	_	_	NA	٦	٦	٦	NA	٦	
CAUSE_NAME	Sedimentation/Siltation Physical substrate habitat alterations	Alteration in stream-side or littoral vegetative covers	Alteration in stream-side or littoral vegetative covers	Sedimentation/Siltation	Sedimentation/Siltation	Nitrate/Nitrite (Nitrite + Nitrate as N)	Escherichia coli	Sedimentation/Siltation	Nitrate/Nitrite (Nitrite + Nitrate as N)	Nutrient/Eutrophication Biological Indicators	Other anthropogenic substrate alterations	Sedimentation/Siltation	Sedimentation/Siltation	Escherichia coli	Nitrates	Nitrate/Nitrite (Nitrite + Nitrate as N)	Nitrates	Nitrates	Nitrates	Nitrates	Alteration in stream-side or littoral vegetative covers	Physical substrate habitat alterations	Physical substrate habitat alterations	Escherichia coli	Sedimentation/Siltation	Sedimentation/Siltation	Alteration in stream-side or littoral vegetative covers	Alteration in stream-side or littoral vegetative covers	Alteration in stream-side or littoral vegetative covers	Sedimentation/Siltation	Low flow afterations	Temperature, water	Alteration in stream-side or littoral vegetative covers	Other authorogonic cuberrate alterations	Corbodyhia coli	Temperature water	Nitrate/Nitrite (Nitrite + Nitrate as N.)	Phosphorus (Total)	Escherichia coli	Escherichia coli	Phosphorus (Total)	Nitrate/Nitrite (Nitrite + Nitrate as N)	Escherichia coli	Sedimentation/Siltation	
WATER_SIZE	2.7	3.9	3.9	3.9	12.25	12.25	11	1.1	1.1	2.4	2.4	2.4	2.4	2.4	22.9	22.9	17.5	17.5	Z. 4	3.3	3.3	3.3	3.3	3.3	4.3	4.3	4.3	4.3	4.2	4.2	0.72	0.72	6.32	1 07	700	1.6	91	1.6	1.6	7.8	11.3	11.3	11.3	3.5	}
WATER_TYPE	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	NIVEN	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	RIVER	
LOCATION	MONTGOMERY CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	MONTGOMERY CO	MONTGOMERY CO	MONTGOMERY CO	MONTGOMERY CO	MONTGOMERY CO	MONTGOMERY CO	MONTGOMERY CO	MONTGOMERY CO	MONTGOMERY CO	ROBERTSON CO	MONTGOMERY CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	POBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	ROBERTSON CO	
	TN05130206002_0100 Dunbar Cave Creek			TN05130206002_0200 Elk Fork Creek			TNO5130206002_0300 Spring Creek					TN05130206002_1000 Red River	TN05130206002_1000 Red River	TN05130206002_1000 Red River	TN05130206002_2000 Red River																					TNIOS130200003_1300 Cart Creek	TAIGET-2020C003 1320 Unitialised IIID to Carl Creek				TNO5130206003 1355 Carr Creek				DECT_CONONTACTON!

Table 4 NPDES Permitted WWTFs in Impaired Subwatersheds or Drainage Areas

NPDES	Facility	Design Flow	- Receiving Stream
Permit No.	Facility	[MGD]	Receiving Stream
TN0020621	Greenbrier STP	0.74	Unnamed Trib to Carr Creek at Mile 10.3
TN0020656	Clarksville STP	25	Cumberland River at Mile 125.0
TN0021296	Fort Campbell STP	4	Little West Fork Creek at Mile 10.4
TN0021865	Portland STP	1.9	Summers Branch at Mile 8.6
TN0024961	Springfield STP	3.4	Sulphur Fork at Mile 23.2
TN0058076	Jo Byrns School	0.025	Unnamed Trib to Sturgeon Creek at Mile 2.4
TN0059404	White House STP	1.4	Frey Branch at Mile 2.2

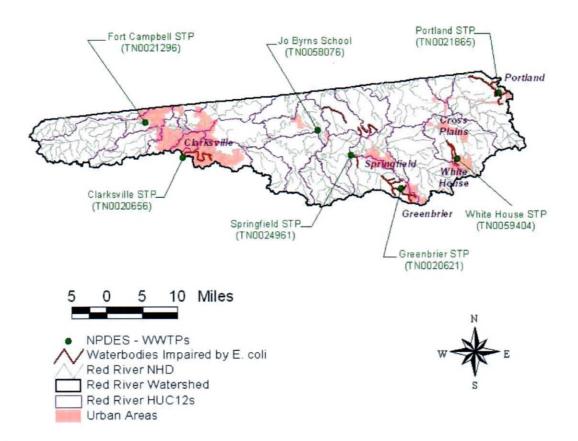


Figure 6. NPDES Regulated Point Sources in and near Impaired Subwatersheds and Drainage Areas of the Red River Watershed.

E. Coli TMDL Red River Watershed (HUC 05130206)

3/19/08 - Final

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						WLAS		
	Impaired Waterbody Name	Impaired Waterbody ID	TMDL	MOS	WWTFs <sup>a</sup>	Leaking Collection Systems	MS4s °	LAs
			[CFU/day]	[CFU/day]	[CFU/day]	[CFU/day]	[CFU/day/acre]	[CFU/day/acre]
л	Summers Branch	TN05130206024 - 0150	2.30 × 10 <sup>10</sup> * Q	2.30 × 10 <sup>9</sup> * Q	6.767 x 10 <sup>10</sup>	0	1.046 × 10 <sup>6</sup> * Q – 3.418 × 10 <sup>6</sup>	1.046 × 10 <sup>6</sup> * Q – 3.418 × 10 <sup>6</sup>
_	Frey Branch	TN05130206010 - 0321	2.30 × 10 <sup>10</sup> * Q	2.30 × 10 <sup>9</sup> * Q	4.986 x 10 <sup>10</sup>	0	NA	$6.766 \times 10^6 * Q - 1.630 \times 10^7$
	Buzzard Creek	TN05130206002 - 0400	1.20 × 10 <sup>10</sup> * Q	1.20 × 10 <sup>9</sup> * Q	NA	NA	NA	6.966 x 10 <sup>5</sup> * Q
	Seven Springs	TN05130206002 - 0700	2.30 × 10 <sup>10</sup> * Q	2.30 x 10 <sup>9</sup> * Q	NA	NA	7.494 x 107 * Q	7.494 x 10 <sup>7</sup> * Q
	Red River	TN05130206002 - 1000	2.30 × 10¹0 ∗ Q	2.30 × 10 <sup>9</sup> * Q	4.719 x 10 <sup>11,b</sup>	0	2.289 x 10 <sup>4</sup> * Q - 9.454 x 10 <sup>2</sup>	2.289 × 10 <sup>4</sup> * Q – 9.454 × 10 <sup>2</sup>
	Carr Creek	TN05130206003 - 1200	2.30 × 10 <sup>10</sup> ∗ Q	2.30 × 10 <sup>9</sup> * Q	2.636 x 10 <sup>10</sup>	0	9.698 × 10° * Q – 1.235 × 10 <sup>6</sup>	9.698 × 10° * Q – 1.235 × 10°
	UT to Carr Creek	TN05130206003 - 1220	2.30 × 10 <sup>10</sup> * Q	2.30 × 10 <sup>9</sup> * Q	2.636 x 10 <sup>10</sup>	0	1.250 × 10′ * Q – 3.051 × 10′	1.250 × 10′ * Q – 3.051 × 10 <sup>7</sup>
_	Carr Creek	TN05130206003 1255	2.30 × 10 <sup>10</sup> ∗ Q	2.30 × 10 <sup>9</sup> ∗ Q	2.636 x 10 <sup>10</sup>	0	2.547 × 10° * Q – 3.243 × 10°	2.547 × 10° * Q – 3.243 × 10°

Notes:

NA = Not Applicable.
 Q = daily instream mean flow
 WLAs for WWMTFs are expressed as E. coli loads (CFU/day). Future WWMTFs must meet instream water quality standards at the point of discharge as specified in their NPDES permit.
 The WLA listed is for the subwatershed and is equal to the sum of the WLAs for the individual facilities. WLAs for individual WWMTFs corresponds to existing E. coli permit limits at facility

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Applies to any MS4 discharge loading in the subwatershed. Ü

Table E-11. S	Summary of TMDLs,	of TMDLs.	E. coli TI Red River Watershed (HUC 05130) 3/19/08 - F Page E-20 of E Watershed (HUC 05130206)	s expres M (HUM	pressed as daily Watershed (HUC 05130206)	daily load ed )206)	s for Impa	Red River	Watersh	E. coli TMDL Red River Watershed (HUC 05130206) 3/19/08 - Final Page E-20 of E-21 ed Waterbodies in the Red River	E. coli TMDL UC 05130206) 3/19/08 - Final e E-20 of E-21 <b>Red River</b>
	I	Hydrologic Condition	ndition						WLAs		
Waterbody Description	Flow Regime	PDFE Range	Flow Range	Flow <sup>a</sup>	PLRG	TMDL	MOS	WWTFs <sup>b</sup>	SOT	MS4s	LAs
		[%]	[cfs]	[cfs]	[%]	[CFU/d]	[CFU/d]	[CFU/d]	[CFU/d]	[CFU/d/ac]	[CFU/d/ac]
Summers Branch	High Flows	0 - 10	46.88 - 209.9	79.99	8.09	$1.840 \times 10^{12}$	1.840 × 10 <sup>11</sup>			8.021 x 10'	8.021 × 107
Waterbody ID:	Moist	10 - 40	14.86 - 46.88	21.73	8.09	4.998 x 10 <sup>11</sup>	4.998 x 10 <sup>10</sup>	$6.767 \times 10^{10}$	0	1.930 × 10′	1.930 × 10'
TN05130206024 - 0150 HUC-12: 0101	Mid-Range	40 - 70	7.99 – 14.86	4.89	A.6	2.558 × 10" 1.125 × 10"	2.558 x 10" 1.125 x 10 <sup>10</sup>			8.208 x 10° 1.695 x 10°	8.208 × 10° 1.695 × 10°
	Linh Flowe	0,00	8 70 – 31 QA	13.16	۷N	3 027 × 1011	3 027 × 10 <sup>10</sup>				7 275 x 10'
Waterbody ID:	Moist	10 - 40	3.98 – 8.70	5.04	45.6	1.159 x 10"	1.159 x 10 <sup>10</sup>	000 . 4010	4	Š	1.780 × 10'
TN05130206010 - 0321	Mid-Range	40 - 70	2.92 - 3.98	3.38	NR	7.774 × 10 <sup>10</sup>	7.774 × 10 <sup>9</sup>	4.986 x 10	¥ Z	Z Z	6.572 x 10 <sup>6</sup>
HUC-12: 0201	Low Flows	70 – 100	2.17 - 2.92	2.46	10.5	5.658 x 10 <sup>10</sup>	5.658 x 10 <sup>3</sup>				3.471 x 10 <sup>5</sup>
Buzzard Creek	High Flows	0 - 10	63.76 - 285.99	109.84	NR	1.318 x 10 <sup>12</sup>	1.318 x 10 <sup>11</sup>				7.652 x 10'
Waterbody ID:	Moist	10 - 40	16.67 - 63.76	26.87	NR.	3.224 × 10"	3.224 × 10"	AN	AN	AN	1.872 × 10'
TN05130206002 - 0400	Mid-Range	40 - 70	6.67 – 16.67	11.26	13.2	1.351 × 10''	1.351 × 10"				7.844 × 10°
HUC-12: 0401	Low Flows	70-100	0-6.67	7.54	16.0	3.048 X 10	3.048 x 10				01 x 607.1
Seven Springs	High Flows	0-10	1.65 - 7.88	2.86	N.	6.578 × 1010	6.578 x 10 <sup>3</sup>			2.143 × 10°	2.143 × 10°
Waterbody ID:	Moist	10 – 40	0.45 - 1.65	0.74	¥ !	1.702 × 10"	1.702 × 10°	ν Α	0	5.545 x 10	5.545 x 10
TN05130206002 - 0700 HUC-12: 0407	Mid-Range	70 - 70	0.18 - 0.45	0.29	25.0	1.840 × 10°	1.840 x 10 <sup>8</sup>			5.995 x 10°	5.995 x 10 <sup>6</sup>
	High Flows	0-10	5023 1 - 15 235	7.338.5	ž	1.688 x 10 <sup>14</sup>	1.688 x 10 <sup>13</sup>			1.675 x 108	1.675 x 108
Red River	Moist	10 - 40	1733.1 - 5023.1	2,549.2	AN AN	5.863 x 10 <sup>13</sup>	5.863 x 10 <sup>12</sup>	24.5		5.784 x 10'	5.784 x 10'
Waterbody ID:	Mid-Range	40 - 60	1021.2 - 1733.1	1,364.3	AN	3.138 x 10 <sup>13</sup>	3.138 x 10 <sup>12</sup>	4.719 x 10 <sup>11,c</sup>	0	3.071 x 10'	3.071 × 10'
INUSTSUEDUZ = 1000	Dry	06 - 09	270.3 - 1021.2	597.44	AA	$1.374 \times 10^{13}$	$1.374 \times 10^{12}$			1.316 x 10'	1.316 x 10'
HOC-12. 040/	Low Flows	90 - 100	82.04 - 270.3	200.80	NA	$4.618 \times 10^{12}$	4.618 x 10 <sup>11</sup>			$4.075 \times 10^{6}$	4.075 x 10°
Carr Creek	High Flows	0 - 10	96.20 - 429.43	164.21	8.09	$3.777 \times 10^{12}$	3.777 × 10 <sup>11</sup>			1.580 x 108	1.580 x 108
Waterbody ID:	Moist	10 – 40	26.49 - 96.20	41.26	NR.	9.490 × 10 <sup>11</sup>	9.490 × 10 <sup>10</sup>	2 636 x 10 <sup>10</sup>	0	3.878 x 10'	3.878 × 10'
TN05130206003 - 1200	Mid-Range	40 – 70	11.75 – 26.49	18.69	W.	4.299 x 10	4.299 × 10"		ű.	1.689 x 10°	1.689 x 10°
HUC-12: 0503	Low Flows	70 - 100	1.14 - 11.75	5.22	14.9	1.201 × 10''	1.201 × 10"			3.827 × 10°	3.827 × 10°
ut to Carr Creek	High Flows	0 - 10	4.98 - 18.34	7.73	NA	1.778 × 10"	1.778 × 10"			1.547 x 10°	1.547 × 10°
Waterbody ID:	Moist	10 - 40	2.22 - 4.98	2.84	Y.	6.532 x 10"	6.532 x 10°	2.636 x 10 <sup>10</sup>	0	3.753 x 10'	3.753 × 10'
TN05130206003 - 1220	Mid-Range	40 - 70	1.58 – 2.22	1.86	¥.	4.278 × 10"	4.278 × 10°			1.405 x 10°	1.405 x 10°
HUC-12: 0503	Low Flows	70 – 100	1.14 - 1.58	1.30	NA	2.990 x 10°°	2.990 x 10 <sup>-</sup>			6.366 x 10	6.366 x 10

E. coli TMDL Red River Watershed (HUC 05130206) 3/19/08 - Final

Page E-21 of E-21 Table E-11 (cont'd). Summary of TMDLs, WLAs, & LAs expressed as daily loads for Impaired Waterbodies in the Red River Watershed (HUC 05130206)

	Í	Hydrologic Condition	ndition						WLAs		
Waterbody Description	Flow Regime	PDFE Range	Flow Range	Flow <sup>a</sup>	PLRG	TMDL	MOS	WWTFs <sup>b</sup>	rcs	MS4s	LAs
		[%]	[cfs]	[cts]	[%]	[CFU/d]	[CFU/d]	[CFU/d]	[CFU/d]	[CFU/d] [CFU/d/ac]	[CFU/d/ac]
Carr Creek	High Flows	0 - 10	36.85 - 160.60	62.13	8.09	1.429 x 10 <sup>12</sup>	1.429 x 10 <sup>11</sup>			$1.550 \times 10^8$	1.550 x 108
Waterbody ID:	Moist	10-40	10.68 - 36.85	16.15	8.09	3.715 × 10"	3.715 x 10 <sup>10</sup>	2 626 5 4010	c	3.788 x 10'	3.788 x 10'
TN05130206003 - 1255	Mid-Range	40 - 70	5.08 - 10.68	7.75	NR	1.783 x 10 <sup>11</sup>	$1.783 \times 10^{10}$	Z.020 X 10	0	1.649 x 10'	1.649 x 10'
HUC-12: 0503	Low Flows	70 - 100	1.14 - 5.08	2.65	7.2	$6.095 \times 10^{10}$	$6.095 \times 10^{9}$			3.505 x 10 <sup>6</sup>	3.505 x 10°

Notes:

NA = Not Applicable. NR = No Reduction Required. PLRG = Percent Load Reduction Goal to achieve TMDL.

LCS = Leaking Collection Systems

Shaded Flow Zone for each waterbody represents the critical flow zone.

Flow applied to TMDL, MOS, and allocation (WLA[MS4] and LA) calculations. Flows represent the midpoint value in the respective hydrologic flow regime. WLAs for WWTFs are expressed as E. coil loads (CFU/day). All current and future WWTFs must meet water quality standards at the point of discharge as specified in their NPDES permit; at no time shall concentration be greater than the appropriate E. coil standard (487 CFU/100 mL or 941 CFU/100 mL). The WLA listed is for the Subwatershed and is equal to the sum of the WLAs for the individual facilities. WLAs for individual WWTFs correspond to existing E. coil permit limits at p a

facility design flow. Ö



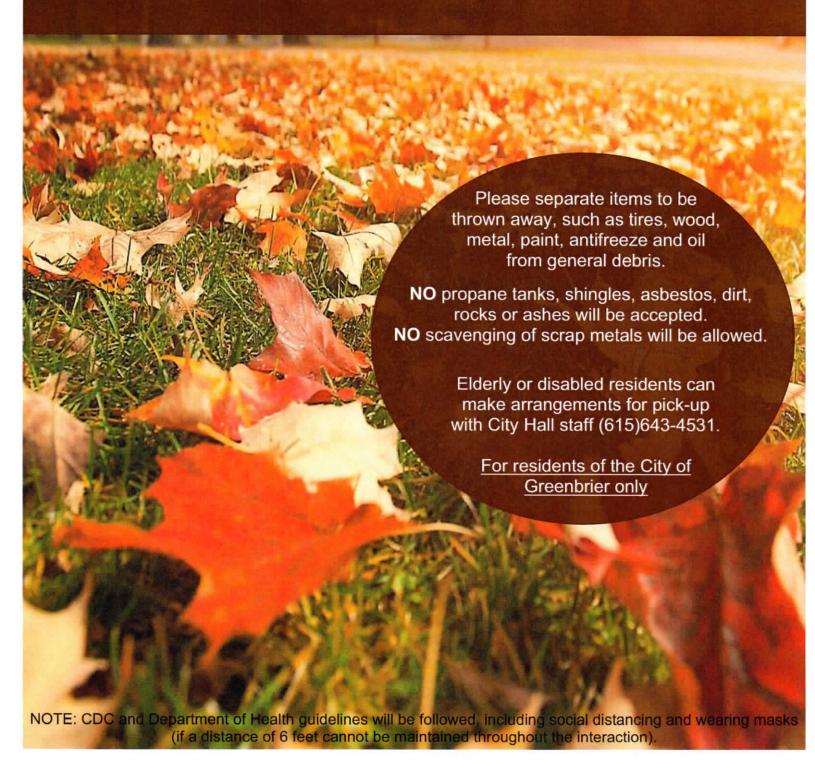


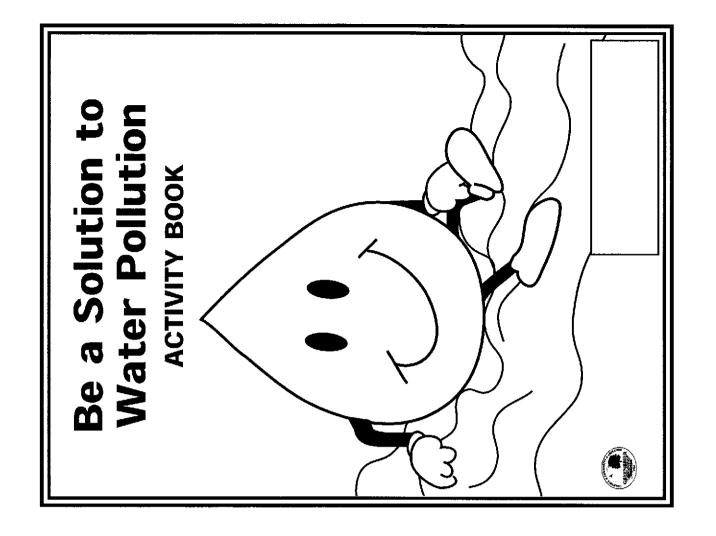
## • APPENDIX B: <u>PUBLIC EUDCATION/OUTREACH</u> AND INVOLVEMENT/PARTICIPATION

## **SUPPORTING MATERIALS**

## GREENBRIER FALL CLEAN-UP DAY



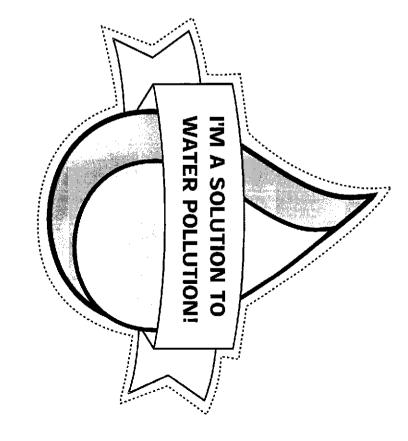




Have you ever walked next to a stream and seen trash floating in the water? Do you know how it gets there? Every time it rains, the water runs off the land and picks up pollutants such as dirt, oil, pet waste, litter, trash, pesticides and fertilizers. This polluted water flows into street drains and ditches that eventually drain to waterways. Never dump anything that you would not want to drink or swim in on the ground, in the street or down a storm drain. It will go into a river, lake or stream.



Good job! Ask your parent, teacher or troup leader to help you cut out your badge.



# CERTIFICATE OF COMPLETION

This certifies that

(Write your name here)
has completed this activity book and carned a Clean Water Badge-Good Job!

Signed:

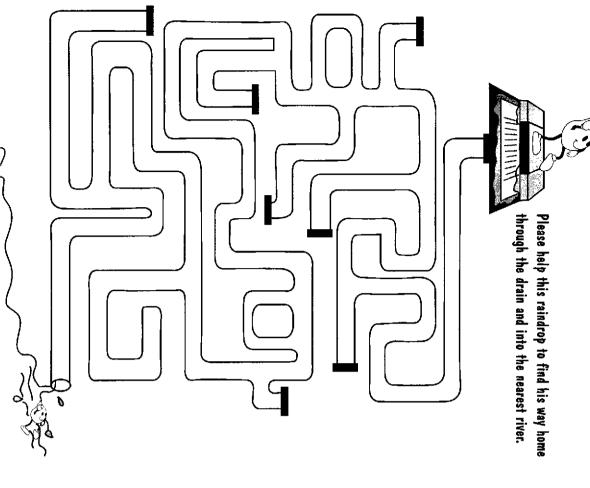
Reindrop

Keep It Clean Drains to Stream

Please Recycle

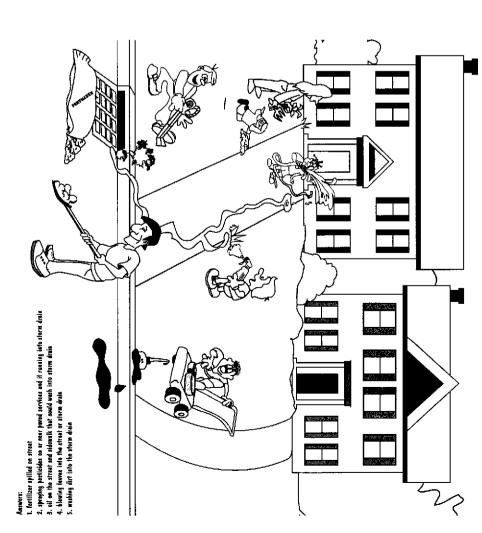
Can you find all of the things in the creek that do not belong?

Waterdrops go through an amazing journey to get to streams and creeks.



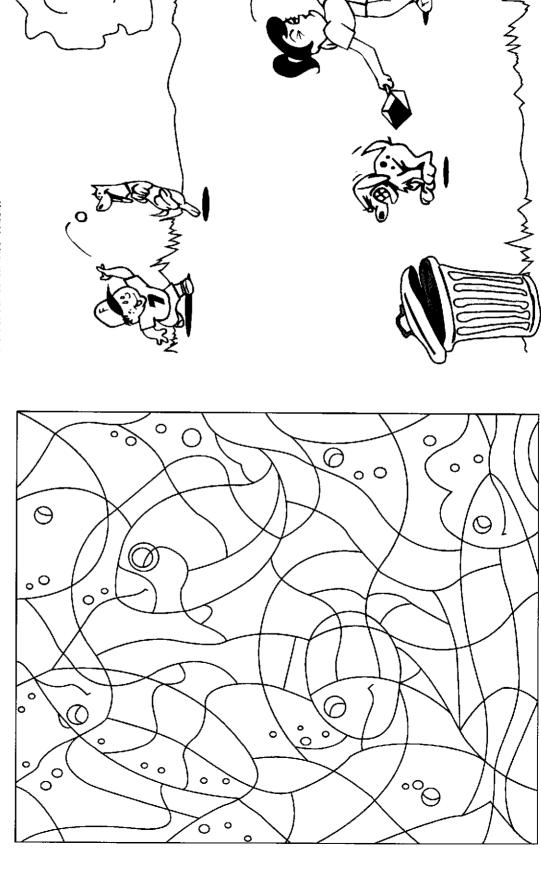
Working in the garden or on a lawn is a fun activity to do with grown-ups. When helping to clean a yard, remember not to dump anything down a storm drain or in the street. Can you find what is wrong with this picture?

Circle the mistakes that the people in this drawing are making.

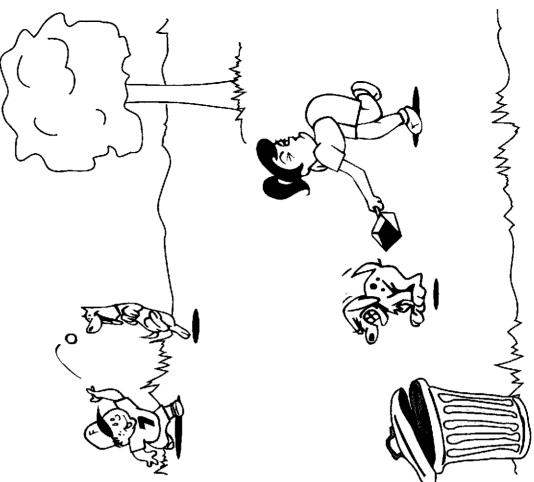


Fish and other aquatic life rely on clean water. Plastic bags, oil, other chemicals and other pollutants cause harm to fish.

Find the fish and color them in.



lake or stream. Carry a plastic or paper bag with you to pick-up after dogs collected by rainwater and dumped into a nearby storm drain or into a river, It is important to cleanup after your dog. Every time it rains, "poop" is and throw it in the trash.



## THE WATER CYCLE

continuous movement is called the water cycle. It starts when water from lakes, ponds, or the ocean is warmed and changes back into water droplets, or condensation. Water changes into little drops by "condensing" or by the sun and evaporates into water vapor. This invisible vapor rises into the atmosphere where it cools Water is always being recycled through our environment. It moves through the air, vegetation and earth. This "squeezing together" in the air, and we get clouds.

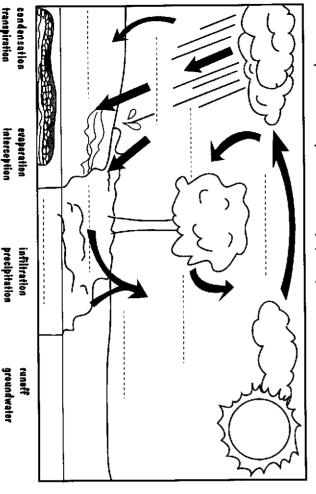
water out of their leaves. When the sun shines on plants, tiny drops of water are released into the air. Another way that water vapor travels in the air is through transpiration. Transpiration is how plants lose

soaks into the ground (infiltration) and becomes groundwater or it runs off the land and drains into rivers When the droplets get big enough, they drop down to the ground as rain, or precipitation. Rain either As more water vapor cools into the clouds, the water droplets that form the clouds become larger and larger. lakes and streams(runoff).

it falls to the ground. This is called interception. As water falls to earth in various forms of precipitation, plants intercept or eatch some of the water before

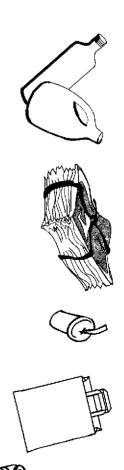
water will seep through the ground and flow into a river, lake or stream and help keep them filled with water Groundwater is under the ground and in the soil. It is the water that plants and animals use to drink. Some The cycle repeats over and over again.

Label the steps of the water cycle on this drawing by filling in the blanks with the words below..



transpiration

Antoelers: 1. newspepar, Z. glass, 3. bottles, 4. plassie, 5. milk jugs, 6. akumlaum anns



We can "Be a Solution to Water Pollution" by recycling cans, bottles, milk jugs, plastic bags and newspapers at home or in school.

Below is a list of scrambled words, which stands for items that can be recycled.

	5. likm sugj	4. slaptic	3. Hlesob	2. Isgas	1. wspeprane		
0				<b>D</b>	6/		

## Grasscycling

The environmental benefits include:

- 1. Reducing the amount of fertilizer needed (because nutrients from clippings are returned to the soil),
- 2. Improving moisture-retention, and
- 3. Decreasing soil temperatures in the summer months

## Most common misconceptions:

- not grass clippings. And, a small amount No! Studies have shown that grass roots are the primary cause of thatch, of thatch is actually beneficial. It serves as a mulch, preventing water evaporation and soil compaction. Grasscycling causes thatch build-up.
- ing. If a disease is present, infestation No! The primary cause of disease spread is improper watering and fertilizwill occur whether you are grasscycling Grasscycling spreads lawn disease.
- My lawn will look bad.

No! Grasscycling will give you a healthier looking lawn if it is mowed, watered, and fertilized properly.



Grasscycling is parks and golf have not new. Many

been practicing grasscycling successfully for years.





storm drain and on to ...to the

Drain is CLEAN WATER, NEVER Grass Clippings! The ONLY substance allowed to enter the Storm

PROTECTING YOUR STORM DRAIN, PROTECTS YOUR WATER!



790 W. College St. Greenbrier, TN 37073





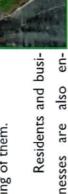
An Educational Brochure developed by the Department of Stormwater Management and Code Enforcement for the

information is not meant to be comprehensive and may change

# Where do your grass clippings end up?

## GRASSCYCLING is a rela-

tively low-cost strategy to reduce the disposal of organics. Residents and businesses are encouraged to leave the grass clippings on the lawn instead of bagging and disposing of them.



To un-

couraged to grasscycle away from any and all public ways and storm drains. Grass clippings that enter the road, driveway, storm drains and sidewalks will be washed to a waterway; this is also a Stormwater

violation in which you could be fined.

EPA estimates that grass clippings account for 50% of all yard trimmings, so grasscycling could address the estimated 8.8 thousand tons of clippings generated in Tennessee.

## How does something as natural as grass hurt the stream?

This is a legitimate question as most folks

don't un-

derstand
how grass
clippings
can damage a
stream.

Mow into the road.

Never

ers natural vegetation and can add excessive regulations prohibit the discharge, dumping derstand the problem you must first think nutrients to the creek. When the yard waste harming aquatic life in the creek. The material can also float downstream, lodge against Stormwater flows. Current Federal and State Grass clippings or other yard waste smothdecays it introduces high nutrient levels, which reduces oxygen levels in the water, trees, and become a major obstruction to or release of potential pollutants into waterabout what happens when organic matter such as grass clippings begin to decompose. courses. This does includes grass clippings and yard waste.

## Why should I protect the Storm Drains?

Millersville's storm drain system was designed to prevent flooding by transporting excess rainwater from city streets. Since the storm drain system contains no filter, untreated storm water is released into our waterways. Storm water pollution occurs when untreated contaminated water (urban runoff) drains from city streets into the

Did you know that the largest source of storm water pollution is residents?

Through the conduct of daily activities,

the general public releases various pollutants into the storm drain. Urban runoff is the largest source of unregulated pollution to our waterways. The most com-



mon pollutants released into storm drains are:

- ⇒ Fuel and motor oil leaking from cars
  - ⇒ Household cleaning products
- ⇒ Improperly disposed paint and paint thinners
- ⇒ Paper, cups, and other litter
  - ⇒ Yard waste and fertilizers
- ⇒ Animal waste left from household pets

#### **Maintenance Standards Maintain Design or** Failure to Meet or



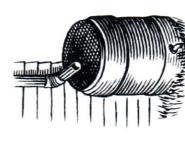
If a responsible fuses to meet the design or mainteparty fails or re-

may choose to correct a violation of sonable notice, may choose to begin or more than \$5,000.00, assessed each day the violation continues or the design standards or maintenance needs by ordering corrective action to be performed by the city or others until all necessary work to place the facility in proper working condition is the Stormwater Manager, after realevying fines of not less than \$50.00,



## STORMWATER

- SLOW IT DOWN
- SPREAD IT OUT SOAK IT IN



City of Greenbrier

EVERYONE'S BUSINESS! CLEAN WATER



City of Greenbrier Stormwater Dept.

INFORMATIONAL BROCHURE

### PERMANEN BMP'S



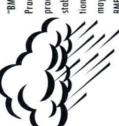
Contact Information:

Phone: 615-643-4531

Fax: 615-643-0357

Greenbrier, TN 37073 790 W. College St.

## What are Permanent BMP's?



"BMP" is an acronym for Best Management
Practices. "Permanent" simply means these
practices will remain on the site even after it is
stable. One type BMP may be an erosion prevention practice, or a sediment control practice, or it
may serve both purposes at the same time.

BMP's are designed to remove pollutants from urban runoff and control water quantity before it reaches our streams.

### Examples of permanent BMP's are:

Buffer Zone—A strip of undisturbed, original vegetation, enhanced
or restored existing vegetation, or the re-establishment of vegetation
surrounding an area of disturbance or bordering streams, ponds,
wetlands, or lakes.

- Diversion—a channel of compacted soil constructed above, across, or below a slope, with a supporting earthen ridge on the lower side. A diversion consists of two components: the ridge and the channel.
- Gabion—Large, multi-celled, welded wire or rectangular revetments, retaining walls, abutments, check dams, etc.

3

œ.

- Riprap—Erosion-resistant ground cover of large, loose angular stone with a geotextile or granular underlining.
- Storm Drain Outlet Protection—paved and/or riprapped channel treatment, placed below storm drain outlets.
- Rain Garden—a planted depression that allows rainwater runoff from impervious urban areas like roofs, driveways, walkways, parking lots, etc.

9

 Stormwater filtration systems—consist mainly of a pretreatment, or sedimentation area, and the filter area. Runoff first enters the sedimentation area where the runoff velocity is reduced allowing larger pollutant

particles to drop out. When the stormwater leaves the sedimentation area, it is spread evenly over the filter bed, where it flows downward through the filter media. As the stormwater flows through the filter, the filtration media trap and absorb pollutants present in the stormwater.

- Dry Extended Detention Basin—Underground detention facilities are structural BMPs designed to provide temporary storage of stormwater runoff for quantity control purposes. The systems are typically installed beneath parking lots, streets, and parks
- 9. Wet Detention ponds—consists of a permanent pool, temporary pool, and a forebay. The permanent pool prevents particles that have settled to the pond bottom from re-suspending when runoff flows into the pond. The temporary pool is storage above the permanent pool which is utilized to control runoff during a storm event. A separate smaller pond, called a forebay, is placed upstream of the main pond to trap suspended solids in the runoff before it enters the main pond.





### Appeal Process

There is an appeal process if you

feel that you have been unfairly

accused.

### Built Plans

All applicants are required to submit actual as built plans for any structures located on-site after final construction is completed along with any changes to the Operations and Maintenance Plan submitted with the application. Significant changes must be approved by the Stormwater Manager. The plan must show the final design specifications for all stormwater management facilities and must be sealed by a registered professional engineer licensed to practice in Tennessee.

### Recorded Plat

The location of the Stormwater facilities and best management practices, the recorded location of the Covenants document, and inspection and maintenance guidance that outlines the property owners responsibility shall be shown on a plat that is recorded in the Office of the County Register of Deeds.

## Landscaping Operations and Maintenance Plan Must be submitted with the final design describing the vegetative stabilization and management techniques to be used at a site after construction is completed. This plan will explain not only how the site will be stabilized after construction, but who will be responsible for the maintenance of vegetation at the site and what practices will be employed to ensure that adequate vegetative cover is preserved.

#### Inspections

Routine inspections are the responsibility of the property owner, or the owner/s of the Stormwater management facilities.



#### cords

Parties responsible for the operation and maintenance of a stormwater management facility shall make records of the installation of the stormwater facility, and of all maintenance and repairs to the facility, and shall retain the records for at least ten years. These records shall be made available to the Stormwater Manager during inspection of the facility and at other reasonable times upon request.

## **DID YOU KNOW?**

In 2001, there were an estimated 6.5 million dogs in the United States. That's 6.3 billion pounds of poop per year!!

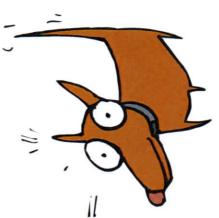
It would take a scoop 300 feet wide and 800 feet deep to dispose of all of that poop! \* Source: U.S. Pet Ownership and Demographics Source Book by the American Veterinary Medical Association.

Please

Scoop



## Pick It







### THE PROBLEM

Pet waste can contaminate our rivers, lakes and streams. Pet waste contains harmful bacteria such as E. Coli and fecal coliform. Waters that contain a high amount of bacteria such as E. Coli are unfit for human contact. A single gram of pet waste contains an average of 23 million fecal coliform bacteria, some of which can cause disease in humans.



- Pet waste decays, using up dissolved oxygen and releasing compounds that are harmful to fish and other animals that rely on water.
- Pet waste contains nutrients that can cause excessive algae growth in a river or lake, upsetting the natural balance.

## I WANT TO BE A RESPONSIBLE PET OWNER, BUT DOES THIS MEAN I HAVE TO PICK UP AFTER MY PET?



### The bad news is...

Yes, you do have to "scoop the poop" but it's a small price to pay to protect our water quality.

### The good news is...

Whether in your yard or walking your dog, you can easily do the right thing. Purchase a "pooper scooper" or simply use a plastic bag. Many parks and apartment complexes provide special posts with "pet mitts" or bags to help you clean up after your dog. When finished, just place the waste in a garbage can. Everyone will be happier when you pick up after your pet!



Pet waste left on sidewalks, streets, yards or other open areas can be washed away and carried by rainwater into storm drains to nearby rivers, lakes and streams and cause many problems.







## **ARE YOU A DO-IT-YOURSELFER?**

## YOU CAN PUT THE BRAKES ON WATER POLLUTION

### Did You Know?

Each year millions of gallons of used motor oil are disposed of improperly: dripped, spilled or poured directly onto the ground or down storm drains.

io and triode to strein and so

It only takes four quarts, or about one oil change, of used motor oil to foul one million gallons of drinking water.

Many brake pads contain metals that wear away a little by little. The metal breaks down into dust each time you apply the brakes. Brake pads can contain as much as 20 percent copper, which is toxic to aquatic life at the base of the food chain. They also contain lead and zinc. (Source: US EPA)

### BE A SOLUTION TO WATER POLLUTION.



Stormwater Management 790 W. College St. Greenbrier, TN 37073 (615) 643-4531 www.

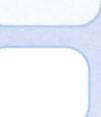


## PUT THE BRAKES ON

WATER POLLUTION TIPS FOR MAINTAINING OR

REPAIRING YOUR VEHICLE AT HOME









# PREVENT STORMWATER POLLUTION AND HELP PROTECT OUR RIVERS, LAKES AND STREAMS. BY PREVENTING FLUIDS FROM REACHING THE STREET OR STORM DRAIN, YOU CAN



BE AWARE OF WHERE YOU WORK

- Any drips or spills on the ground can be carried away by rainwater to a storm drain and into a nearby river, lake or stream.
- Choose to work on a flat concrete surface where you can easily clean up accidental spills. Remember the phrase "keep it clean, drains to stream" when you work on paved surfaces.
- Never work on a vehicle in the street or near a storm drain.



FOLLOW THESE TIPS WHEN CHANGING YOUR OIL OR OTHER VEHICLE FLUIDS

- Use funnels or pumps when handling liquid products or wastes to avoid spills.
- Capture vehicle fluids in separate drip pans or containers. Properly recycle used oil, antifreeze and other vehicle fluids. Do not mix vehicle fluids.

- Use plastic tarps and drip pans if a car is leaking.
   Pour the oil collected on tarp back into a drip pan.
- Drain and recycle used oil filters. Poke holes in the filer and let it drain into your oil pan for several hours before you recycle.
- As an alternative, you can use kitty litter, sawdust or oil absorbent to clean spills. Apply it to the spill, sweep it up and dispose of the waste in the trash.
- If spills occur, use an absorbent pad to clean the spill.
   Squeeze the pad to wring out excess liquids. Place the used pad in a plastic bag and then dispose in the trash.
- Collect your used motor oil, antifreeze and oil filters in separate containers for transport to a nearby recycling station. Tires and batteries are some other items that can be recycled.



PUT THE BRAKES ON POLLUTION WHEN REPLACING BRAKE PARTS

- Many brake pads contain copper; which wears off as the pads wear and contributes to stormwater pollution.
- Don't hose down brake pads, rotors or drums.
- Use shop cloths to wipe as much brake dust as possible from the rotors and drums before using brake cleaner fluid. The shop cloths can be laundered and reused.
- Recycle cleaner fluid by using a drip pan. Reuse collected cleaner to clean rotors and drums.



- Wash water from washing your car at home can contain detergents, metals, oil, sediment and other debris that can pollute nearby rivers, lakes and streams.
- For spot cleaning, wipe the vehicle with a damp cloth instead of washing it.
- Take your vehicle to a commercial car wash that recycles water. This will prevent detergents and other contaminants from being washed down a storm drain or drainage ditch.



DID YOU KNOW THE FOLLOWING CAN BE RECYCLED?

Transmission fluid

Car batteries

Antifreeze

- Used tiresBrake fluid
- Used oil filters
- filters
- Used motor oil

For the location nearest you, visit earth911.com



### • APPENDIX C: <u>ILLICIT DISCHARGE</u> <u>DETECTION/ELIMINATION AND HOTSPOT</u> <u>INSPECTIONS</u>

**SUPPORTING MATERIALS** 

#### **ILLICIT DISCHARGE REPORT FORM**

Date:	
Name:	
Department:	<del></del>
Phone:	
What type of incident do you wish to r  Dumping Down a Storm Drain  Suspicious Discharge from a Pip  Unusual Color or Smell of Water	e into a Stream r in Stream
Suspicious Suds or other Substa	nces Floating on Water
Construction Runoff	
Where did the incident take place?	
Address (if applicable):	<del> </del>
Name of Closest Cross Street:	
Name of Body of Water Impacte	ed:
Please provide a brief description of th	ne illicit discharge and the area affected:
Date of the Incident:	Time of the Incident:
Please send this form along with any ac	dditional information and photographs to:
Alex West	

Alex West 790 W. College Street Greenbrier, TN 37073



#### **DOMETIC**

#### **SUPPORTING MATERIALS**

#### ILLICIT DISCHARGE REPORT FORM

Date:	03-14-21
Name:	Dometic
Depar	tment:
Phone	615-420-0602
What	type of incident do you wish to report? (check all that apply)  Dumping Down a Storm Drain
	Suspicious Discharge from a Pipe into a Stream
<u> </u>	
<u>ц</u>	Unusual Color or Smell of Water in Stream Suspicious Suds or other Substances Floating on Water
	Construction Runoff
Where	e did the incident take place?
	Address (if applicable): 178 Kelly Willis Kd.
	Name of Closest Cross Street:
	Name of Body of Water Impacted: Red Piver
Please	provide a brief description of the illicit discharge and the area affected:
Bir	ter a Heavy rain event Open Metal 15 Leaked into a retention Pond a Cloudy wid
Date o	of the Incident 03-18-21 Time of the Incident:
Pictur	es attached? Yes No
Please	e send this form along with any additional information and photographs to:
	Vest /. College Street brier, TN 37073



#### CITY OF GREENBRIER

P. O. BOX 466 • 790 W. COLLEGE STREET GREENBRIER, TENNESSEE 37073 PHONE (615) 643-4531 • FAX (615) 643-0357

March 18th, 2021

Dometic

1178 Kelly Willis Road

Greenbrier Tn, 37073

Subject:

Notice of Violation (Illicit Discharge)

Dometic

1178 Kelly Willis Road

Greenbrier, Robertson County, TN

Dear Daniel King or whom it may concern,

The City of Greenbrier was contacted on March 17th, 2021 about an illicit discharge on the ground and in the retention pond. The city did an onsite inspection on March 18<sup>th,</sup> 2021 and noted that a cloudy liquid was in fact being discharged on the ground. The spill appeared to be coming from the metal bins on the loading dock area back right side of the property. This is a violation of the City of Greenbrier Storm Water ordinance. This violation is an illicit discharge and needs to be handled immediately. I will be doing a follow up visit on April 1st, 2021 to make sure the issue at hand was handled.

During the site visit the City observed the following items that require attention:

- Leaking metal bins.
- Retention pond with sufficient amount of cloudy water.

The items listed above are not an all-inclusive list of items that were observed on site.

#### Please Submit the following items to the City of Greenbrier within the specified timeframe:

- 1. Immediately remove illicit discharge from storm drain and cover trash bins. Within 10 days of receipt of this letter, provide time-stamped photographic documentation showing issues above have been resolved.
- 2. Within 10 days of receipt of this letter,

Failure to remedy these violations within the specified timeframes may result in further actions, which will include a stop work order for the entire property, no more issuance of permits for the entire property, and monetary penalties of at least fifty (\$50) and no more

than five thousand (\$5,000) dollars per day the violation remains. If you have any questions
regarding this correspondence, please contact me at (615) 642-0544 or by E-mail at
awest@greenbriertn.org.

Sincerely,

Alex West

Facility Name:	Site Location:
Dometic	Robertson County
Photo No.	Date:

#### Description:

Illicit Discharge from metal bins. Loading dock area.

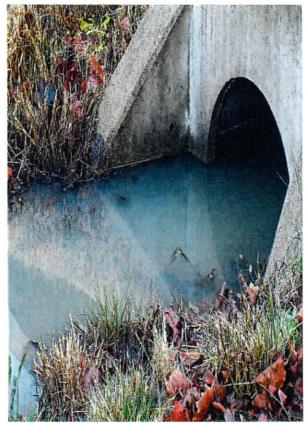




Facility Name:	Site Location:
Dometic	Robertson County
Photo No.	Date:
3	03/18/2021

#### Description:

Cloudy water in retention pond. Industrial drive side.



From:

Daniel King

Sent:

Thu Mar 18 2021 11:12:12 GMT-0500 (Central Daylight Time)

To: Subject: Attachments:

Carla Cauchev: Alex West RE: Notice of Violation EnviroGuard Info Sheet.pdf

Thank you for the information and sorry to make introductions this way. I'm the new EHS Manager for the Dometic site and have been working on this issue, although I know it's not a new issue for your department and this facility to address. The material is being pumped as we speak from the basin and the attached Enviroguard (pivoting model) was ordered back in January. They will be covered immediately with the short term solution, pictures will be taken and I will follow up with pictures once the pivoting units are delivered. Below is the email from our recycler indicating delivery time frames next week.

"I'M sorry I have been out of the office for a few daysi talked with them this morning they said they should be finished on the 26th and will let me know on a delivery date but as soon as iget them letterd and take delivery your there next stop thank you im just at the manufactures mercy"

Lee Shrum Shrum Auto Salvage, LLC 615-859-9496

Sorry again for the inconvenience and I will make sure this is remedied moving forward.

Sincerely.

Daniel King EHS/Lean Coordinator Cell 615-420-0602 daniel.king@Dometic.com Dometic North America, 1178 Kelly Willis Road, 37073 Greenbrier, TN United States dometic.com

NOTICE: This email and any attachments are for the sole use of the intended recipient(s) and may contain confidential information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please notify the sender by reply email and destroy the original message.

From: Carla Caughey <ccaughey@greenbriertn.org> Sent: Thursday, March 18, 2021 9:26 AM To: Daniel King <daniel.king@Dometic.com> Cc: Alex West <awest@greenbriertn.org> Subject: Notice of Violation

Importance: High

[EXTERNAL]: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Mr. King, Attached is a copy of the Notice of Violation (Illicit Discharge) that was mailed on 03/18/2021. If you have any questions please contact Alex West (615) 643-4531.

Carla Caughey Clty of Greenbrier Property Standards 629-867-7979

From:

Daniel King

Sent: To: Thu Mar 18 2021 16:58:29 GMT-0500 (Central Daylight Time)

Cc:

Carla Caughey Alex West

Subject:

RE: Notice of Violation

Attachments:

PXL\_20210318\_213056371.jpg; PXL\_20210318\_213205376.jpg; PXL\_20210318\_212511651.jpg; Time Stamp.JPG

#### Good Afternoon,

I'm apparently struggling with how to date and time stamp my photos so I wanted to get these to you ASAP as verification of today's cleanup activities. If you right click on them, you can click on properties and it will show the date and time stamp that way. I've screen-shotted that to verify. In total we pumped approximately 300 gallons of rain water containing the white milky residue from the rolloff, cleaned any residual spill containment and added spill containment to prevent any further drippings from entering the stormwater. The units will be tarped until the 26<sup>th</sup> when the hard covered units arrive. Verification of that will also be sent shortly after arrival and again, sorry for the inconvenience.

Daniel King
EHS/Lean Coordinator
Cell 615-420-0602
daniel.king@Dometic.com
Dometic North America, 1178 Kelly Willis Road, 37073 Greenbrier, TN United States
dometic.com

NOTICE: This email and any attachments are for the sole use of the intended recipient(s) and may contain confidential information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please notify the sender by reply email and destroy the original message.

From: Carla Caughey <ccaughey@greenbriertn.org>

Sent: Thursday, March 18, 2021 1:05 PM
To: Daniel King <daniel.king@Dometic.com>

Subject: RE: Notice of Violation

[EXTERNAL]: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Mr. King,

Thank you for your prompt response of the matter.

Sincerely,

Carla Caughey City of Greenbrier Property Standards 629-867-7979

----Original message-----

From: Daniel King <<u>daniel.king@Dometic.com</u>> Sent: Thursday 18th March 2021 11:12

To: Carla Caughey <<u>ccaughey@greenbriertn.org</u>>; Alex West <<u>awest@greenbriertn.org</u>>

Subject: RE: Notice of Violation

Thank you for the information and sorry to make introductions this way. I'm the new EHS Manager for the Dometic site and have been working on this issue, although I know it's not a new issue for your department and this facility to address. The material is being pumped as we speak from the basin and the attached Enviroguard (pivoting model) was ordered back in January. They will be covered immediately with the short term solution, pictures will be taken and I will follow up with pictures once the pivoting units are delivered. Below is the email from our recycler indicating delivery time frames next week.

"I'M sorry I have been out of the office for a few daysi talked with them this morning they said they should be finished on the 26th and will let me know on a delivery date but as soon as iget them letterd and take delivery your there next stop thank you im just at the manufactures mercy"

Lee Shrum

Shrum Auto Salvage, LLC

615-859-9496

Sorry again for the inconvenience and I will make sure this is remedied moving forward.

Sincerely,



3/26/2021

City of Greenbrier Attn: Alex West P.O. Box 466 Greenbrier, TN 37073

Re: Notice of Violation (Illicit Discharge)

Dometic - 1178 Kelly Willis Rd

3/18/2021

Dear Mr. West.

In an email dated 3/18/2021, received by mail on 3/21/21, Dometic Corp Greenbrier was made aware of a discharge of cloudy liquid from leaking metal bins that had impacted our detention pond on the southeast corner of the property. The letter required immediate action to address the discharge along with longer term countermeasures necessary within 10 days of the letter to prevent future discharges. As such, the following timeline of events has occurred:

3/18/21 – All cloudy liquid and associated rainwater was pumped immediately into totes and drums and containment was placed under the leaking metal roll-off to prevent further discharge during rain. Confirmatory pictures were taken of the containerized material and clean discharge. Please see pictures PXL\_20210318\_212511651, PXL\_20210318\_213056371 and PXL\_20210318\_213205376 as documentation.

3/23/21 – After all material had been removed, additional residual material present in the sewer was witnessed and also pumped to prevent additional impact and further clarify the water. The leak point of the roll-off was also sealed with silicone to prevent any potential loss of material.

3/25/21 – During a rain event on Thursday, discharge at the same location was photographed (PXL\_202103232\_151611645) to further confirm no white residue was present during rain or coming from the suspect roll-off (PXL\_20210325\_150654928

These corrective actions were intended to provide immediate response measure to prevent impact to the environment. Additionally Dometic has been in the process of remedying the process indefinitely. Attached to this letter, please also find the following:

EnviroGuard Hard Roll-Off Covers — As noted by the quote date, Dometic began the process
of hard cover procurement in December of 2020. Due to longer than anticipated lead times,
this process has taken longer than anticipated. As noted in the attached email from Lee
Shrum, the anticipated delivery of the roll-offs with attached hard covers is 3/26/2021, after
which he will deliver them to our site for ongoing use. The units utilize permanently attached
hard covers which are manually slid on and off to prevent rainwater infiltration. Confirmation
of their receipt will be forwarded once received and in place.

- 2. <u>Exterior Covering</u> Attached, please find the drawing labeled Proposed Awning Construction. This external awning will be designed to permanently fix stormwater issues with the roll offs and is currently pending final quote before construction.
- 3. <u>Dewatering Pumps</u> In the event of rainwater presence in a roll off due to a cover being forgotten or removed, a dewatering system has been developed to remove any water from the tanks to be treated externally (PXL 20210326 191638916).

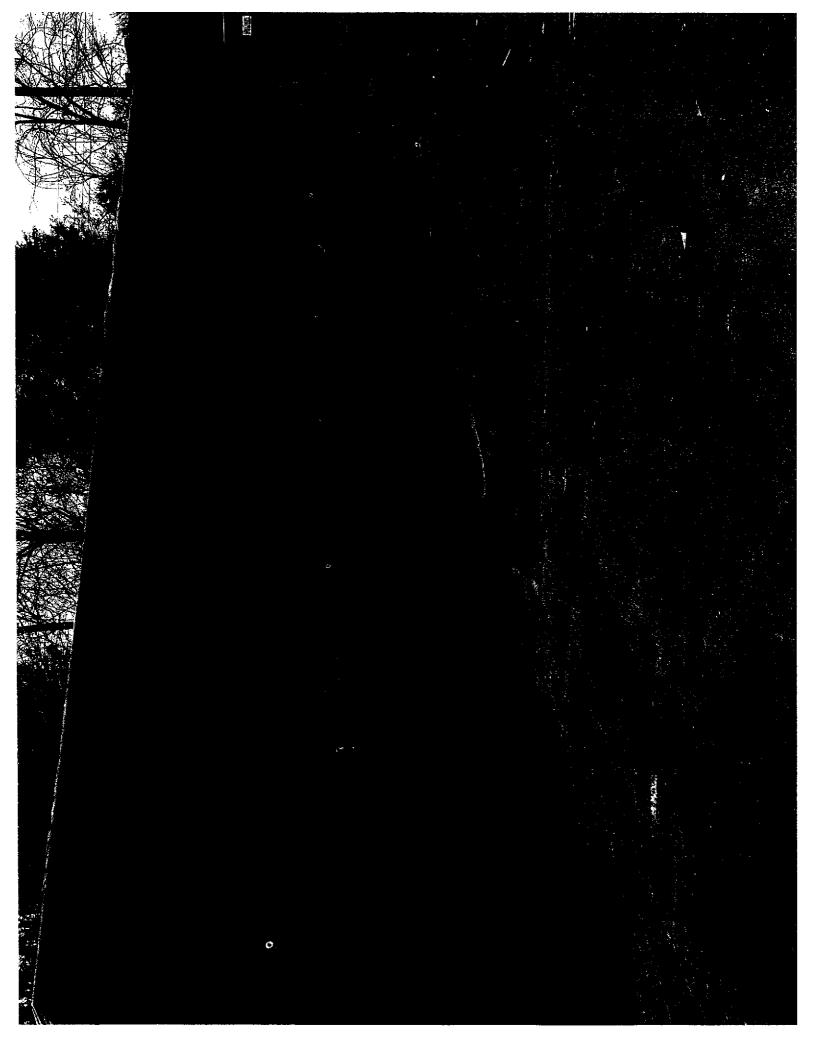
Until the receipt of the hard covered units in the upcoming days, Dometic will continue to monitor the roll offs closely, dewater and dispose of any material as needed and ensure the cloudy material does not continue to be a problem. Tarps have been purchased and used intermittently, but due to the design of the rolloff, they have a tendency to collect rainwater more so than prevent it.

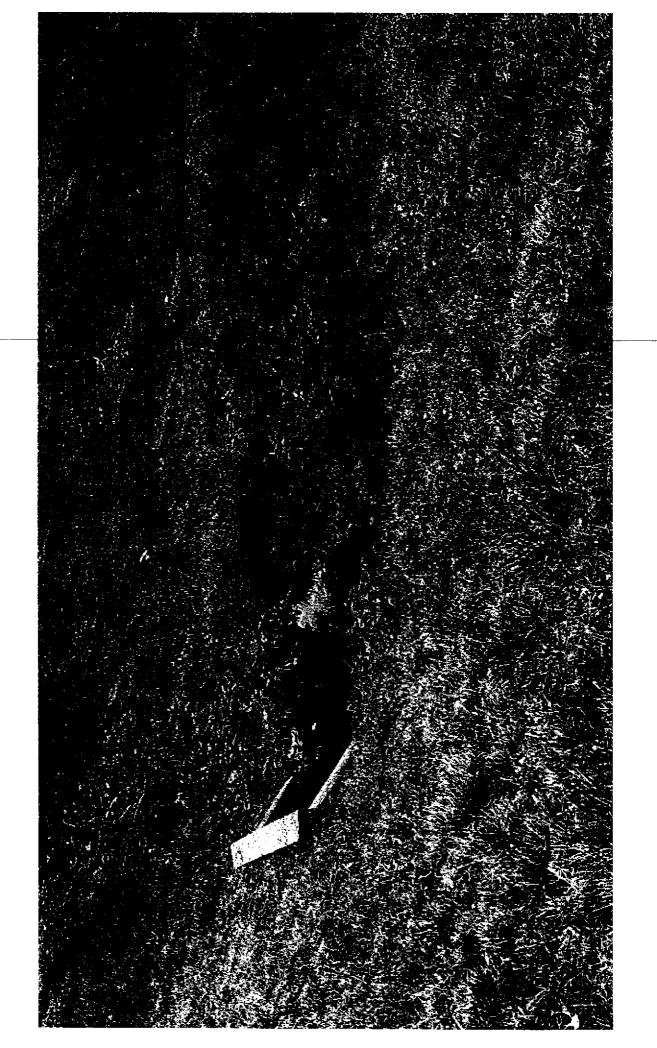
If you need any additional information or documentation, please don't hesitate to ask. As stated, follow up photographic documentation will follow immediately after to confirm countermeasures are in place. You may contact me at your convenience at 615-863-7041 or by email at Daniel.king@dornetic.com.

Sincerely

EHS/Lean Coordinator









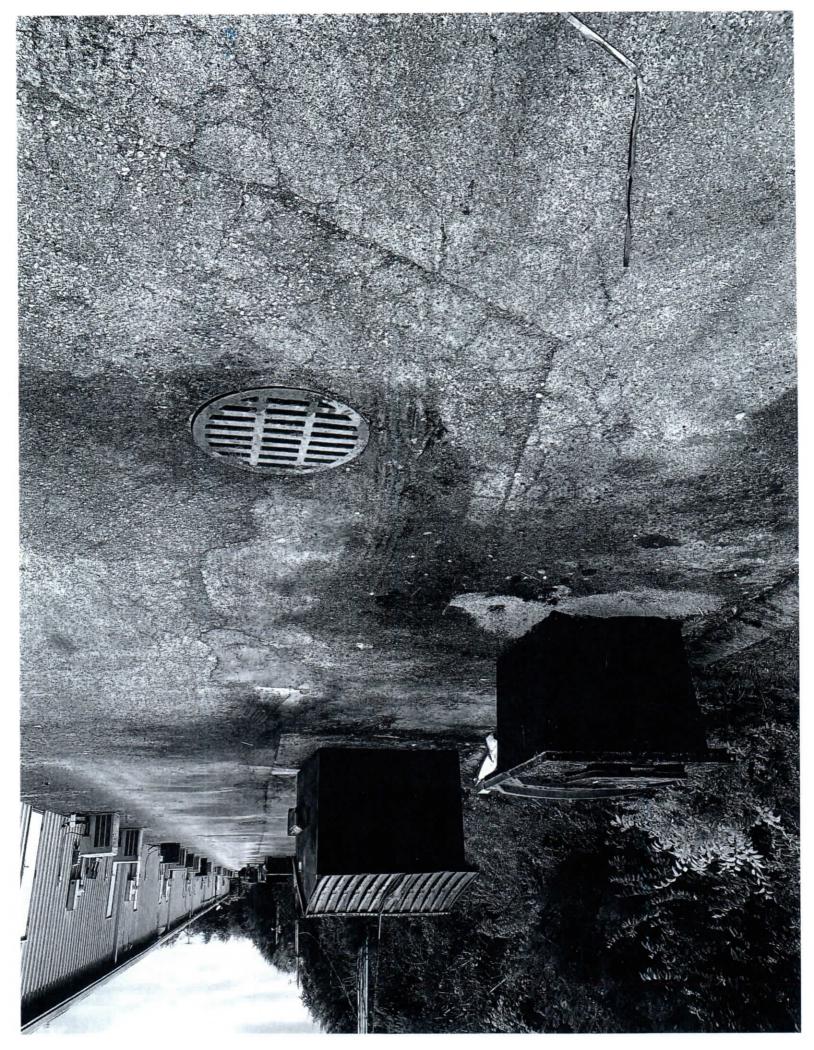
# **FRANKLIN CENTER**

## **SUPPORTING MATERIALS**

## ILLICIT DISCHARGE REPORT FORM

Date: May 25th 2021
Name: Carla Caustey
Department: Cooles
Phone:
What type of incident do you wish to report? (check all that apply)
Dumping Down a Storm Drain
Suspicious Discharge from a Pipe into a Stream
Unusual Color or Smell of Water in Stream
Suspicious Suds or other Substances Floating on Water
Construction Runoff
Where did the incident take place?
Address (if applicable): 2354 HWY 415.
Name of Closest Cross Street: Behind Franklin Conter (A)
Name of Body of Water Impacted: Bed Biver
Please provide a brief description of the illicit discharge and the area affected:  Grease from trap running into Storm drain
B, C, D,
Marath 3'093
Date of the Incident: May 25th 2021 ime of the Incident: 3:09 Plu
Pictures attached?
Please send this form along with any additional information and photographs to:
Alex West

Greenbrier, TN 37073







# **2246 OLD GREENBRIER PK**

## **SUPPORTING MATERIALS**

·		

# ILLICIT DISCHARGE REPORT FORM Date: Name: Department: Phone: What type of incident do you wish to report? (check all that apply) Dumping Down a Storm Drain Suspicious Discharge from a Pipe into a Stream Unusual Color or Smell of Water in Stream Suspicious Suds or other Substances Floating on Water Construction Runoff Where did the incident take place? 2246 Old Greenbrier PK Address (if applicable): Name of Closest Cross Street: Name of Body of Water Impacted: Please provide a brief description of the illicit discharge and the area affected:

Date of the Incident: \_\_\_\_\_ Time of the Incident: \_\_\_\_\_

Pictures attached? Yes

Please send this form along with any additional information and photographs to:

Alex West 790 W. College Street Greenbrier, TN 37073



## CITY OF GREENBRIER

P. O. BOX 466 • 790 W. COLLEGE STREET GREENBRIER, TENNESSEE 37073 PHONE (615) 643-4531 • FAX (615) 643-0357

May 27th, 2021

**Emily Clouse** 

2246 Old Greenbrier Pike

Greenbrier Tn, 37073

Subject:

Notice of Violation (Illicit Discharge)

2246 Old Greenbrier Pike

Greenbrier, Robertson County, TN

Dear Emily Clouse or whom it may concern,

The City of Greenbrier was contacted on May 27th, 2021 about an illicit discharge on the ground. The city did an onsite inspection on May 27<sup>th</sup>, 2021 and noted that the area in question was a moist area with no grass on it and is thought to be where the septic tank was located. The city has requested that the home owner seek a professional to locate and inspect the septic tank on the property. Illicit discharge of sewage is a violation of the City of Greenbrier Storm Water ordinance. A violation of an illicit discharge will need to be handled immediately. I will be doing a follow up visit on June 1st, 2021 to make sure the issue at hand was handled.

During the site visit the City observed the following items that require attention:

: A moist area of ground void of any grass above septic tank area.

The items listed above are not an all-inclusive list of items that were observed on site.

#### Please Submit the following items to the City of Greenbrier within the specified timeframe:

- Immediately seek a professional to locate and inspect for over filled or leaking septic tank.
- 2. Within 10 days of receipt of this letter, provide time-stamped photographic documentation showing issues above have been resolved.

Failure to remedy these violations within the specified timeframes may result in further actions, which will include a stop work order for the entire property, no more issuance of permits for the entire property, and monetary penalties of at least fifty (\$50) and no more than five thousand (\$5,000) dollars per day the violation remains. If you have any questions

regarding this correspondence, please contact me at (615) 642-0544 or by E-mail at <a href="mailto:awest@greenbriertn.org">awest@greenbriertn.org</a>.

Sincerely,

Alex West

Chili a lot

Facility Name:	Site Location:
2246 Old Greenbrier Pike	Robertson County
Photo No.	Date:
1	05/27/2021

Potential illicit Discharge.



WATERSHED:	SUBWATERSHED: N/A	UNIQUE STE	ID:	
DATE:/	ASSESSED BY: CAMERA ID:		PIC#: —	
MAP GRID: US & S	LATº' LONGº	_'"	LMK#	
A. SITE DATA AND BASIC CLASSIFICATIO				
Name and Address:	Category: Commercial Industrial Institutional Municipal Transport-Related	Miscellaneous Golf Cours Marina Animal Fac		
SIC code (if available):  NPDES Status:  Regulated Unknown	Basic Description of Operation:		INDE	EX*
B. VEHICLE OPERATIONS N/A (Skip to	part C)	Observed	Pollution Source?	
B1. Types of vehicles:   Fleet vehicles	School buses Other:			
B2. Approximate number of vehicles:				
B3. Vehicle activities (circle all that apply)	: Maintained Repaired Recycled Fueled W	ashed Stored	0	)
<b>B4.</b> Are vehicles stored and/or repaired outs Are these vehicles lacking runoff diversion			О	)
B5. Is there evidence of spills/leakage from	vehicles?  Y N Can't Tell			)
B6. Are uncovered outdoor fueling areas pr	esent? Y N Can't Tell		0	)
B7. Are fueling areas directly connected to	storm drains? Y N Can't Tell		С	)
B8. Are vehicles washed outdoors? Y  Does the area where vehicles are washed dis	N ☐ Can't Tell scharge to the storm drain? ☐ Y ☐ N ☐ Ca	n't Tell	С	)
C. OUTDOOR MATERIALS N/A (Skip t		Observed	Pollution Source?	
C1. Are loading/unloading operations presently ges, are they uncovered and draining tow		n't Tell	С	)
C2. Are materials stored outside? Y Where are they stored? grass/dirt area	N ☐ Can't Tell If yes, are they ☐ Liquid ☐ ☐ concrete/asphalt ☐ bermed area	Solid Description	on:	)
C3. Is the storage area directly or indirectly	connected to storm drain (circle one)?	N Can't T	ell C	)
C4. Is staining or discoloration around the	area visible?  Y N Can't Tell		С	)
C5. Does outdoor storage area lack a cover	? ☐ Y ☐ N ☐ Can't Tell		C	5
C6. Are liquid materials stored without sec	ondary containment? Y N Can't Te	II	C	5
	r in poor condition (rusting)?  Y N C		C	C
D. WASTE MANAGEMENT N/A (Skip	to part E)	Observed	Pollution Source?	
D1. Type of waste (check all that apply):	☐ Garbage ☐ Construction materials ☐ Haza	ardous materials	C	0
evidence of leakage (stains on ground)	ply): No cover/Lid is open Damaged/poor Overflowing	condition [	Leaking or C	0
D3. Is the dumpster located near a storm dr If yes, are runoff diversion methods (but	rain inlet?	11		<u>ာ</u>
E. PHYSICAL PLANT N/A (Skip to part	tF)	Observed	Pollution Source?	
	yrs. Condition of surfaces: Clean Starge to storm drains (staining/discoloration)?		_ Damaged	0
	ollution source; denotes confirmed po	Ilutar (aridanas	ura noon)	

		÷ ÷ .

E2. Parking Lot: Approximate age yrs. Condition:   Clean Stained Dirty Breaking up  Surface material Paved/Concrete Gravel Permeable Don't know												C	)				
E3. Do downspouts discharge to impervious surface? Y N Are downspouts directly connected to storm drains?		] Do Y	on't	kno N	w [	□ N Don	one 't kn	visit ow	ole							C	)
E4. Evidence of poor cleaning practices for construction activities (	(stair	ıs le	adii	ng to	sto	rm c	rain	)?[	] Y		N		Can'	Tel	1		)
F. TURF/LANDSCAPING AREAS   N/A (skip to part G)								_					tion		_		
F1.% of site with: Forest canopy% Turf grass% La	ındsc	apin	g _		%	Bare	Soi		%	,					T		5
F2. Rate the turf management status:  High  Medium  I				_											$\top$		5
F3. Evidence of permanent irrigation or "non-target" irrigation		N		Ca	n't	Tell									$\top$		5
F4. Do landscaped areas drain to the storm drain system?											十		5				
F5. Do landscape plants accumulate organic matter (leaves, grass clippings) on adjacent impervious surface?  Y N Can't Tell											$\top$		5				
G. STORM WATER INFRASTRUCTURE   N/A (skip to part H) Observed Pollution Source											·L						
G1. Are storm water treatment practices present?  Y N			n I	fye	s, p	lease	des	_				-			T		5
G2. Are private storm drains located at the facility? \( \subseteq Y \subseteq N \)  Is trash present in gutters leading to storm drains? If so, co	U	nkno	wn												†		<u> </u>
Index Rating for								_	_								
Clean	oi A	cun	luia	LIOII	III X	Juli	13		Filt	hy							
Sediment	<u> </u>					] 4					] 5						
Organic material					L	4				Ĺ	5 5	i					
G3. Catch basin inspection – Record SSD Unique Site ID here:	3		C	ondi	tion		Dirt	vΓ		lea		).					
H. INITIAL HOTSPOT STATUS - INDEX RESULTS				Olidi			Dill	, .		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							
☐ Not a hotspot (fewer than 5 circles and no boxes checked) ☐	Pote	ntial	ho	tspo	t (5	to 1	0 cir	cles	but	no	box	es c	heck	ed)			
Confirmed hotspot (10 to 15 circles and/or 1 box checked)															(de		
Follow-up Action:				$\top$	T						T	$\top$					
Refer for immediate enforcement		П						П				Т			П	$\top$	
Suggest follow-up on-site inspection  Test for illicit discharge		П						П									
Include in future education effort		П	$\neg$	$\top$	$\top$	$\top$		П			$\neg$	$\top$	$\top$		П	$\top$	$\top$
Check to see if hotspot is an NPDES non-filer		Н	$\exists$	$\top$	$\dagger$	$\top$	T	Н	$\neg$	$\neg$	$\neg$	$\top$	$\top$	$\vdash$	$\Box$	$\top$	$\top$
Onsite non-residential retrofit		Н	7	$\dashv$	$^{\dagger}$	+	+	Н		$\neg$	1	+	+	T	$\Box$	$\top$	+
Pervious area restoration; complete PAA sheet and record Unique Site ID here:		$\vdash$	$\dashv$	+	+	+	+	Н	$\dashv$	$\dashv$	$\dashv$	+	+	$\vdash$	$\vdash$	+	+
Schedule a review of storm water pollution prevention plan		Н	$\dashv$	+	+	+	+	Н	$\dashv$	$\dashv$	$\dashv$	+	+	$\vdash$	$\vdash$	$\dashv$	+
Notes:		$\vdash$	+	$\dashv$	+	+	+	Н	$\dashv$	$\dashv$	$\forall$	+	+	+	$\vdash$	$\dashv$	+
Notes:		H	$\dashv$	+	+	+	+	Н	$\dashv$	$\dashv$		+	+	+		+	+
		H		+	+	+	+	Н	H	$\dashv$	$\dashv$	+	+	+	$\vdash$	$\dashv$	+
		Н		$\dashv$	+	+	+	Н	$\forall$	$\dashv$	_	+	+	+	$\vdash$	$\dashv$	+
		$\forall$		1	+	+	+		$\forall$		$\dashv$	+	+	+	$\forall$	+	+
		H		+	+	+	+	$\vdash$	$\forall$	$\dashv$		+	+	+	$\vdash$	+	+
		$\vdash$		$\vdash$	+	+	+		Н	$\dashv$	$\dashv$	$\forall$	+	+	$\vdash$	$\dashv$	+
		$\vdash$		+	+	+	+		$\vdash$			+	+	+	$\vdash$	+	+
		$\forall$		$\vdash$	+	+	+		H			$\dashv$	+	+	Н	1	+
		H		$\forall$	+	+	T	$\vdash$	H	$\dashv$		$\top$	+		Н	1	+
								1									

		• •

Hotspot Site Investigation

**HSI** 

WATERSHED: ROOM	SUBWATERSHED: N/A	NIQUE STTE ID:	
DATE: \2/21/20	ASSESSED BY CAMERA ID: —	PIC#: —	
MAP GRID: US & S	LAT 36° 25'8,5" LONG 86°47 '	19." LMK# —	
A. SITE DATA AND BASIC CLASSIFICATION	N S		
Name and Address: Jut 2 wire  2337 Industrial Dr  Green rier In 32073	Institutional Municipal	scellaneous Golf Course Marina Animal Facility	
SIC code (if available):  NPDES Status:	Machine Shop		INDEX*
B. VEHICLE OPERATIONS N/A (Skip t	o part C)	Observed Pollution Sour	ce?
B1. Types of vehicles: The Fleet vehicles	School buses Other:		
B2. Approximate number of vehicles:	1		
	: Maintained Repaired Recycled Fueled Wash	ed Stored	0
<b>B4.</b> Are vehicles stored and/or repaired out Are these vehicles lacking runoff diversion	side? 🗗 Y 🔲 N 🔲 Can't Tell methods? 🔲 Y 💆 N 🔲 Can't Tell		0
B5. Is there evidence of spills/leakage from			0
B6. Are uncovered outdoor fueling areas p	resent? Y N Can't Tell		0
B7. Are fueling areas directly connected to	storm drains? Y N Can't Tell		0
B8. Are vehicles washed outdoors? Y Does the area where vehicles are washed di		[ell	0
C. OUTDOOR MATERIALS N/A (Skip		Observed Pollution Sour	ce?
C1. Are loading/unloading operations pres If yes, are they uncovered and draining tow		Γell	0
C2. Are materials stored outside? Y Where are they stored? grass/dirt area	N Can't Tell If yes, are they Liquid Soli	d Description:	0
	to the property of the second		
	y connected to storm drain (circle one)?  \( \subseteq \text{Y} \) \( \subseteq \text{N} \)	Can't Tell	0
C3. Is the storage area directly or indirectly	y connected to storm drain (circle one)? $\square$ Y $\square$ N	Can't Tell	
C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the	y connected to storm drain (circle one)?	Can't Tell	0
C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the C5. Does outdoor storage area lack a cover	y connected to storm drain (circle one)?	Can't Tell	0
C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the C5. Does outdoor storage area lack a cover C6. Are liquid materials stored without see	y connected to storm drain (circle one)?		0 0
C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the C5. Does outdoor storage area lack a cover C6. Are liquid materials stored without see	y connected to storm drain (circle one)?		0 0 0
C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the C5. Does outdoor storage area lack a cover C6. Are liquid materials stored without see C7. Are storage containers missing labels D. WASTE MANAGEMENT N/A (Skip	y connected to storm drain (circle one)?	t Tell  Observed Pollution Sour	0 0 0
C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the C5. Does outdoor storage area lack a cover C6. Are liquid materials stored without see C7. Are storage containers missing labels D. WASTE MANAGEMENT N/A (Skip D1. Type of waste (check all that apply): D2. Dumpster condition (check all that apply): evidence of leakage (stains on ground	y connected to storm drain (circle one)?	Tell  Observed Pollution Sour	0 0 0 0
C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the C5. Does outdoor storage area lack a cover C6. Are liquid materials stored without see C7. Are storage containers missing labels D. WASTE MANAGEMENT N/A (Skip D1. Type of waste (check all that apply): D2. Dumpster condition (check all that apply)	y connected to storm drain (circle one)?	Tell  Observed Pollution Sour	0 0 0 0 0
C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the C5. Does outdoor storage area lack a cover C6. Are liquid materials stored without see C7. Are storage containers missing labels D. WASTE MANAGEMENT N/A (Skip D1. Type of waste (check all that apply): D2. Dumpster condition (check all that apply): D3. Is the dumpster located near a storm of	y connected to storm drain (circle one)?	Tell  Observed Pollution Sour	0 0 0 0 0 0 0
C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the C5. Does outdoor storage area lack a cover C6. Are liquid materials stored without see C7. Are storage containers missing labels D. WASTE MANAGEMENT N/A (Skip D1. Type of waste (check all that apply): D2. Dumpster condition (check all that apply): D3. Is the dumpster located near a storm of If yes, are runoff diversion methods (b) E. PHYSICAL PLANT N/A (Skip to par E1. Building: Approximate age:	y connected to storm drain (circle one)?	Observed Pollution Sources Materials dition Leaking or  Observed Pollution Sources Director Damaged	0 0 0 0 0

7	TOT	
-	_	

E2. Parking Lot: Approximate age yrs. Condition: _ Clean _ Stained _ Dirty _ Breaking up Surface material _ Paved/Concrete _ Gravel _ Permeable _ Don't know											T	O	)					
E3. Do downspouts discharge to impervious surface? Y N Are downspouts directly connected to storm drains?		Doi	n't 1	kno N	w [	□ N Don	one 't kr	visil ow	ole	Re	2+	R	on	d			С	)
E4. Evidence of poor cleaning practices for construction activities (	stains	lea	din	g to	sto	rm (	Irain	)?[	] Y	X	N		Car	ı't 7	Γell		C	)
F. TURF/LANDSCAPING AREAS   N/A (skip to part G)													ıtioı					
F1.% of site with: Forest canopy% Turf grass% Landscaping 50 % Bare Soil%											T	C	)					
F2. Rate the turf management status:  High Medium Low											十	C	)					
F3. Evidence of permanent irrigation or "non-target" irrigation Y N Can't Tell											I	С	)					
F4. Do landscaped areas drain to the storm drain system?												C	)					
F5. Do landscape plants accumulate organic matter (leaves, grass clippings	s) on a	djac	ent	imp	ervi	ous s	urfa	:e? [	] Y	P	N		Can	't T	ell		C	)
G. STORM WATER INFRASTRUCTURE   N/A (skip to par													utio			ce?	L	
G1. Are storm water treatment practices present?	Unkn	owi	n I	f ye	s, p	leas	des	crib	e: _							Τ	С	)
G2. Are private storm drains located at the facility? Y N Is trash present in gutters leading to storm drains? If so, co	Unk	cnov	wn ie ii	nde	c be	low											С	)
Index Rating fo																		
Clean						_			Filt	hy								
Sediment 2	] 3				L	4				Ĺ								
Organic material         □ 1         □ 2         □ 3         □ 4         □ 5           Litter         □ 1         □ 2         □ 3         □ 4         □ 5																		
G3. Catch basin inspection – Record SSD Unique Site ID here:			Co	ondi	tior	: 🗆	Dir	ty [		Clea	n							
H. INITIAL HOTSPOT STATUS - INDEX RESULTS																		
☐ Not a hotspot (fewer than 5 circles and no boxes checked) ☐	Potent	tial	hot	spo	t (5	to	0 ci	rcles	but	no	box	xes (	chec	ke	d)			
Confirmed hotspot (10 to 15 circles and/or 1 box checked)																ed)		
Follow-up Action:																		
Refer for immediate enforcement																		
Suggest follow-up on-site inspection  Test for illicit discharge	$\Box$		T	$\neg$	7													
Include in future education effort	$\Box$	$\top$	$\top$	$\top$	$\top$	$\top$	$\top$					$\neg$	$\top$	$\neg$	$\top$	$\top$	$\top$	$\top$
Check to see if hotspot is an NPDES non-filer	$\vdash$	+	+	+	+	+	+				$\neg$		$\top$	$\dashv$	$\dashv$	$\top$	+	+
Onsite non-residential retrofit	H	+	+	+	+	+	+	$\vdash$	$\vdash$		$\dashv$		+	+	+	+	+	+
Pervious area restoration; complete PAA sheet and record	H	+	+	+	+	+	+	$\vdash$	$\vdash$		$\vdash$	$\dashv$	+	$\dashv$	$\dashv$	$\dashv$	+	+
Unique Site ID here:  Schedule a review of storm water pollution prevention plan	$\vdash$	+	+	_	$\dashv$	+	+	$\vdash$	Н		-	$\vdash$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	+	+
Schedule a review of storm water portution prevention plan	$\sqcup$	_	4	_	4	_	_	┡	Ш				$\dashv$	_	$\dashv$	$\dashv$	+	_
Notes:				_		_	$\perp$		Ш				$\dashv$	$\dashv$	_	$\dashv$	$\perp$	$\perp$
																_	_	$\perp$
	П							Т										
	$\Box$	$\neg$	$\neg$		$\neg$	$\top$	$\top$	$\top$					П					
	$\Box$	$\top$	1	7	$\neg$	$\top$	$\top$		П			П		$\neg$	$\neg$	$\dashv$	$\top$	$\top$
	$\vdash$	+	1	$\dashv$	$\dashv$	+	+	+	Н	_			$\Box$	$\dashv$		7	$\top$	$\top$
	$\vdash$	+		$\dashv$	$\dashv$	+	+		$\vdash$				H		$\dashv$	$\forall$	$\top$	+
		$\dashv$		$\dashv$	$\dashv$	+	+	T	$\vdash$				$\sqcap$		$\sqcap$	$\neg$		$\top$
									1	_	1	_						

# Hotspot Site Investigation

HSI

WATERSHED: Rod River	SUBWATERSHED: N/A	I	UNIQUE SITE ID:				
DATE: 2/5/20	ASSESSED BY: CAMERA ID: PIC#:-						
MAP GRID: US & S	LAT 36 26 139 "L	ong 86 • 45 1	45" LMK#				
A. SITE DATA AND BASIC CLASSIFICATION							
Name and Address: Jean Harbon 2805 Old Harry Greenbrief In 37073	Category: Commercial Institutional Transport-Re	Municipal Lated	iscellaneous   Golf Course   Marina   Animal Facility				
SIC code (if available):  NPDES Status:  Regulated	Basic Description of Operation	on:					
Unregulated Unknown				INDEX*			
B. VEHICLE OPERATIONS N/A (Skip t	o part C)		Observed Pollution Sou	rce?			
B1. Types of vehicles:  Fleet vehicles	School buses Other: 77	actor Trai		T			
B2. Approximate number of vehicles:	5			1			
B3. Vehicle activities (circle all that apply)	: Maintained Repaired Recycle	d Fueled Wash	d Stored	0			
B4. Are vehicles stored and/or repaired outs				0			
Are these vehicles lacking runoff diversion methods? Y Y Can't Tell							
B5. Is there evidence of spills/leakage from		10 10 10 10 10 10 10 10 10 10 10 10 10 1		0			
B6. Are uncovered outdoor fueling areas pr				0			
B7. Are fueling areas directly connected to		an't Tell		0			
B8. Are vehicles washed outdoors? Y Does the area where vehicles are washed di		□ N □ Can't T	'ell	0			
C. OUTDOOR MATERIALS N/A (Skip to part D)  Observed Pollution Sour							
			Observed Pollution Sou	rce:			
C1. Are loading/unloading operations prese	ent? Y N Can't Tell	1	Observed Ponution Sou	T .			
C1. Are loading/unloading operations prese If yes, are they uncovered and draining tow	ent? Y N Can't Tell	₩N □ Can't 1	ell ell	O			
C1. Are loading/unloading operations prese	ent? Y N Can't Tell vards a storm drain inlet? Y  Can't Tell  If yes, are they	Liquid Solid	ell ell	T .			
C1. Are loading/unloading operations presently yes, are they uncovered and draining tow	ent? Y N Can't Tell yards a storm drain inlet? Y  N Can't Tell  If yes, are they  concrete/asphalt  bermed are	☐ Liquid ☐ Solicea	Cell d Description:	0			
C1. Are loading/unloading operations presently sets, are they uncovered and draining tow C2. Are materials stored outside? Y Where are they stored? grass/dirt area	ent? Y N Can't Tell yards a storm drain inlet? Y N Can't Tell If yes, are they concrete/asphalt bermed are	☐ Liquid ☐ Solicea	Cell d Description:	0			
C1. Are loading/unloading operations presently yes, are they uncovered and draining tow C2. Are materials stored outside? Y Where are they stored? grass/dirt area C3. Is the storage area directly or indirectly	ent? Y N Can't Tell yards a storm drain inlet? Y N Can't Tell If yes, are they concrete/asphalt bermed are connected to storm drain (circle on area visible? Y N Car	□ Liquid □ Solidea ea e)? □ Y □N	Cell d Description:	0 0			
C1. Are loading/unloading operations presently ses, are they uncovered and draining tow C2. Are materials stored outside? Y Where are they stored? grass/dirt area C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the a	ent? Y N Can't Tell yards a storm drain inlet? Y N Can't Tell If yes, are they concrete/asphalt bermed are connected to storm drain (circle on area visible? Y N Can't Tell	Liquid Solidea e)? Y N n't Tell	Cell d Description:	0 0 0			
C1. Are loading/unloading operations preset If yes, are they uncovered and draining tow C2. Are materials stored outside? Y Where are they stored? grass/dirt area C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the a C5. Does outdoor storage area lack a cover	ent? Y N Can't Tell yards a storm drain inlet? Y N Can't Tell If yes, are they concrete/asphalt bermed are connected to storm drain (circle on area visible? Y N Can't Tell ondary containment? Y	Liquid Solidea  e)? Y N  n't Tell  Can't Tell	Can't Tell	0 0 0			
C1. Are loading/unloading operations preset If yes, are they uncovered and draining tow C2. Are materials stored outside? Y Where are they stored? grass/dirt area C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the a C5. Does outdoor storage area lack a cover C6. Are liquid materials stored without second	ent? Y N Can't Tell yards a storm drain inlet? Y N Can't Tell If yes, are they concrete/asphalt bermed are connected to storm drain (circle on area visible? Y N Car Y N Can't Tell ondary containment? Y N or in poor condition (rusting)? Y	Liquid Solidea  e)? Y N  n't Tell  Can't Tell	Can't Tell	0 0 0 0 0 0			
C1. Are loading/unloading operations presently yes, are they uncovered and draining tow C2. Are materials stored outside? Y Where are they stored? grass/dirt area C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the a C5. Does outdoor storage area lack a cover C6. Are liquid materials stored without second.	ent? Y N Can't Tell yards a storm drain inlet? Y N Can't Tell If yes, are they concrete/asphalt bermed are connected to storm drain (circle on area visible? Y N Can't Tell ondary containment? Y N or in poor condition (rusting)? Y to part E)	Liquid Solidea  e)? Y N  1't Tell  Can't Tell  Can't Can't	Can't Tell  Charter Pollution Sou	0 0 0 0 0 0			
C1. Are loading/unloading operations preset If yes, are they uncovered and draining tow C2. Are materials stored outside? Y Where are they stored? grass/dirt area C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the a C5. Does outdoor storage area lack a cover C6. Are liquid materials stored without seed C7. Are storage containers missing labels of D. WASTE MANAGEMENT N/A (Skip D1. Type of waste (check all that apply): D2. Dumpster condition (check all that apply evidence of leakage (stains on ground)	ent? Y N Can't Tell rards a storm drain inlet? Y  N Can't Tell If yes, are they concrete/asphalt bermed are connected to storm drain (circle on area visible? Y N Can't Tell condary containment? Y N Can't Tell condary containment? Y N  or in poor condition (rusting)? Y  to part E)  Garbage Construction mate	Liquid Solidea  e)? Y N  1't Tell  Can't Tell  Can't Tell  Hazardou  crials Hazardou  Damaged/poor conc	Can't Tell  Can't Tell  Observed Pollution Sou	0 0 0 0 0			
C1. Are loading/unloading operations preset If yes, are they uncovered and draining tow C2. Are materials stored outside? Y Where are they stored? grass/dirt area C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the a C5. Does outdoor storage area lack a cover C6. Are liquid materials stored without sec C7. Are storage containers missing labels of D. WASTE MANAGEMENT N/A (Skip D1. Type of waste (check all that apply): D2. Dumpster condition (check all that apply evidence of leakage (stains on ground) D3. Is the dumpster located near a storm dr	ent? Y N Can't Tell rards a storm drain inlet? Y  N Can't Tell If yes, are they concrete/asphalt bermed are connected to storm drain (circle on area visible? Y N Can't Tell ondary containment? Y N  r in poor condition (rusting)? Y  to part E)  Garbage Construction mate ply): No cover/Lid is open D Overflowing Overflowing	Liquid Solidea  e)? Y N  n't Tell  Can't Tell  Can't  Trials Hazardou  Damaged/poor cond	Can't Tell  Can't Tell  Observed Pollution Sou	0 0 0 0 0 0			
C1. Are loading/unloading operations preset If yes, are they uncovered and draining tow C2. Are materials stored outside? Y Where are they stored? grass/dirt area C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the a C5. Does outdoor storage area lack a cover C6. Are liquid materials stored without seed C7. Are storage containers missing labels of D. WASTE MANAGEMENT N/A (Skip D1. Type of waste (check all that apply): D2. Dumpster condition (check all that apply evidence of leakage (stains on ground)	ent? Y N Can't Tell rards a storm drain inlet? Y  N' Can't Tell If yes, are they concrete/asphalt bermed are connected to storm drain (circle on area visible? Y N Can't Tell condary containment? Y N  or in poor condition (rusting)? Y  to part E)  Garbage Construction mate ply): No cover/Lid is open D  Overflowing Overflowing rain inlet? Y N Can't Tell cerms, curbs) lacking? Y	Liquid Solidea  e)? Y N  n't Tell  Can't Tell  Can't  Trials Hazardou  Damaged/poor cond	Can't Tell  Can't Tell  Observed Pollution Sou	0 0 0 0 0 0 0			
C1. Are loading/unloading operations presently yes, are they uncovered and draining tow C2. Are materials stored outside? Y Where are they stored? grass/dirt area C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the a C5. Does outdoor storage area lack a cover C6. Are liquid materials stored without sec C7. Are storage containers missing labels of D. WASTE MANAGEMENT N/A (Skip D1. Type of waste (check all that apply): D2. Dumpster condition (check all that apply): D3. Is the dumpster located near a storm draining the difference of leakage (stains on ground) D3. Is the dumpster located near a storm draining the difference of leakage (stains on ground) D3. Is the dumpster located near a storm draining the difference of leakage (stains on ground) D3. Is the dumpster located near a storm draining the difference of leakage (stains on ground) D3. Is the dumpster located near a storm draining the difference of leakage (stains on ground) D3. Is the dumpster located near a storm draining the difference of leakage (stains on ground) D3. Is the dumpster located near a storm draining the difference of leakage (stains on ground) D3. Is the dumpster located near a storm draining the difference of leakage (stains on ground) D3. Is the dumpster located near a storm draining the difference of leakage (stains on ground) D3. Is the dumpster located near a storm draining the difference of leakage (stains on ground) D3. Is the dumpster located near a storm draining the difference of leakage (stains on ground) D3. Is the dumpster located near a storm draining the difference of leakage (stains on ground) D3. Is the dumpster located near a storm draining the data draining the dat	ent? Y N Can't Tell yards a storm drain inlet? Y  N Can't Tell If yes, are they concrete/asphalt bermed are connected to storm drain (circle on area visible? Y N Car  Y N Can't Tell ondary containment? Y N  or in poor condition (rusting)? Y  to part E)  Garbage Construction mate ply): No cover/Lid is open D  Overflowing Overflowing? Y  to part E)  Overflowing Overflowing? Y  to part E)	Liquid Solidea  e)? Y N  n't Tell  Can't Tell	Can't Tell  Can't Tell  Observed Pollution Sources materials  Leaking or Color of Co	0 0 0 0 0 0 0			
C1. Are loading/unloading operations preset If yes, are they uncovered and draining tow C2. Are materials stored outside? Y Where are they stored? I grass/dirt area C3. Is the storage area directly or indirectly C4. Is staining or discoloration around the a C5. Does outdoor storage area lack a cover C6. Are liquid materials stored without sec C7. Are storage containers missing labels of D. WASTE MANAGEMENT N/A (Skip D1. Type of waste (check all that apply): D2. Dumpster condition (check all that apply): D3. Is the dumpster located near a storm dr If yes, are runoff diversion methods (be	ent? Y N Can't Tell rards a storm drain inlet? Y  N Can't Tell If yes, are they concrete/asphalt bermed are connected to storm drain (circle on area visible? Y N Can't Tell condary containment? Y N  or in poor condition (rusting)? Y  to part E)  Garbage Construction mate ply): No cover/Lid is open D  Overflowing Overflowing rain inlet? Y N Can't Tell crms, curbs) lacking? Y N  or F)  yrs. Condition of surfaces:	Liquid Solidea  e)? Y N  1't Tell  Can't Tell	Can't Tell  Can't Tell  Observed Pollution Sources materials  Leaking or Up O J O  Observed Pollution Sources Dirty Damaged	0 0 0 0 0 0 0 0 0 0			



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E2. Parking Lot: Approximate age yrs. Condition:											0						
E3. Do downspouts discharge to impervious surface? Y Y Are downspouts directly connected to storm drains?	N [	] D Y	on'	t kno				visi		S	or	ne	2				0
E4. Evidence of poor cleaning practices for construction activities	_									, [	] N		Can	'ιΤ	ell		0
F. TURF/LANDSCAPING AREAS N/A (skip to part G)								T	hs	erv	ed l	Pall	ution	So	nrc	27	
F1.% of site with: Forest canopy% Turf grass% Landscaping% Bare Soil%										_	0						
F2. Rate the turf management status:  High  Medium  Low											ŏ						
F3. Evidence of permanent irrigation or "non-target" irrigation Y N Can't Tell										_	ŏ						
F4. Do landscaped areas drain to the storm drain system?											ŏ						
F5. Do landscape plants accumulate organic matter (leaves, grass clipping								ice?[	٦٢	γ Γ	٦N	П	Can'	t Te	-11		ŏ
G. STORM WATER INFRASTRUCTURE   N/A (skip to po						1041	Dat II	$\overline{}$			_			_	_	$\overline{}$	$\widetilde{}$
G1. Arc storm water treatment practices present? YNN			ı/n	Ifva		lan	a da				ea i	Poll	utior	1 50	urce	_	<del></del>
G2. Are private storm drains located at the facility? Y N					,s, <u>F</u>	nca:	ic uc	SCIID	·	_					-		
Is trash present in gutters leading to storm drains? If so, c					x b	clov	<i>'</i> .										0
Index Rating f																	
Clean									Filt	hy							
Sediment					[	4				٦	<u>_</u> :	5					
Organic material					I	4   4				L	= :	5					
G3. Catch basin inspection - Record SSD Unique Site ID here:			C	ond	itio	n: [	Dir	tv [	٦٥	Clea	n -						
H. INITIAL HOTSPOT STATUS - INDEX RESULTS				ona			1011	., .		Jieu							
☐ Not a hotspot (fewer than 5 circles and no boxes checked) ☐	Pote	ntia	l ho	tspo	t (:	5 to	10 ci	rcles	but	no	boz	xes (	check	ced)			
Confirmed hotspot (10 to 15 circles and/or 1 box checked)																)	
Follow-up Action:				Т	Т	T	Т		П	П		П	Т	T	T		$\top$
Refer for immediate enforcement		П		$\neg$	$\top$	$\top$	$\top$	П		寸	П	$\neg$	$\top$		$\top$	П	$\top$
Suggest follow-up on-site inspection  Test for illicit discharge		П	$\neg$	$\neg$	$\forall$	$\top$	+	П		$\neg$	$\exists$		$\top$	+	+	П	$\top$
Include in future education effort		Н	$\forall$	$\neg$	$\forall$	$\top$	+	Н		$\dashv$		$\dashv$	+	+	+	$\vdash$	+
Check to see if hotspot is an NPDES non-filer		$\vdash$		+	+	+	+	$\vdash$	+	$\dashv$	-	+	+	+	+	$\vdash$	+
Onsite non-residential retrofit		H	-	+	+	+	+	$\vdash$	+	$\dashv$	$\dashv$	+	+	+	+	$\vdash$	+
Pervious area restoration; complete PAA sheet and record Unique Site ID here:		Н	$\dashv$	$\dashv$	$\dashv$	+	+	$\vdash$	$\dashv$	$\dashv$	$\dashv$	-	+	+	+	$\vdash$	+
Schedule a review of storm water pollution prevention plan		Н	$\dashv$	+	+	+	+	$\vdash$	$\vdash$	$\dashv$	$\dashv$	+	+	+	+	Н	+
N.	-	Н	$\dashv$	+	+	+	+	$\vdash$	$\vdash$	+	$\dashv$	+	+	+	+	Н	+
Notes:	-	H	$\dashv$	$\dashv$	$\dashv$	+	+	$\vdash$	$\dashv$	$\dashv$	-	-	+	+	+	Н	+
	$\vdash$	Н	$\dashv$	$\dashv$	+	+	+	$\vdash$	$\vdash$	+	_	-	_	+	+	$\vdash$	+
		Н	$\dashv$	-	$\dashv$	+	+	$\vdash$	$\vdash$	$\dashv$	$\dashv$	$\dashv$	+	+	+	$\vdash$	+
	$\vdash$	Н	$\dashv$	$\dashv$	+	+	+		$\vdash$	$\dashv$	$\dashv$	$\dashv$	+	+	+	Н	+
	$\vdash$	Н	$\dashv$	-	$\dashv$	+	+	$\vdash$	$\vdash$	$\dashv$	$\dashv$	-	+	+	+	Н	+
	$\vdash$	$\vdash$	_	$\dashv$	$\dashv$	+	+		$\vdash$	-	_	-	+	+	+	$\vdash$	_
	-	$\vdash$		-	$\dashv$	+	+	$\vdash$		_		$\dashv$	+	+	+	$\vdash$	+
	-	$\vdash$		-	-	4	$\perp$		Ц	_		$\perp$	_	+	+	$\sqcup$	$\perp$
	$\vdash$	$\vdash \vdash$		$\dashv$	_	_	$\perp$			4			$\perp$	+	+	$\sqcup$	$\perp$

## Hotspot Site Investigation

HSI

WATERSHED: ROOK	SUBWATERSHED: N/A	UNIQUE STTE ID:				
DATE: 201/20	ASSESSED BY CAMERA ID: -	- Pic#: -				
MAP GRID: US GOS	LAT 36° 25 1/14" LONG 26° 47	2:39" LMK#				
A. SITE DATA AND BASIC CLASSIFICATI						
Name and Address: HHIVY	Institutional Municipal Transport-Related	Miscellaneous  Golf Course  Marina Animal Facility				
SIC code (if available):	Basic Description of Operation:					
NPDES Status: Regulated Unregulated Unknown			INDEX*			
B. VEHICLE OPERATIONS N/A (Skip	to part C)	Observed Pollution Sou	ırce?			
B1. Types of vehicles:   Fleet vehicles	School buses Other:		T			
B2. Approximate number of vehicles:			┪			
B3. Vehicle activities (circle all that apply	y): Maintained Repaired Recycled Fueled Wa	shed Stored	0			
B4. Are vehicles stored and/or repaired ou			0			
Are these vehicles lacking runoff diversion			+ ~			
B5. Is there evidence of spills/leakage from			0			
B6. Are uncovered outdoor fueling areas present? Y N Can't Tell						
B7. Are fueling areas directly connected to storm drains? Y N Can't Tell						
B8. Are vehicles washed outdoors? Y	☐ N ☐ Can't Tell  discharge to the storm drain? ☐ Y ☐ N ☐ Can'	t Tell	0			
C. OUTDOOR MATERIALS N/A (Skip to part D)  Observed Pollution Source						
C1. Are loading/unloading operations pre	sent? Y Y Can't Tell	00000 700 10000000000000000000000000000	T -			
If yes, are they uncovered and draining to	wards a storm drain inlet? YNCan	't Tell	0			
C2. Are materials stored outside? Y [ Where are they stored? Grass/dirt area	□ N □ Can't Tell If yes, are they □ Liquid ☐ Se □ concrete/asphalt □ bermed area	olid Description:	) 0			
C3. Is the storage area directly or indirect	ly connected to storm drain (circle one)? 🔲 Y 📉	N Can't Tell	0			
C4. Is staining or discoloration around the	area visible? 🗌 Y 📈 N 🔲 Can't Tell		0			
C5. Does outdoor storage area lack a cove	er? XY N Can't Tell		0			
C6. Are liquid materials stored without se	condary containment? Y XN Can't Tell		0			
C7. Are storage containers missing labels	or in poor condition (rusting)? TYN Ca	n't Tell	0			
D. WASTE MANAGEMENT N/A (Ski	p to part E)	Observed Pollution So	urce?			
D1. Type of waste (check all that apply)	Garbage Construction materials Hazar	dous materials	0			
D2. Dumpster condition (check all that a evidence of leakage (stains on ground	pply): No cover/Lid is open Damaged/poor co		0			
D2. Dumpster condition (check all that a evidence of leakage (stains on ground D3. Is the dumpster located near a storm	pply): No cover/Lid is open Damaged/poor cod) Overflowing drain inlet? YNN Can't Tell					
D2. Dumpster condition (check all that a evidence of leakage (stains on ground D3. Is the dumpster located near a storm	pply): No cover/Lid is open Damaged/poor cod) Overflowing drain inlet? YNN Can't Tell berms, curbs) lacking? YNN Can't Tell		0			
D2. Dumpster condition (check all that a evidence of leakage (stains on ground D3. Is the dumpster located near a storm If yes, are runoff diversion methods (E. PHYSICAL PLANT N/A (Skip to page 1).	pply): No cover/Lid is open Damaged/poor cod) Overflowing drain inlet? Y N Can't Tell berms, curbs) lacking? Y N Can't Tell	Observed Pollution So	0			
D2. Dumpster condition (check all that a evidence of leakage (stains on ground D3. Is the dumpster located near a storm of the state of	pply): No cover/Lid is open Damaged/poor cod) Overflowing drain inlet? YNN Can't Tell berms, curbs) lacking? YNN Can't Tell	Observed Pollution So	O O urce?			

		<b>√</b>

2.4																	
E2. Parking Lot: Approximate age yrs. Condition: Clean Stained Dirty Breaking up Surface material Paved/Concrete Gravel Permeable Don't know												0					
E3. Do downspouts discharge to impervious surface? Y N  Are downspouts directly connected to storm drains?	-	Do Y	on't	kno N	w	D <sub>0</sub>	None n't k	visi now	ble								0
E4. Evidence of poor cleaning practices for construction activities (										V	N		Car	't T	`ell		0
F. TURF/LANDSCAPING AREAS N/A (skip to part G)  Observed Pollution Source										e?							
F1.% of site with: Forest canopy% Turf grass% Landscaping% Bare Soil%											Г	0					
F2. Rate the turf management status:  High  Medium  Low											0						
F3. Evidence of permanent irrigation or "non-target" irrigation Y Y Can't Tell											0						
F4. Do landscaped areas drain to the storm drain system?										$\vdash$	0						
F5. Do landscape plants accumulate organic matter (leaves, grass clippings	s) on	adja	cen	t imp	perv	ious	surfa	ace?		ΥC	] N		Can	't T	ell		0
G. STORM WATER INFRASTRUCTURE N/A (skip to par								$\overline{}$							ourc	e?	
G1. Arc storm water treatment practices present?  Y N	Unk	now	vn l	If ye	s, p	leas	se de										0
G2. Are private storm drains located at the facility? Y N Is trash present in gutters leading to storm drains? If so, co	Un	kno	own														0
Index Rating fo										_				_			
Clean	1 /10	Cuii	7414			Gut			Fil	thy							
Sediment	] 3				[					[	<u></u>	5					
Organic material	$\frac{1}{3}$				ļ	4	l I			l I	= 5	5					
G3. Catch basin inspection – Record SSD Unique Site ID here:			C	ond	itio	n· [	Di	rtv	П	Clea	n -	,					
H. INITIAL HOTSPOT STATUS - INDEX RESULTS																	
☐ Not a hotspot (fewer than 5 circles and no boxes checked) ☐ I	Poter	ntia	l ho	tspc	ot (:	5 to	10 c	ircle	s bu	t no	bo	xes (	chec	ked	)		
☐ Confirmed hotspot (10 to 15 circles and/or 1 box checked) ☐ 5																i)	
Follow-up Action:													$\perp$				
Refer for immediate enforcement																	
Suggest follow-up on-site inspection  Test for illicit discharge																	
Include in future education effort														T			
Check to see if hotspot is an NPDES non-filer																	
Onsite non-residential retrofit Pervious area restoration; complete PAA sheet and record	П							T									
Unique Site ID here:	П					$\neg$	$\top$						$\neg$	$\top$	$\top$	T	$\sqcap$
Schedule a review of storm water pollution prevention plan	П					$\Box$		$\top$						$\top$	$\top$	$\top$	$\sqcap$
Notes:	П					$\Box$	$\top$	$\top$					$\top$		$\top$	$\top$	
	П	П				$\exists$	$\top$	$\top$					$\neg$	$\top$	$\top$	$\top$	$\Box$
																$\top$	
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									Т							T	
				П		$\neg$	$\top$	$\top$	T						$\top$	T	$\Box$
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# • APPENDIX D: CONSTRUCTION SITE STORMWATER RUNOFF POLLUTANT CONTROL

## **SUPPORTING MATERIALS**

#### SECTION 3. LAND DISRURBANCE PERMITS.

- (1). When required.
  - (a) Every person will be required to obtain a land disturbance permit from the City of Greenbrier in the following cases:
    - (1) Land disturbing activity disturbs one-forth (1/4) or more acres of land;
    - (2) Land disturbing activity of less than one-forth (1/4) acre of land if such activity is part of a larger common plan of development that affects one-forth (1/4) or more acre of land;
    - (3) Land disturbing activity of less than one-forth (1/4) acre of land, if in the discretion of the City of Greenbrier such activity poses a unique threat to water, or public health or safety;
    - (4) The creation and use of borrow pits.
- (2). Building permit. No building permit shall be issued until the applicant has obtained a land disturbance permit where the same is required by this ordinance.
- (3). Exemptions. The following activities are exempt from the permit requirement:
  - (a) Any emergency activity that is immediately necessary for the protection of life, property, or natural resources.
  - (b) Existing nursery and agricultural operations conducted as a permitted main or accessory use.
  - (c) Any logging or agricultural activity that is consistent with an approved farm conservation plan or a timber management plan prepared or approved by the State of Tennessee.
  - (d) Additions or modifications to existing single family structures.

- (4). Application for a land disturbance permit.
  - (a) Each application shall include the following:
    - (1) Name of applicant;
    - (2) Business or residence address of applicant;
    - (3) Name, address and telephone number of the owner of the property of record in the office of the assessor of property;
    - (4) Address and legal description of subject property including the tax reference number and parcel number of the subject property;
    - (5) Name, address and telephone number of the contractor and any subcontractor(s) who shall perform the land disturbing activity and who shall implement the erosion and sediment control plan;
    - (6) A statement indicating the nature, extent and purpose of the land disturbing activity including the size of the area for which the permit shall be applicable and a schedule for the starting and completion dates of the land disturbing activity.
    - (7) Where the property includes a sinkhole, the applicant shall obtain from the Tennessee Department of Environment and Conservation appropriate permits.
    - (8) The applicant shall obtain from any other state or federal agency any other appropriate environmental permits that pertain to the property. However, the inclusion of those permits in the application shall not foreclose the City of Greenbrier from imposing additional development requirements

and conditions, commensurate with this ordinance, on the development of property covered by those permits.

- (b) Each application shall be accompanied by:
  - (1) A sediment and erosion control plan as described in §5(5).
  - (2) A stormwater management plan as described in §5(4), providing for stormwater management during the land disturbing activity and after the activity has been completed.
  - (3) Each application for a land disturbance permit shall be accompanied by payment of land disturbance permit and other stormwater management fees, which shall be set by resolution or ordinance.
- (5). Review and approval of application.
  - (a) The Building and Codes Official will review each application for a land disturbance permit to determine its conformance with the provisions of this ordinance. Within 7 days after receiving an application, the Building and Codes Official shall provide one of the following responses in writing:
    - (1) Approval of the permit application;
    - (2) Approval of the permit application, subject to such reasonable conditions as may be necessary to secure substantially the objectives of this ordinance, and issue the permit subject to these conditions; or
    - (3) Denial of the permit application, indicating the reason(s) for the denial.
  - (b) If the City of Greenbrier has granted conditional approval of the permit, the applicant shall submit a revised plan that conforms to the conditions established by the City of Greenbrier. However, the applicant shall be allowed to proceed

with his land disturbing activity so long as it conforms to conditions established by the City of Greenbrier.

- (c) No development plans will be released until the land disturbance permit has been approved.
- (6). Permit duration.

Every land disturbance permit shall expire and become null and void if substantial work authorized by such permit has not commenced within one hundred eighty (180) calendar days of issuance, or is not complete within eighteen (18) months from the date of the commencement of construction.

(7). Notice of construction.

The applicant must notify the Building and Codes Official ten (10) working days in advance of the commencement of construction. Regular inspections of the stormwater management system construction shall be conducted by the Building and Codes Official. All inspections shall be documented and written reports prepared that contain the following information:

- (1) The date and location of the inspection;
- (2) Whether construction is in compliance with the approved stormwater management plan;
- (3) Variations from the approved construction specifications;
- (4) Any violations that exist.
- (8). Performance bonds.
  - (a) The City of Greenbrier may, at its discretion, require the submittal of a performance security or performance bond prior to issuance of a permit in order

to ensure that the stormwater practices are installed by the permit holder as required by the approved stormwater management plan. The amount of the installation performance security or performance bond shall be the total estimated construction cost of the structural BMPs approved under the permit plus any reasonably foreseeable additional related costs, e.g., for damages or enforcement. The performance security shall contain forfeiture provisions for failure to complete work specified in the stormwater management plan. The applicant shall provide an itemized construction cost estimate complete with unit prices which shall be subject to acceptance, amendment or rejection by the City of Greenbrier. Alternatively the City of Greenbrier shall have the right to calculate the cost of construction cost estimates.

(b) The performance security or performance bond shall be released in full only upon submission of as-built plans and written certification by a registered professional engineer licensed to practice in Tennessee that the structural BMP has been installed in accordance with the approved plan and other applicable provisions of this ordinance. The Building and Codes Official will make a final inspection of the structural BMP to ensure that it is in compliance with the approved plan and the provisions of this ordinance. Provisions for a partial pro-rata release of the performance security or performance bond based on the completion of various development stages can be made at the discretion of the City of Greenbrier.

#### SECTION 4. STORMWATER SYSTEM DESIGN AND MANAGEMENT STANDARDS.

(1) Stormwater design or BMP manual.

- (a) Adoption. The municipality adopts as its stormwater design and best management practices (BMP) manual the following publications, which are incorporated by reference in this ordinance as is fully set out herein:
  - (1) TDEC Sediment and Erosion Control Manual
  - (2) TDEC Manual for Post Construction
- (b) This manual includes a list of acceptable BMPs including the specific design performance criteria and operation and maintenance requirements for each stormwater practice. The manual may be updated and expanded from time to time, at the discretion of the governing body of the municipality, upon the recommendation of the City of Greenbrier, based on improvements in engineering, science, monitory and local maintenance experience. Stormwater facilities that are designed, constructed and maintained in accordance with these BMP criteria will be presumed to meet the minimum water quality performance standards.
- (2). General performance criteria for stormwater management. Unless granted a waiver or judged by the City of Greenbrier to be exempt, the following post construction performance criteria shall be addressed for stormwater management at all sites:
  - (a) All site designs shall control the peak flow rates of stormwater discharge associated with design storms specified in this ordinance or in the BMP manual and reduce the generation of post construction stormwater runoff to preconstruction levels. These practices should seek to utilize pervious areas for stormwater treatment and to infiltrate stormwater runoff from driveways,

- sidewalks, rooftops, parking lots, and landscaped areas to the maximum extent practical to provide treatment for both water quality and quantity.
- (b) To protect stream channels from degradation, specific channel protection criteria shall be provided as prescribed in the BMP manual.
- (c) Stormwater discharges to critical areas with sensitive resources (i.e., cold water fisheries, shellfish beds, swimming beaches, recharge areas, water supply reservoirs) may be subject to additional performance criteria, or may need to utilize or restrict certain stormwater management practices.
- (d) Stormwater discharges from "hot spots" may require the application of specific structural BMPs and pollution prevention practices.
- (e) Prior to or during the site design process, applicants for land disturbance permits shall consult with the City of Greenbrier to determine if they are subject to additional stormwater design requirements.
- (f) The calculations for determining peak flows as found in the BMP manual shall be used for sizing all stormwater facilities.
- (3). Minimum control requirements.
  - (a) Stormwater designs shall meet the multi-stage storm frequency storage requirements as identified in the BMP manual unless the City of Greenbrier has granted the applicant a full or partial waiver for a particular BMP under § 4.
  - (b) If hydrologic or topographic conditions warrant greater control than that provided by the minimum control requirements, the City of Greenbrier may impose any and all additional requirements deemed necessary to control the volume, timing, and rate of runoff.

- (4). Stormwater management plan requirements. The stormwater management plan shall include sufficient information to allow the City of Greenbrier to evaluate the environmental characteristics of the project site, the potential impacts of all proposed development of the site, both present and future, on the water resources, and the effectiveness and acceptability of the measures proposed for managing stormwater generated at the project site. To accomplish this goal the stormwater management plan shall include the following:
  - (a) Topographic Base Map: A 1" = 50 feet topographic base map of the site which extends a minimum of 25 feet beyond the limits of the proposed development and indicates:
    - (1) Existing surface water drainage including streams, ponds, culverts, ditches, sink holes, wetlands; and the type, size, elevation, etc., of nearest upstream and downstream drainage structures;
    - (2) Current land use including all existing structures, locations of utilities, roads, and easements;
    - (3) All other existing significant natural and artificial features;
    - (4) Proposed land use with tabulation of the percentage of surface area to be adapted to various uses; drainage patterns; locations of utilities, roads and easements; the limits of clearing and grading;
    - (5) Proposed structural BMPs;
    - (6) A written description of the site plan and justification of proposed changes in natural conditions may also be required.

- (b) Calculations: Hydrologic and hydraulic design calculations for the predevelopment and post-development conditions for the design storms specified in the BMP manual. These calculations must show that the proposed stormwater management measures are capable of controlling runoff from the site in compliance with this ordinance and the guidelines of the BMP manual. Such calculations shall include:
  - (1) A description of the design storm frequency, duration, and intensity where applicable;
  - (2) Time of concentration;
  - (3) Soil curve numbers or runoff coefficients including assumed soil moisture conditions;
  - (4) Peak runoff rates and total runoff volumes for each watershed area;
  - (5) Infiltration rates, where applicable;
  - (6) Culvert, stormwater sewer, ditch and/or other stormwater conveyance capacities;
  - (7) Flow velocities;
  - (8) Data on the increase in rate and volume of runoff for the design storms referenced in the BMP manual; and
  - (9) Documentation of sources for all computation methods and field test results.
- (c) Soils Information: If a stormwater management control measure depends on the hydrologic properties of soils (e.g., infiltration basins), then a soils report shall be submitted. The soils report shall be based on on-site boring logs or soil pit profiles

- and soil survey reports. The number and location of required soil borings or soil pits shall be determined based on what is needed to determine the suitability and distribution of soil types present at the location of the control measure.
- (d) Maintenance and Repair Plan: The design and planning of all stormwater management facilities shall include detailed maintenance and repair procedures to ensure their continued performance. These plans will identify the parts or components of a stormwater management facility that need to be maintained and the equipment and skills or training necessary. Provisions for the periodic review and evaluation of the effectiveness of the maintenance program and the need for revisions or additional maintenance procedures shall be included in the plan. A permanent elevation benchmark shall be identified in the plans to assist in the periodic inspection of the facility.
- (e) Landscaping Plan: The applicant must present a detailed plan for management of vegetation at the site after construction is finished, including who will be responsible for the maintenance of vegetation at the site and what practices will be employed to ensure that adequate vegetative cover is preserved. Where it is required by the BMP, this plan must be prepared by a registered landscape architect licensed in Tennessee.
- (f) Maintenance Easements: The applicant must ensure access to the site for the purpose of inspection and repair by securing all the maintenance easements needed. These easements must be binding on the current property owner and all subsequent owners of the property and must be properly recorded in the land record.

### (g) Maintenance Agreement:

- (1) The owner of property to be served by an on-site stormwater management facility must execute an inspection and maintenance agreement that shall operate as a deed restriction binding on the current property owner and all subsequent property owners.
- (2) The maintenance agreement shall:
  - (a) Assign responsibility for the maintenance and repair of the stormwater facility to the owner of the property upon which the facility is located and be recorded as such on the plat for the property by appropriate notation.
  - (b) Provide for a periodic inspection by the property owner for the purpose of documenting maintenance and repair needs and ensure compliance with the purpose and requirements of this ordinance.

    The property owner will arrange for this inspection to be conducted by a registered professional engineer licensed to practice in the State of Tennessee who will submit a sealed report of the inspection to the City of Greenbrier. It shall also grant permission to the city to enter the property at reasonable times and to inspect the stormwater facility to ensure that it is being properly maintained.
  - (c) Provide that the minimum maintenance and repair needs include,
    but are not limited to: the removal of silt, litter and other debris,
    the cutting of grass, grass cuttings and vegetation removal, and the

replacement of landscape vegetation, in detention and retention basins, and inlets and drainage pipes and any other stormwater facilities. It shall also provide that the property owner shall be responsible for additional maintenance and repair needs consistent with the needs and standards outlined in the BMP manual.

- (d) Provide that maintenance needs must be addressed in a timely manner, on a schedule to be determined by the City of Greenbrier.
- (e) Provide that if the property is not maintained or repaired within the prescribed schedule, the City of Greenbrier shall perform the maintenance and repair at its expense, and bill the same to the property owner. The maintenance agreement shall also provide that the City of Greenbrier stormwater utility's cost of performing the maintenance shall be a lien against the property.
- (3) The municipality shall have the discretion to accept the dedication of any existing or future stormwater management facility, provided such facility meets the requirements of this ordinance, and includes adequate and perpetual access and sufficient areas, by easement or otherwise, for inspection and regular maintenance. Any stormwater facility accepted by the municipality must also meet the municipality's construction standards and any other standards and specifications that apply to the particular stormwater facility in question.
- (h) Sediment and Erosion Control Plans:

The applicant must prepare a sediment and erosion control plan for all construction activities that complies with §5(5) below.

(5). Sediment and erosion control plan requirements.

The sediment and erosion control plan shall accurately describe the potential for soil erosion and sedimentation problems resulting from land disturbing activity and shall explain and illustrate the measures that are to be taken to control these problems. The length and complexity of the plan is to be commensurate with the size of the project, severity of the site condition, and potential for off-site damage. The plan shall be sealed by a registered professional engineer licensed in the state of Tennessee. The plan shall also conform to the requirements found in the BMP manual, and shall include at least the following:

- (a) Project Description Briefly describe the intended project and proposed land disturbing activity including number of units and structures to be constructed and infrastructure required.
- (b) A topographic map with contour intervals of five (5) feet or less showing present conditions and proposed contours resulting from land disturbing activity.
- (c) All existing drainage ways, including intermittent and wet-weather. Include any designated floodways or flood plains.
- (d) A general description of existing land cover. Individual trees and shrubs do not need to be identified.
- (e) Stands of existing trees as they are to be preserved upon project completion,
  specifying their general location on the property. Differentiation shall be made
  between existing trees to be preserved, trees to be removed and proposed planted

trees. Tree protection measures must be identified, and the diameter of the area involved must also be identified on the plan and shown to scale. Information shall be supplied concerning the proposed destruction of exceptional and historic trees in setbacks and buffer strips, where they exist. Complete landscape plans may be submitted separately. The plan must include the sequence of implementation for tree protection measures.

- (f) Approximate limits of proposed clearing, grading and filling.
- (g) Approximate flows of existing stormwater leaving any portion of the site.
- (h) A general description of existing soil types and characteristics and any anticipated soil erosion and sedimentation problems resulting from existing characteristics.
- (i) Location, size and layout of proposed stormwater and sedimentation control improvements.
- (i) Proposed drainage network.
- (k) Proposed drain tile or waterway sizes.
- (l) Approximate flows leaving site after construction and incorporating water run-off mitigation measures. The evaluation must include projected effects on property adjoining the site and on existing drainage facilities and systems. The plan must address the adequacy of outfalls from the development: when water is concentrated, what is the capacity of waterways, if any, accepting stormwater offsite; and what measures, including infiltration, sheeting into buffers, etc., are going to be used to prevent the scouring of waterways and drainage areas off-site, etc.



# • APPENDIX E: <u>PERMANENT STORMWATER</u> <u>MANAGEMENT AT NEW DEVELOPMENT AND</u> <u>REDEVELOPMENT PROJECTS</u>

**SUPPORTING MATERIALS** 

- (m) The projected sequence of work represented by the grading, drainage and sedimentation and erosion control plans as related to other major items of construction, beginning with the initiation of excavation and including the construction of any sediment basins or retention facilities or any other structural BMP's.
- (n) Specific remediation measures to prevent erosion and sedimentation run-off.
  Plans shall include detailed drawings of all control measures used; stabilization measures including vegetation and non-vegetation measures, both temporary and permanent, will be detailed. Detailed construction notes and a maintenance schedule shall be included for all control measures in the plan.
- (o) Specific details for: the construction of rock pads, wash down pads, and settling basins for controlling erosion; road access points; eliminating or keeping soil, sediment, and debris on streets and public ways at a level acceptable to the City of Greenbrier. Soil, sediment, and debris brought onto streets and public ways must be removed by the end of the work day by machine, broom or shovel to the satisfaction of the City of Greenbrier. Failure to remove the sediment, soil or debris shall be deemed a violation of this ordinance.
- (p) Proposed structures; location (to the extent possible) and identification of any proposed additional buildings, structures or development on the site.
- (q) A description of on-site measures to be taken to recharge surface water into the ground water system through infiltration.

#### SECTION 5. POST CONSTRUCTION.

(1). As built plans.

All applicants are required to submit actual as built plans for any structures located onsite after final construction is completed. The plan must show the final design
specifications for all stormwater management facilities and must be sealed by a registered
professional engineer licensed to practice in Tennessee. A final inspection by the City of
Greenbrier is required before any performance security or performance bond will be
released. The City of Greenbrier shall have the discretion to adopt provisions for a partial
pro-rata release of the performance security or performance bond on the completion of
various stages of development. In addition, occupation permits shall not be granted until
corrections to all BMP's have been made and accepted by the City of Greenbrier.

- (2). Landscaping and stabilization requirements.
  - (a) Any area of land from which the natural vegetative cover has been either partially or wholly cleared by development activities shall be revegetated according to a schedule approved by the City of Greenbrier. The following criteria shall apply to revegetation efforts:
    - (1) Reseeding must be done with an annual or perennial cover crop
      accompanied by placement of straw mulch or its equivalent of sufficient
      coverage to control erosion until such time as the cover crop is established
      over ninety percent (90%) of the seeded area.
    - (2) Replanting with native woody and herbaceous vegetation must be accompanied by placement of straw mulch or its equivalent of sufficient coverage to control erosion until the plantings are established and are capable of controlling erosion.

- (3) Any area of revegetation must exhibit survival of a minimum of seventy-five percent (75%) of the cover crop throughout the year immediately following revegetation. Revegetation must be repeated in successive years until the minimum seventy-five percent (75%) survival for one (1) year is achieved.
- (b) In addition to the above requirements, a landscaping plan must be submitted with the final design describing the vegetative stabilization and management techniques to be used at a site after construction is completed. This plan will explain not only how the site will be stabilized after construction, but who will be responsible for the maintenance of vegetation at the site and what practices will be employed to ensure that adequate vegetative cover is preserved.
- (3). Inspection of stormwater management facilities. Periodic inspections of facilities shall be performed as provided for in §5(4)(g)(2)(b).
- (4). Records of installation and maintenance activities. Parties responsible for the operation and maintenance of a stormwater management facility shall make records of the installation of the stormwater facility, and of all maintenance and repairs to the facility, and shall retain the records for at least 7 years. These records shall be made available to the City of Greenbrier during inspection of the facility and at other reasonable times upon request.
- (5). Failure to meet or maintain design or maintenance standards. If a responsible party fails or refuses to meet the design or maintenance standards required for stormwater facilities under this ordinance, the City of Greenbrier, after reasonable notice, may correct a violation of the design standards or maintenance needs by performing all necessary work

to place the facility in proper working condition. In the event that the stormwater management facility becomes a danger to public safety or public health, the City of Greenbrier shall notify in writing the party responsible for maintenance of the stormwater management facility. Upon receipt of that notice, the responsible person shall have 30 days to affect maintenance and repair of the facility in an approved manner. In the event that corrective action is not undertaken within that time, the City of Greenbrier may take necessary corrective action. The cost of any action by the City of Greenbrier under this section shall be charged to the responsible party.

#### SECTION 6. WAIVERS.

#### (1). General.

Every applicant shall provide for post construction stormwater management as required by this Ordinance, unless a written request is filed to waive this requirement. Requests to waive the stormwater management plan requirements shall be submitted to the City of Greenbrier for approval.

- (2). Conditions for waiver. The minimum requirements for stormwater management may be waived in whole or in part upon written request of the applicant, provided that at least one of the following conditions applies:
  - (a) It can be demonstrated that the proposed development is not likely to impair attainment of the objectives of this ordinance.
  - (b) Alternative minimum requirements for on-site management of stormwater discharges have been established in a stormwater management plan that has been approved by the City of Greenbrier.

- (c) Provisions are made to manage stormwater by an off-site facility. The off-site facility must be in place and designed to provide the level of stormwater control that is equal to or greater than that which would be afforded by on-site practices. Further, the facility must be operated and maintained by an entity that is legally obligated to continue the operation and maintenance of the facility.
- (3). Downstream damage, etc. prohibited. In order to receive a waiver, the applicant must demonstrate to the satisfaction of the City of Greenbrier that the waiver will not lead to any of the following conditions downstream:
  - (a) Deterioration of existing culverts, bridges, dams, and other structures;
  - (b) Degradation of biological functions or habitat;
  - (c) Accelerated streambank or streambed erosion or siltation;
  - (d) Increased threat of flood damage to public health, life or property.
- (4). Land disturbance permit not to be issued where waiver requested. No land disturbance permit shall be issued where a waiver has been requested until the waiver is granted. If no waiver is granted, the plans must be resubmitted with a stormwater management plan.

#### SECTION 7. EXISTING LOCATION AND DEVELOPMENTS.

(1). Requirements for all existing locations and developments.

The following requirements shall apply to all locations and development at which land disturbing activities have occurred previous to the enactment of this ordinance:

(a) Denuded areas must be vegetated or covered under the standards and guidelines specified in the BMP manual and on a schedule acceptable to the City of Greenbrier.

- (b) Cuts and slopes must be properly covered with appropriate vegetation and/or retaining walls constructed.
- (c) Drainage ways shall be properly covered in vegetation or secured with rip-rapp, channel lining, etc., to prevent erosion.
- (d) Trash, junk, rubbish, etc. shall be cleared from drainage ways.
- (e) Stormwater runoff shall be controlled to the extent reasonable to prevent pollution of local waters. Such control measures may include, but are not limited to, the following:
  - (1) Ponds
    - (a) Detention pond
    - (b) Extended detention pond
    - (c) Wet pond
    - (d) Alternative storage measures
  - (2) Constructed wetlands
  - (3) Infiltration systems
    - (a) Infiltration/percolation trench
    - (b) Infiltration basin
    - (c) Drainage (recharge) well
    - (d) Porous pavement
  - (4) Filtering systems
    - (a) Catch basin inserts/media filter
    - (b) Sand filter
    - (c) Filter/absorption bed

,		

- (d) Filter and buffer strips
- (5) Open channel
  - (a) Swale
- (2). Requirements for existing problem locations. The City of Greenbrier shall in writing notify the owners of existing locations and developments of specific drainage, erosion or sediment problem affecting such locations and developments, and the specific actions required to correct those problems. The notice shall also specify a reasonable time for compliance.
- **(3)**. Inspection of existing facilities. The City of Greenbrier may, to the extent authorized by state and federal law, establish inspection programs to verify that all stormwater management facilities, including those built before as well as after the adoption of this ordinance, are functioning within design limits. These inspection programs may be established on any reasonable basis, including but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants; inspections of businesses or industries of a type associated with higher than usual discharges of contaminants or pollutants or with discharges of a type which are more likely than the typical discharge to cause violations of the municipality's NPDES stormwater permit; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other BMPs.

			,

(4). Corrections of problems subject to appeal. Corrective measures imposed by the stormwater utility under this section are subject to appeal under §11 of this ordinance.

#### SECTION 8. ILLICIT DISCHARGES.

#### (1). Scope.

This section shall apply to all water generated on developed or undeveloped land entering the municipality's separate storm sewer system.

(2). Prohibition of illicit discharges.

No person shall introduce or cause to be introduced into the municipal separate storm sewer system any discharge that is not composed entirely of stormwater. The commencement, conduct or continuance of any non-stormwater discharge to the municipal separate storm sewer system is prohibited except as described as follows:

- (a) Uncontaminated discharges from the following sources:
  - (1) Water line flushing or other potable water sources,
  - (2) Landscape irrigation or lawn watering with potable water,
  - (3) Diverted stream flows,
  - (4) Rising ground water,
  - (5) Groundwater infiltration to storm drains,
  - (6) Pumped groundwater,
  - (7) Foundation or footing drains,
  - (8) Crawl space pumps,
  - (9) Air conditioning condensation,
  - (10) Springs,
  - (11) Non-commercial washing of vehicles,



# • APPENDIX F: CONSTRUCTION SITE STORMWATER INSPECTION

**SUPPORTING MATERIALS** 



Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

# General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

# Construction Stormwater Inspection Certification

The state of the s	Aroundates wishermou Ce	runcation (Twice-Weekly I	ispections)	
Site or Project Name: Greenbrier	Auto, US Hwy 41, Greenbrier,		Address when strange at the second	755
Primary Permittee Name: David Sar	nford	Date of Inspection:	· · · · · · · · · · · · · · · · · · ·	Control commission on the HOUSE Control of State Co.
Current approximate disturbed acreage: 2.33 Acres	Has rainfall been checked/docu		이기 Wade Pearson	<u> </u>
Current weather conditions:	and the second s	Inspector's Training Certification Numbe	<sub>r</sub> . 143348	ini lan menantanggap dan pelalapanga
Please check the box if the followi	ng items are on-site:	and the second of the second s	The second of th	and the second s
groups	Stormwater Pollution Prevention	n Plan (SWPPP)	ekly inspection do	
	Rain Gage 🛛 Off-site Referen		REEN61	Companiano
Best Management Practices (BMPs		con construction chodinal interest	Vinta/YO I	***************************************
Are the Erosion Prevention and Se	diment Controls (EPSCs) functi	Colleg correctly if "No " decaring	la se de la constanta de la co	
1. Are all applicable EPSCs instal	led and maintained per the SWPF	PP?		
	y at all disturbed areas/material st		<b>2</b> Y	***************************************
Are EPSCs functioning correctly	v at outfall/discharge opints such t	hat there is no chientian-like at	<b>2</b> 2) Ye	es 🗌 No
THE PERSON NAMED IN COLUMN TO A COLUMN TO SERVICE OF COLUMN TO SERVICE O	, and he other water quality impac	its per section 5 3.22	ZIY	es □No
4. Are EPSCs functioning correcti	y at ingress/egress points such this	at there is no evidence of track out	) Z Ye	s 🗆 No
THE PARTY OF THE P	nerval the unessures to be implen-	inaged by appropriate controls per lented to address deficiencies.	Mai 19	
6 days per section 3.5.3.2? If "No	ation has temporarily/permanent ," describe below each location ar	y ceased, was the area stabilized y	area/e) 🕊 🏋	s 🗆 No
pollutants from equipment and in "No," describe below the measure.	ures been installed, implemented wehicle washing, wheel wash wate ires to be implemented to address	, and maintained to minimize the di er, and other wash waters per section deficiencies		s □No
If a concrete washout facility is i     If "No," describe below the meas	ccated on site, is it clearly identific sures to be implemented to addre	ed on the project and maintained?	<b>☑</b> N/A □Ye	s 🗆 No
g. have all previous deficiencies be Check if deficiencies/correction.  Comment Section. If the answer is "No Otherwise, describe any pertinent obs	ve measures have been reported	remaining deficiencies in Commen on a previous form.	₩ <u>_</u> _TT0	s 🗆 No
ainfall Amounts N SITE / OFF SITE				
ertification and Signature (must be	Digmad by the angle of			
ertification and Signature (must be certify under penalty of law that this outpended information is to the best of enalties for submitting false information and the Section 39-16-702(a)(4), this	my knowledge and belief, true, a strong including the possibility of	are prepared by me, or under my daccurate, and complete. I am awa	irection or supervis	sion. The
spector Name Wade Pearson	,	ature: Wade Pearson	Date: Ohio	
rimary Permittee ame and Title:	Signa	at light of the state of the st	Date:	
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Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243 1-888-891-8332 (TDEC)

# General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

		ser unication :	( I MICG-AAGGKIA ILIZ	becaous)		
Site or Project Name: Greenbrier	Auto, US Hwy 41, Greenbrie	y, TN	NPDES Tracking Nur	nber: TNR ;	243755	
Primary Permittee Name: David Sa	nfo <b>rd</b>		Date of Inspection:	911	0/20	,
Current approximate 2.33 Acres disturbed acreage:	Has rainfall been checked/dodaily? Yes No	ocumented	Name of Inspector: V	Vade Pear	•	
Current weather conditions:		· · · · · · · · · · · · · · · · · · ·	Inspector's Training Certification Number:	143348	A PAR America - I Marine Para America - I Marine - I	
Please check the box if the follow	ing items are on-site:	, -s				
Notice of Coverage (NOC)	Stormwater Poliution Preven	tion Plan (SWPF	P) Z Twice-week	dy inspectio	n docum	entatio
Site contact information	☑ Rain Gage ☑ Off-site Refe	rence Rain Gag	e Location: KTNGRE	EN61		
Best Management Practices (BMF		-	die rysikoso sogresososos —		P-1 American	
Are the Erosion Prevention and S	ediment Controls (EPSCs) fu	nctioning correc	tiv: If "No." describe be	low in Com	neal Se	ction
1. Are all applicable EPSCs insta	illed and maintained per the SV	/PPP?			☑ Yes	□No
	ly at all disturbed areas/materia		per section 4.1.5?	******	Z Yes	□ No
Are EPSCs functioning correct	lly at outfall/discharge points su	ch that there is n	a objectionable color	· · · · · · · · · · · · · · · · · · ·		
contrast in the receiving stream	n, and no other water quality im	pacts per section	5.3.2?		Z Yes	□ No
If analizable have dischar	lly at ingress/egress points such	that there is no	evidence of track out?		Z Yes	
section 4.1.47 If "No," describe	from dewatering activities been below the measures to be imp	lemented to add	ress deficiencies.		<b>7</b> Yes	□No
If construction activity at any lo days per section 3.5.3.2? If "N	cation has temporarily/perman o," describe below each location	ently ceased, wa narid measures	s the area stabilized wit taken to stabilize the are	hin 14 ea(s)	<b>Z</b> Yes	□ N¢
Have pollution prevention mea pollutants from equipment and	sures been installed, implemen vehicle washing, wheel wash v sures to be implemented to add	ted, and maintain	ned to minimize the disc	harge of	<b>Z</b> ] Yes	□No
8. If a concrete washout facility is If "No," describe below the me:	located on site, is it clearly ide asures to be implemented to ac	ntified on the pro dress deficiencie	ject and maintained?		⊒Yes	□No
9. Have all previous deficiencies  Check if deficiencies/correct	been addressed? If "No," descr tive measures have been repor	ibe remaining de ted on a previous	ficiencies in Comment s s form	ection.	Z] Yes	□No
Rainfall Amounts DN SITE / OFF SITE						
Certification and Signature (must b	e signed by the certified inspec	for and the nerm	itee per Sections 3.5.2	2 (a) end 7	7 2 Af th	a COP
certify under penalty of law that this submitted information is to the best penalties for submitting false information. Annotated Section 39-16-702(a)(4) to	s document and all attachment of my knowledge and belief, tr nation, including the possibilit	s were prepared ue, accurate, an y of fine and it	by me, or under my dir d complete. I am awar nprisonment. As spec	ection or su	pervisio are sio	n. The
nspector Name Wade Pearson and Title:	***	· · · · · · · · · · · · · · · · · · ·	ade Pearson	Date: C	1/10/	70
Primary Permittee Name and Title:		Signature:		Date:		
				L		



Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Martines of the second property and the second seco			( ) resourced the	hectio	ro j	
Site or Project Name: Greenbrier	Auto, US Hwy 41, Greenbrier, Ti	V	NPDES Tracking Nu	mber: TN	IR 243755	
Primary Permittee Name: David Sar	nford	and the property of the second se	Date of Inspection:	9/14	4120	· · · · · · · · · · · · · · · · · · ·
Current approximate 2.33 Acres disturbed acreage:	Has rainfall been checked/docum daily? Yes No	ented	Name of Inspector:	Wade Pe		TETATIVA MARIA
Current weather conditions:		mer men	Inspector's Training Certification Number:	143348		
Please check the box if the followi	ng items are on-site:		agaan ilganiiyaayiidaa daadaa	The state of the s	PACINI No. (m. 1911) 11 11 11 11 11 11 11 11 11 11 11 11	0-03-03-040-04-0
☑ Notice of Coverage (NOC)   ☑	Stormwater Pollution Prevention I	lan (SWF	PP) V Twice-wee	kly inspec	tion docum	entation
	Rain Gage 🛛 Off-site Reference					
Best Management Practices (BMP)	<b>s):</b>		A) A) reconsers and means among the project in the p		W 1879/404/40/400000000000000000000000000000	
Are the Erosian Prevention and Se	diment Controls (EPSCs) functio	ning com	ctiv: If "No." describe be	low in Co	mment Se	ction
1. Are all applicable EPSCs instal	led and maintained per the SWPPP	?	ingina di manana		<b>Z</b> Yes	□No
2. Are EPSCs functioning correct	y at all disturbed areas/material stor	age areas	per section 4.1.52		Z Yes	□ No
Are EPSCs functioning correct!	v at outfall/discharge points such th	at there is	no chiactionania caine		P 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
contrast in the receiving stream	, and no other water quality impacts	per section	on 5,3.2?		Z Yes	□No
If applicable have discharges	y at ingress/egress points such that rom dewatering activities been man	there is no	evidence of track out?		2 Yes	□No
section 4.1.47 it IND. describe	below the measures to be impleme	nted to ad	dress deficiencies.		Z Yes	□No
If construction activity at any loc days per section 3.5.3.2? If "No	ation has temporarily/permanently, describe below each location and	ceased, w measures	as the area stabilized with taken to stabilize the ar	ea(s)	☑ Yes	□No
7. pollutants from equipment and No, describe below the measu	ures been installed, implemented, i rehicle washing, wheel wash water, ires to be implemented to address o	ind mainte and other leficiencie	lined to minimize the disc wash waters per sections	nharan af	<b>2</b> Yes	□No
<ol> <li>If a concrete washout facility is If "No," describe below the mea</li> </ol>	ocated on site, is it clearly identified sures to be implemented to address	on the prideficienc	oject and maintained?	ØN/A	☐ Yes	□No
Have all previous deficiencies b	een addressed? If "No," describe re	maining d	eficiencies in Comment	section.	Z Yes	□No
Comment Section. If the answer is "N	ve measures have been reported o	a previoi	is form,	······································		
Rainfall Amounts ON SITE / OFF SITE Trace / O.01"						
Certification and Signature (must be	signed by the certified inspector ar	d the ner	nittee per Sentings 3 5 8	2 (n) and	779011	• (ትርርር)
certify under penalty of law that this submitted information is to the best openalties for submitting talse inform Annotated Section 39-16-702(a)(4), the	document and all attachments were f my knowledge and belief, true, as ation, including the possibility of	prepared courate, as fine and	l by me, or under my dir id complete. I am awar imprisonment. As son	ection or	supervision	1. The
nspector Name Wade Pearson and Title:	Signa		Vade Pearson	Date:	9/14/20	)
Primary Permittee Name and Title	Signal	ure	en e	Date:		
The second secon				ì		

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Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Site or Project Name: Greenbrier Auto	, US Hwy 41, Greenbrier, TN	NPDES Tracking Nur	nber: TNR 243755	
Primary Permittee Name: David Sanfor	d	Date of Inspection:	9/17/20	no nemotive de la company de comp
	as rainfall been checked/documented ally? Yes No	(1986) - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 -	Vade Pearson	***************************************
Current weather conditions:		Inspector's Training Certification Number:	143348	
Please check the box if the following i	tems are on-site:	म्पार्थे र प्रकार व प्रवेशका र प्रकार १ । को को का स्वाप्त व स्वाप्त व स्वाप्त व्यवस्था स्वाप्त का स्वाप्त स्व 		and the part of the field of the standard state of the standard
☑ Notice of Coverage (NOC) ☑ S	tormwater Pollution Prevention Plan (SWP	PP) Z Twice-week	dy inspection docum	entation
☑ Site contact information ☑ R	ain Gage 🛛 Off-site Reference Rain Ga	ge Location: KTNGRE	EN61	
Best Management Practices (BMPs):		ARABOME PRODUCTION AND AREA CONTRACTOR AND AREA CONTRACTOR AND AREA CONTRACTOR AND AREA CONTRACTOR AND AREA CO		
Are the Erosion Prevention and Sedim	nent Controls (EPSCs) functioning corre	ectly: If "No," describe be	low in Comment Se	ction
Are all applicable EPSCs installed	and maintained per the SWPPP?		☑ Yes	□No
	all disturbed areas/material storage areas		Z Yes	□No
<ol> <li>Are EPSCs functioning correctly at contrast in the receiving stream, ar</li> </ol>	outfall/discharge points such that there is id no other water quality impacts per section	no objectionable color on 5.3.2?	<b>☑</b> Yes	□No
	ingress/egress points such that there is no		☑ Yes	□No
section 4.1.47 If "No," describe bell	dewatering activities been managed by a ow the measures to be implemented to ad	dress deficiencies.	<b>☑</b> Yes	□No
days per section 3.5.3.2? If "No," d	on has temporarily/permanently ceased, w escribe below each location and measures	s taken to stabilize the an	ea(s) Mures	□No
/ pollutants from equipment and veh  "No," describe below the measures	is been installed, implemented, and mainta icle washing, wheel wash water, and other to be implemented to address deficiencie	rwash waters per section is.	harge of 4.1.5? If ☑ Yes	□No
If a concrete washout facility is local     If "No," describe below the measure	ated on site, is it clearly identified on the pr as to be implemented to address deficienc	oject and maintained? ies.	☑N/A ☐Yes	□N≎
9. Have all previous deficiencies been Check if deficiencies/corrective	n addressed? If "No," describe remaining o measures have been reported on a previou	leficiencies in Comment's us form.	section. 🛛 Yes	□No
Comment Section. If the answer is "No" for Otherwise, describe any pertinent observed	or any of the above, please describe the prations:	roblem and corrective act	ions to be taken.	THE TOTAL PROPERTY OF
Rainfall Amounts ON SITE / OFF SITE				
Certification and Signature (must be sig	ned by the certified inspector and the pen	mittee per Sections 3.5.8	2 (g) and 7.7.2 of th	e CGP)
I certify under penalty of law that this doc submitted information is to the best of m penalties for submitting false information	curnent and all attachments were prepare by knowledge and belief, true, accurate, a cn, including the possibility of fine and declaration is made under penalty of perjur	d by me, or under my dir nd complete. I am awar imprisonment. As sper	ection or supervisio	n. The
Inspector Name Wade Pearson and Title:	Signature: U	Vade Prarson	Date: 9/11/20	
Primary Permittee Name and Title:	Signature:	en e	Date:	

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Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

#### General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Site or Project Name: Greenbrier A	luto, US Hwy 41, Greenbri	er, TN	NPDES Tracking Num	ber: TNR 243755	
Primary Permittee Name: David San	ford	e en	Date of Inspection:	9/21/20	i./
Current approximate 2.33 Acres disturbed acreage:	Has rainfall been checked/d daily? Yes No		Name of Inspector: V		<del>gaarging bad dala</del> sama ana dalah sama da
Current weather conditions:			Inspector's Training Certification Number:	143348	
Please check the box if the following	ng Items are on-site:				
☑ Notice of Coverage (NOC) ☑	Stormwater Pollution Preve	ntion Plan (SWPF	P)	ly inspection docum	entation
Site contact information	Rain Gage 🔽 Off-site Re	ference Rain Gag	e Location: KTNGRE	EN61	
Best Management Practices (BMPs					
Are the Erosion Prevention and Se	diment Controls (EPSCs) fo	inctioning correc	tly: If "No," describe bel	low in Comment Se	ction
1 Are all applicable EPSCs install	led and maintained per the S	WPPP?		<b>☑</b> Yes	□No
2. Are EPSCs functioning correctly	y at all disturbed areas/mater	al storage areas p	er section 4.1.5?	☑ Yes	□No
<ol> <li>Are EPSCs functioning correctly contrast in the receiving stream</li> </ol>	y at outfall/discharge points s	uch that there is n	o objectionable color	<b>☑</b> Yes	□No
4. Are EPSCs functioning correctly				<b>☑</b> Yes	□No
5. If applicable, have discharges fi section 4.1.4? If "No." describe				☑ Yes	□No
6. If construction activity at any loc days per section 3.5.3.2? If "No	cation has temporarily/perma ," describe below each location	nently ceased, wa on and measures	s the area stabilized with taken to stabilize the are	hin 14 ≳a(s) ☑ Yes	□No
Have pollution prevention meas 7. pollutants from equipment and "No," describe below the measu	vehicle washing, wheel wash	water, and other	wash waters per section		□No
B. If a concrete weshout facility is     If "No," describe below the mea	sures to be implemented to a	iddress deficiencie	\$.	☑N/A □Yes	□No
g. Have all previous deficiencies be Check if deficiencies/correct				section. ZYes	□No
Otherwise, describe any pertinent ob-	agi antous:				
Rainfall Amounts					
ON SITE / OFF SITE					
<u>Ø, Ø</u>					
Certification and Signature (must be	s einnad hy tha narlifiad inch	Setor and the norm	uittee ner Sertions 3 F.S.	2 (a) and 7 7 2 of fl	a CCP
I certify under penalty of law that this submitted information is to the best of penalties for submitting talse information and Amotated Section 39-16-702(a)(4), the certification of the certificati	document and all attachment of my knowledge and belief, nation, including the possible	its were prepared true, accurate, ar lity of fine and i	by me, or under my dir id complete. I am awar mprisonment. As spec	ection or supervision that there are significant	n. The
Inspector Name Wade Pearson and Title:		May y	Pade Pearson	Date: 9/21/20	
Primary Permittee Name and Title:	5,943,986,94 <sub>7,77</sub> ,94,94,95,95,95,95,95,95,95,95,95,95,95,95,95,	Signature:		Date:	arry <u>3 - 64 - 620-6</u> 3 to 1/2 - 17 - 18 4 19 19 19 19 19 19 19 19 19 19 19 19 19



Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Ayenue, 11th Floor, Nashville, Tennessee 37243
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#### General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Site or Project Name: Greenbrier A	uto, US Hwy 41, Greenbr	ier, TN	NPDES Tracking Num	ber: TNR 243755	The state of the supplemental by the supplemen
Primary Permittee Name: David San	ford	resentación (de inicial de la descripción de la constanción de la	Date of Inspection:	9/24/20	
Current approximate disturbed acreage: 2.33 Acres	Has rainfail been checked/idaily? Yes No		Name of Inspector. W	***************************************	
Current weather conditions:			Inspector's Training Certification Number.	143348	
Please check the box if the following	ng items are on-site:	***************************************			***************************************
☑ Notice of Coverage (NOC) ☑	Stormwater Pollution Preve	ention Plan (SV	VPPP) 🛛 Twice-week	ly inspection docum	nentation
Site contact information	Rain Gage 💟 Off-site Re	terence Rain (	Sage Location: KTNGRE	EN61	
Best Management Practices (BMPs	s);		***************************************	**************************************	
Are the Erosion Prevention and Se	diment Controls (EPSCs) f	unctioning co	rrectly: If "No," describe bel	low in Comment Se	ction
Are all applicable EP\$Cs install				☑ Yes	□No
2. Are EPSCs functioning correctly	at all disturbed areas/mater	ial storage are	as per section 4.1.5?	☑Yes	□No
<ol> <li>Are EPSCs functioning correctly contrast in the receiving stream</li> </ol>	y at outfall/discharge points s , and no other water quality i	such that there	is no objectionable color ction 5.3.2?	<b>☑</b> Yes	□No
4. Are EPSCs furictioning correctly				☑ Yes	□No
<ol> <li>If applicable, have discharges for section 4.1.4? If "No," describe</li> </ol>	om dewatering activities bee	n managed by	appropriate controls per	<b>☑</b> Yes	□No
<ol> <li>if construction activity at any loc days per section 3.5.3.2? If "No</li> </ol>	ation has temporarily/perma ," describe below each locati	nently ceased, on and measu	was the area stabilized with res taken to stabilize the are	hin 14 Z Yes	□No
Have pollution prevention meas pollutants from equipment and 'No," describe below the meas:	ures been installed, impleme vehicle washing, wheel wash	ented, and mai water, and of	ntained to minimize the disc ner wash waters per section	haroe of	□No
<ol> <li>If a concrete washout facility is I If "No," describe below the mea</li> </ol>	sures to be implemented to a	address deficie	ncies.	☑N/A ☐Yes	□No
<ol> <li>Have all previous deficiencies b</li> <li>Check if deficiencies/correcti</li> </ol>	een addressed? If "No," des ve measures have been rep	cribe remaining orled on a prev	g deficiencies in Comment e vious form.	ection.	□No
Rainfall Amounts ON SITE / OFF SITE  Trace /	ervagons:				
Certification and Signature (must be	signed by the certified inspi	ector and the p	ermittee per Sections 3.5.8.	2 (g) and 7.7.2 of t	ne CGP)
I certify under penalty of law that this submitted information is to the best of penalties for submitting false inform	document and all attachment my knowledge and belief, action, including the possib	nts were prepa true, accurate lity of fine an	red by me, or under my din and complete. I am awan d imprisonment. As spec	ection or supervision of the sup	n. The philicant
Annotated Section 39-15-702(a)(4), the Inspector Name Wade Pearson and Title:	ia ucusiatori is mage unoe	Signature:	Wade Pearson	Date: 9/24/2	0
Primary Permittee Name and Title:		Signature		Date:	



Division of Water Resources William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243 1-888-891-8332 (TDEC)

General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Site or Project Name: Greenbrier Auto, US Hwy 41, Greenb	rier, TN	NPDES Tracking Nun	nber: TNR 243	755
Primary Permittee Name: David Sanford	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Date of Inspection:	9/28/20	)
Current approximate 2.33 Acres Has rainfall been checked daily? Yes N		Name of Inspector: V	4*************************************	
Current weather conditions:	The second secon	Inspector's Training Certification Number:	143348	Andrew Control of the second section of the section of
Please check the box if the following items are on-site:		<del>kerede dan mende dan mende mende da playder for de de</del> mende mende de d	ere	
☑ Notice of Coverage (NOC) ☑ Stormwater Pollution Previ	ention Plan (SWPF	P)	ly inspection do	cumentation
☑ Site contact information ☑ Rain Gage ☑ Off-site Re	·	*	,	
Best Management Practices (BMPs):	_	TOTAL STREET, THE SHARE STREET, STREET	The should be highway against the state of t	The second secon
Are the Erosion Prevention and Sediment Controls (EPSCs)	unctioning correc	tiv: if "No." describe be	low in Commen	Section
1. Are all applicable EPSCs installed and maintained per the S	WPPP?		ZIY	
2. Are EPSCs functioning correctly at all disturbed areas/mate		per section 4.1.52	<u> </u>	
, Are EPSCs functioning correctly at outfall/discharge points:	such that there is n	o objectionable color		
contrast in the receiving stream, and no other water quality	impacts per section	1 5.3.2?	ZY	es 🗌 No
4. Are EPSCs functioning correctly at ingress/egress points su			ZY	es 🗌 No
<ol> <li>If applicable, have discharges from dewatering activities between section 4.1.47 if "No," describe below the measures to be in</li> </ol>	nplemented to add	ress deficiencies.	ZIY	es 🗆 No
f construction activity at any location has temporarily/permanently ceased, was the area stabilized within 14 days per section 3.5.3.2? If "No," describe below each location and measures taken to stabilize the area(s)				
Have pollution prevention measures been installed, implem 7. pollutants from equipment and vehicle washing, wheel wash "No," describe below the measures to be implemented to an	water, and other water and oth	wash waters per section	harge of 4.1.5? If <b>Z</b> Y	es □No
<ol> <li>If a concrete washout facility is located on site, is it clearly in if No," describe below the measures to be implemented to</li> </ol>	address deficiencie	<b>?\$</b> .	ZN/A DY	es 🗆 No
9. Have all previous deficiencies been addressed? If "No," des Check if deficiencies/corrective measures have been rep	cribe remaining de orted on a previous	ficiencies in Comment s s form.	ection.	es 🔲 No
Comment Section. If the answer is "No" for any of the above, pleat Otherwise, describe any pertinent observations:	se describe the pro	blem and corrective acti	ions <b>to be take</b> n	
Rainfall Amounts ON SITE / OFF SITE  O    O				
Certification and Signature (must be signed by the certified insp	ector and the perm	ittee per Sections 3.5.8	2 (a) and 7.7.2	of the CGP1
I certify under penalty of law that this document and all attachme submitted information is to the best of my knowledge and belief, penalties for submitting false information, including the possib Annotated Section 39-16-702(a)(4), this declaration is made under	nts were prepared true, accurate, an ility of fine and in	by me, or under my direction of the dire	ection or superv	ision. The
Inspector Name Wade Pearson and Title:	and the state of t	lade Pearson	Date: 9/28/	20
Primary Permittee Name and Title:	Signature:		Date:	***************************************



Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Site or Project Name: Greenbrier Auto, US Hwy 41, Greenbrier, TN			NPDES Tracking Number: TNR 243755			
Primary Permittee Name: David Sanford			Date of Inspection: /O/1/20			
Current approximate 2.33 Acres Has rainfall been checked/documented daily? Yes No			Name of Inspector: Wade Pearson			
Surrent weather conditions:		Inspector's Training Certification Number: 143348				
Please check the box if the following	ng items are on-site:	, v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v . , v .	the management of the second	And Advances on the contract of the district of the contract o		
☑ Notice of Coverage (NOC)   ☑	Stormwater Pollution Preve	ention Plan (SWPF	P) Z Twice-week	dy inspection docur	nentatio	
Site contact information	Rain Gage 🛛 Off-site Re	rterence Rain Gag	e Location: KTNGRE	EN61		
Best Management Practices (BMP:	<b>)</b>		TO SECULOS DE DISTORDISTA MUNICIPAL DE			
Are the Erosion Prevention and Se		unctioning correc	tly: If "No," describe be	low in Comment Si	ection	
1. Are all applicable EPSCs instal				<b>☑</b> Yes	□No	
2. Are EPSCs functioning correctl	y at all disturbed areas/mater	ial storage areas p	er section 4.1.5?	☑Yes	□ No	
3. Are EPSCs functioning correct!	y at outfall/discharge points s	such that there is n	o objectionable color	<b>☑</b> Yes	□No	
contrast in the receiving stream				T. T. III III III III II AA AAAAAAAAAAAA		
4. Are EPSCs functioning correct				<b>☑</b> Yes	□No	
5. If applicable, have discharges f section 4.1.4? If "No," describe	below the measures to be in	plemented to add	ress deficiencies.	☑ Yes	□No	
<ol> <li>If construction activity at any loc days per section 3.5.3.27 If "No</li> </ol>	cation has temporarily/perma ; describe below each locati	nently ceased, wa on and measures	s the area stabilized wit taken to stabilize the an	hin 14 ☑ Yes ∌a(s)	□No	
Have pollution prevention meas     pollutants from equipment and     "No," describe below the measure.	vehicle washing, wheel wash	water, and other t	vash waters per section	harge of 4.1.5? If <b>②</b> Yes	ДΝ	
<ol> <li>If a concrete washout facility is if "No," describe below the mea</li> </ol>	located on site, is it dearly id sures to be implemented to a	entified on the pro address deficience	ect and maintained?	☑N/A □Yes	□No	
9. Have all previous deficiencies but Check if deficiencies/correct	een addressed? if "No," des	cribe remaining de	ficiencies in Comment s	section. 🛛 Yes	□No	
Comment Section. If the answer is "N Otherwise, describe any pertinent ob-	o" for any of the above, pleas servations:	se describe the pro	blem and corrective act	ions to be taken.		
tainfall Amounts DN SITE / OFF SITE						
Ø, Ø						
Cartification and Circulation forced by	s of mad his the month of lane.	sakar and the same	lites per Cartiere 2 5 9	2 (a) and 7.7 (c. 4)	h- MAD	
Certification and Signature (must be certify under penalty of law that this submitted information is to the best consisted for submitting false information 39-16-702(a)(4), the consistency of the consist	document and all attachme of my knowledge and belief, nation, including the possib	nts were prepared true, accurate, an ility of fine and i	by me, or under my dir d complete. I am awar nprisonment. As spe	rection or supervisi e that there are si	on. The	
rispector Name Wade Pearson and Title:		a tomorous and a construction of the construct	Pada Pearson	Date: /0/1/20	)	
Primary Permittee Name and Title:		Signature:	والمعاونة والموادمة والمناصرة والمناصرة والمناصرة والمناصرة والمناطقة والمناطقة والمناطقة والمناطقة والمناطقة	Date:		



Division of Water Resources

William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243 1-888-891-8332 (TDEC)

General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Site or Project Name: Greenbrier A	uto, US Hwy 41, Greenbrie	or TN	NPDES Tracking Nu	mber: TNR	243755	
Primary Permittee Name: David San			Date of Inspection:	10 15 12 0	**************************************	
Current approximate 2.33 Acres disturbed acreage:	Has rainfall been checked/do daily? Yes No	oumented	Name of Inspector:	·		
Current weather conditions:			Inspector's Training Certification Number:	143348	·	**************************************
Please check the box if the following	ig items are on-site:	The second secon		Andrea (Anthon Corns) Albert all management from		
	Stormwater Pollution Preven	tion Plan (SWPP	P) Twice-wee	kly inspectio	n docum	entation
Site contact information	Rain Gage Ø Off-site Refe	ererice Rain Gage	Location: KTNGR	EEN61		
Best Management Practices (BMPs			· · · · · · · · · · · · · · · · · · ·	**************************************		va- <del>************************************</del>
Are the Erosion Prevention and Sec	diment Controls (EPSCs) fur	otioning correc	tiv: if "No." describe b	elow in Com-	meni Se	tion
1 Are all applicable EPSCs install	ed and maintained per the SV	/PPP?			☑ Yes	□No
2. Are EPSCs functioning correctly	THE PARTY OF THE P		er section 4.1.57		Z Yes	□ No
Are EPSCs functioning correctly	at outfall/discharge points su	ch that there is no	s phiartionable color			
contrast in the receiving stream,	and no other water quality im	pacts per section	5.3.27		Z Yes	□No
4. Are EPSCs functioning correctly	at ingress/egress points such	that there is no o	evidence of track out?		🗷 Yes	□No
5. If applicable, have discharges fr section 4.1.4? If "No," describe i	celow the measures to be imp	lemented to addr	ess deficiencies.		<b>Z</b> iYes	□No
6. If construction activity at any loc days per section 3.5.3.2? If *No.	describe below each location	i and measures t	aken to stabilize the a	rea(s)	Z Yes	□No
7. pollution prevention measi 7. pollutants from equipment and v "No." describe below the measu	ehicle washing, wheel wash wash wash wash washed to add	rater, and other viess deficiencies.	rash waters per section	charge of n 4.1.57 if	🗷 Yes	□No
8. If a concrete washout facility is in If "No," describe below the measure.	sures to be implemented to ad	cress deficiencie	<b>S</b> .		☐Yes	□No
9. Have all previous deficiencies be Check if deficiencies/corrective Comment Section. If the answer is 'No	ve measures have been report	ted on a previous	form.		☑ Yes	□No
Rainfall Amounts ON SITE / OFF SITE						
Certification and Signature (must be	signed by the certified inspec	for and the narmi	ttae nor Sortinno 3 5 5	3 2 (a) and 7	7 2 of th	- CCDV
l certify under penalty of law that this submitted information is to the best of	document and all attachments f my knowledge and belief, tru	s were prepared lue, accurate, and	by me, or under my di I complete. I am awa	rection or su	pervision	The
penalties for submitting false informa	ation, including the possibility	y of fine and in enalty of century.	prisonment. As spe	cified in Te	nnessee	Code
penalties for submitting false information of the false information of	ation, including the possibility is declaration is made under p	enalty of penjury.	ade Pearson	Date:	nnessee S/20	Code



Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-886-891-8332 (TDEC)

General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Site or Project Name: Carachite	terreproperty and a second	and the second s	( mice-meckly ills	***	*	
Site or Project Name: Greenbrier /	The state of the s	oner, TN	NPDES Tracking Nu	mber: TNR	243755	
Primary Permittee Name: David Sar			Date of Inspection:	10/8/2	O	
Current approximate 2:33 Acres disturbed acreage:	Has rainfall been checked daily? Yes N	i/documented lo	Name of Inspector:	Wade Pea	rson	
Current weather conditions:			Inspector's Training Certification Number:	143348	***************************************	
Please check the box if the following	ng items are on-site:			n - Colonia di Salamania marany any amin'ny mpany mpanana.		ATTENDED TO SECURE OF A COLUMN
MANUAL STREET,	Stormwater Pollution Prev	ention Plan (SWP)	P) Z Twice-wee	kly inspection	an docum	nentation
	Rain Gage Off-site R					
Best Management Practices (BMPs		•	-	····		
Are the Erosion Prevention and Se	diment Controls (EPSCs)	functioning corre	ctiv: If "No." describe he	low in Car	mant Ca	otio.
<ol> <li>Are all applicable EPSCs install</li> </ol>	led and maintained per the	SWPPP?		21071 121 12031	☑ Yes	□ No
2. Are EPSCs functioning correctly	TO THE OWNER OF THE PARTY OF TH		per section 4.1.57	7778-214-1-1-1-1	Z Yes	
Are EPSCs functioning correctly	v at outfall/discharge points	Such that there is r	n chierianable color	······································		
contrast in the receiving stream	, and no other water quality	impacts per section	1 5.3.27		Z Yes	□No
If anathantia barre divide	y at ingress/egress points si	uch that there is no	evidence of track out?		☑ Yes	□No
SECTION 4.1.47 IT NO. DESCRIDE	below the measures to be in	mplemented to add	ress deficiencies.		<b>Z</b> Yes	□No
If construction activity at any loc days per section 3.5,3.2? If "No.	cation has temporarily/perm, "describe below each local	anently ceased, wa tion and measures	is the area stabilized wit taken to stabilize the an	ea(s)	<b>☑</b> Yes	□No
Have pollution prevention meas     pollutants from equipment and v     "No," describe below the measurement.	ures been installed, implem rehicle washing, wheel was ires to be implemented to a	ertted, and maintain h water, and other d ddress deficiencies	ned to minimize the disc wash waters per section	sharaa af	☑ Yes	□No
If a concrete washout facility is I     If "No," describe below the measure.	ocated on site, is it clearly is sures to be implemented to	dentified on the pro address deficiencie	ject and maintained?	ZIN/A	Yes	□No
9. Have all previous deficiencies by Gheck if deficiencies/corrections. If the answer is "No	ve measures have been rep	orted on a previou	s form.		<b>Z</b> ] Yes	□No
Rainfall Amounts DN SITE / OFF SITE						
		8-3-5-3-3-3-3-4-4-1-1-1-1-1-1-1-1-1-1-1-1-1-1	endage as an entragen of a management of the second and a			
Certification and Signature (must be	signed by the certified insp	ector and the perm	ittee per Sections 3.5.8.	2 (g) and 7	.7.2 of the	e CGP)
certify under penalty of law that this cubmitted information is to the best of penalties for submitting false information 39-16-702(a)(4), this	t my knowledge and belief, ation. including the possib	true, accurate, and in	complete Lam awar	a that there	anna ainm	nitional
nspector Name Wade Pearson nd Title:			ade Pearson	Date:	z/20	***************************************
rimary Permittee lame and Title:	The state of the s	Signature:		Date:		######################################
		L				



Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Pärks Ävenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

### General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Site or Project Name: Greenbrier /	Auto, US Hwy 41, Greenbi	ier, TN	NPDES Tracking Nu	imber: TNF	243755	
Primary Permittee Name: David Sar	nford	ran e a cranica commencia con con de se regimento aproprio y priprio proprio como e sensener	Date of Inspection:		2/20	den and the second distance
Current approximate 2.33 Acres disturbed acreage:	Has rainfall been checked/daily? Yes No		Name of Inspector:		and the second second second	PRINCIPAL INCIDENTAL MANAGEMENT
Current weather conditions:			Inspector's Training Certification Number:	143348	+20420+20+204203544	
Please check the box if the following	ng items are on-site:		Ave. (1.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4	THE STATE OF THE PROPERTY OF T	**************************************	**************************************
☑ Notice of Coverage (NOC) ☑	Stormwater Pollution Preve	ention Plan (SWF	PPP) Z Twice-wee	kly inspect	on docum	entation
Site contact information	Rain Gage 🛛 Off-site Re		.*	EEN61		
Best Management Practices (BMPs			- 1871 1873 (1871 - 1871 - 1872 ) of Antiber Andrews Andrews Andrews	***	na a na aman'ny proponentan'n a mpakambaphay ya ay ya	ANTONIO TERROPERATOR
Are the Erosion Prevention and Se	diment Controls (EPSCs) f	unctioning com	ectfy: If "No," describe b	elow in Cor	nment Se	ction
<ol> <li>Are all applicable EPSCs instal</li> </ol>	led and maintained per the S	WPPP?			<b>☑</b> Yes	□No
2 Are EPSCs functioning correctly					☑ Yes	□No
<ol> <li>Are EPSCs functioning correctly contrast in the receiving stream</li> </ol>	y at outfall/discharge points s , and no other water quality i	uch that there is mpacts per secti	na objectionable color on 5.3.2?	77	☑ Yes	□No
4. Are EPSCs functioning corrects					☑ Yes	□ No.
5. If applicable, have discharges fi section 4,1,4? If "No," describe	below the measures to be in	plemented to ad	dress deficiencies.		☑ Yes	□ No
6. If construction activity at any loc days per section 3.5.3.2? If "No	," describe below each locati	on and measure:	s taken to stabilize the a	rea(s)	☑ Yes	□No
Have pollution prevention meas pollutants from equipment and "No," describe below the measurement of the mea	vehicle washing, wheel wash ures to be implemented to ad	water, and other dress deficiencies	r wash wate <i>r</i> s per sections.	charge of n 4.1.57 If	<b>☑</b> ]Yes	□No
If a concrete washout facility is     If "No," describe below the mea	sures to be implemented to a	iddress deficienc	ies.	<b>Z</b> IN/A	□Yes	□No
9. Have all previous deficiencies b	een addressed? If "No," des ve measures have been repo	cribe remaining or orted on a previo	leficiencies in Comment us form.	section.	☑ Yes	□No
Rainfall Amounts ON SITE / OFF SITE						
Certification and Signature (must be	a cionad hu tha cartified incre	exter and the nee	million ner Englishen 9 E 1		TTALER	- 200
்ட் உ∨ய் ட் உயய் ம்கோர்கள் காக காக கூடி <b>இந்த சுரும் சுரும் இரு</b>	was new by new bustones indicate	with auth nichtel	minee her decirons 3.5.6	>~ (A) 9UQ	ចុ <i>ច¥</i> <b>ទ</b> ាញ	
I certify under penalty of law that this submitted information is to the best o penalties for submitting false inform	of my knowledge and belief, lation, including the possible	true, accurate, a lity of fine and	nd complete. I am awa imprisonment. As spe	re that ther	e are sid	n. The
I certify under penalty of law that this submitted information is to the best of penalties for submitting false inform Annotated Section 39-16-702(a)(4), the Inspector Name Wade Péarson and Title:	of my knowledge and belief, lation, including the possible	true, accurate, a lity of fine and penalty of penjur	nd complete. I am awa imprisonment. As spe	re that ther	e are sig ennessee	n. The nificant r Code



Division of Water Resources
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#### General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

			•	And the control of th
Site or Project Name: Greenbrier Auto, US Hwy 41, Greenbr	ier, TN N	IPDES Tracking Nur	nber: TNR 24375	5
Primary Permittee Name: David Sanford		ate of Inspection:	10/15/20	
Current approximate disturbed acreage: 2.33 Acres Has rainfall been checked/cdaily? Yes No		lame of Inspector: V	Wade Pearson	
Current weather conditions:		nspector's Training Lertification Number.	143348	
Please check the box if the following items are on-site:				Participated and the second participated and the pa
☑ Notice of Coverage (NOC) ☑ Stormwater Pollution Preve	ention Plan (SWPPP)	☑ Twice-weel	kly inspection docu	mentation
Site contact information Rain Gage Off-site Re	ference Rain Gage I	ocation: KTNGRE	EN61	
Best Management Practices (BMPs):		And the second s	**************************************	CONTROL DE SERVICIO DE LA CONTROL DE LA CONT
Are the Erosion Prevention and Sediment Controls (EPSCs) for	unctioning correctly	/: If "No," describe be	low in Comment S	Section
<ol> <li>Are all applicable EPSCs installed and maintained per the S</li> </ol>	Manual Control of the		<b>☑</b> Ye:	s 🗆 No
<ol><li>Are EPSCs functioning correctly at all disturbed areas/mater</li></ol>			<b>☑</b> Ye	s 🗆 No
<ol> <li>Are EPSCs functioning correctly at outfall/discharge points s contrast in the receiving stream, and no other water quality in</li> </ol>	such that there is no o	objectionable color	Z Ye	s 🗆 No
Are EPSCs functioning correctly at ingress/egress points sur			<b>Z</b> Ye:	
f applicable, have discharges from dewatering activities bee	n managed by appro	poriale controls per		
section 4.1.47 If "No," describe below the measures to be in	plemented to addres	ss deficiencies.	☑ Ye:	i □No
<ol> <li>If construction activity at any location has temporarily/perma days per section 3.5.3.27 if "No," describe below each location.</li> </ol>	on and measures tal	en to stabilize the an	ea(s)	s □No
Have pollution prevention measures been installed, impleme pollutants from equipment and vehicle washing, wheel washing, wheel washing, wheel washing, wheel washing washing to be implemented to ad-	water, and other wa Idress deficiencies.	sh waters per section	charge of 14.1.57 If <b>2</b> Yes	3 🔲 No
If a concrete washout facility is located on site, is it clearly id     If "No," describe below the measures to be implemented to a	address deficiencies.		☑N/A □Yes	. □No
9. Have all previous deficiencies been addressed? If "No," design Check if deficiencies/corrective measures have been repr	cribe remaining defic orted on a previous f	iencles in Comment : orm.	section. 🛛 Yes	I □No
Otherwise, describe any pertinent observations:  Rainfall Amounts ON SITE / OFF SITE				
Certification and Signature (must be signed by the certified inspe	ector and the permitte	ee per Sections 3.5.8	.2 (a) and 7.7.2 of	the CGP)
I certify under penalty of law that this document and all attachmer submitted information is to the best of my knowledge and belief, penalties for submitting false information, including the possible Annotated Section 39-16-702(a)(4), this declaration is made under	nts were prepared by true, accurate, and d lity of fine and imp	me, or under my die complete. I am awai	rection or supervisite that there are s	ion. The
Inspector Name Warte Pearson	61.	1. 0.	Date: , ,	
and Title:	Wa	de Pearson	10/15/2	20



Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

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Site or Project Name: Greenbrier Auto, US Hwy 41, Green	nbrier, TN	NPDES Tracking Nur	nber: TNR 2	43755	
Primary Permittee Name: David Sanford	A Pagent Managary L	Date of Inspection;	10/19	120	77. m.
Current approximate 2.33 Acres Has rainfall been checke daily? Yes	ed/documented No	Name of Inspector: V	Vade Pears		***************************************
Current weather conditions:		Inspector's Training Certification Number:	143348		~
Please check the box if the following items are on-site:	The second secon		arrante de la compansión de la compansió		
☑ Notice of Coverage (NOC) ☑ Stormwater Pollution Pre	evention Plan (SWPP	P) Z Twice-week	dy inspection	docum	entation
Site contact information Rain Gage Off-site	Reference Rain Gag	Location: KTNGRE	EN61		
Best Management Practices (BMPs):		Vertices and development and analysis of the first for the first of	The second secon		
Are the Erosion Prevention and Sediment Controls (EPSCs	) functioning correc	tly: if "No," describe be	low in Comm	ent Ser	ction
1. Are all applicable EPSCs installed and maintained per the	s SWPPP?			Yes	□No
2. Are EPSCs functioning correctly at all disturbed areas/ma	iterial storage areas p	er section 4,1,5?		Yes	□No
<ol> <li>Are EPSCs functioning correctly at outfall/discharge point contrast in the receiving stream, and no other water qualit</li> </ol>	ts such that there is n ty impacts per section	o objectionable color 5.3.2?	Ø	Yes	□No
4. Are EPSCs functioning correctly at ingress/egress points	such that there is no	evidence of track out?	Q	Yes	□No
6 If applicable, have discharges from dewatering activities be section 4.1.4? If "No." describe below the measures to be	implemented to add	ess deficiencies.		Yes	□No
If construction activity at any location has temporarily/perr days per section 3.5.3.27 if "No," describe below each loc	cation and measures (	aken to stabilize the are	ea(s) 🔀	] Yes	□No
Have pollution prevention measures been installed, imple pollutants from equipment and vehicle washing, wheel wa "No," describe below the measures to be implemented to	ish water, and other valderes deficiencies.	vash waters per section	harge of 4.1.57 If Z	] Yes	□No
<ol> <li>If a concrete washout facility is located on site, is it clearly if "No," describe below the measures to be implemented to</li> </ol>	ridentified on the proj to address deficiencie	ect and maintained?		]Yes	□No
Have all previous deficiencies been addressed? If "No," d  Check if deficiencies/corrective measures have been a  Comment Section. If the answer is "No" for any of the above, pla	eported on a previous	form.	MZ.	Yes	□ No.
Rainfall Amounts ON SITE / OFF SITE					
	FN-75		f <del>2&gt;1700-</del> 7-7-7-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-		
Certification and Signature (must be signed by the certified ins	spector and the perm	ttee per Sections 3.5.8.	2 (g) and 7.7.	2 of the	CGP)
I certify under penalty of law that this document and all attacher submitted information is to the best of my knowledge and belie penalties for submitting false information, including the poss Annotated Section 39-16-702(a)(4), this declaration is made und	of, true, accurate, and sibility of fine and in	complete. I am awan	e that there a	re sior	ificant
nspector Name and Title: Wade Pearson		ade Pearson	Date: / <i>O</i> //*	9/21	)
Primary Permittee Name and Title:	Signature:		Date:	aingt Section	
		<u></u>			



Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO		,	ow treekij ma			
Site or Project Name: Greenbrier A	ruto, US Hwy 41, Greenbrier, 1	TN NP	DES Tracking Nur	nber: TNR 24	3755	1.04
Primary Permittee Name: David San	ford	Da	e of Inspection:	10/12/20	<del></del>	······································
Current approximate 2.33 Acres disturbed acreage:	Has rainfall been checked/docur daily? Yes No	mented Na	ne of Inspector: V	Vade Pearso	n	i verme dei deren ist in jag in
Current weather conditions:			pector's Training tification Number:	143348	<del>derland</del> en om 1 og gregger	On Care Str. Care Care Care Care Care Care Care Care
Please check the box if the following	ng items are on-site:		14) 110 110 110 110 110 110 110 110 110 11	andrighteen or fact of their militations we make you say	Alle Maddle de la reconside	William Will harring against a
where a	Stormwater Pollution Prevention	Plan (SWPPP)	☑ Twice-weel	dy inspection o	lacum	entation
Site contact information.	Rain Gage 🛛 Off-site Referen	ice Rain Gage Lo	cation: KTNGRE	EN61		
Best Management Practices (BMPs		*	\$1901.11 is 60.62 decembers are second-second		****	
Are the Erosion Prevention and Sec	diment Controls (EPSCs) functi	oning correctly:	if "No." describe be	low in Comme	nt Ser	dian
1. Are all applicable EPSCs install	ed and maintained per the SWPP	P?			Yes	□ No
	rat all disturbed areas/material str		ection 4.1.5?		Yes	□No
Are EPSCs functioning correctly	at outfall/discharge points such t	hat there is no ob	ectionable color			
contrast in the receiving stream	and no other water quality impac	ts per section 5.3.	2?	W	Yes	□No
	at ingress/egress points such the			Ø	Yes	□No
section 4.1.4? If "No," describe t	om dewatering activities been ma below the measures to be implem	ented to address	deficiencies.		Yes	□No
days per section 3.5.3.2? If "No,	ation has temporarily/permanentl " describe below each location an	id measures takei	to stabilize the an	≥a(s) Ki	Yes	□No
/ pollutants from equipment and v "No;" describe below the measu	ures been installed, implemented, rehicle washing, wheel wash wate ires to be implemented to address	r, and other wash deficiencies.	waters per section	sharge of 4.1.57 If <b>2</b>	Yes	□No
If a concrete washout facility is in if "No," describe below the measure.	ocated on site, is it clearly identific sures to be implemented to addre	ed on the project a ss deficiencies.			Yes	□No
9. Have all previous deficiencies be Check if deficiencies/corrective	een addressed? If "No," describe ve measures have been reported	remaining deficie on a previous for	ncies in Comment : n.	section.	Yes	□No
Rainfall Amounts DN SITE / OFF SITE						
reaction flations	and the second s	·-				
Certification and Signature (must be	signed by the certified inspector a	and the permittee	per Sections 3.5.8.	2 (g) and 7.7.2	of the	CGP)
l certify under penalty of law that this submitted information is to the best of penalties for submitting false informa Annotated Section 39-16-702(a)(4), thi	f my knowledge and belief, true, . ation, including the possibility o	accurate, and cor f fine and impris	nplete. I am awar	e that there ar	e siar	ificant
Inspector Name Wade Pearson and Title:			le Pearson	Date:	120	*
Primary Permittee Name and Title:	Sign	ature:		Date:	4	***************************************



Division of Water Resources

William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243 1-888-891-6332 (TDEC)

#### General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Site or Project Name: Greenbrier	Auto, US Hwy 41, Greenbri	er, TN	NPDES Tracking Nu	nber: TNR	243755	
Primary Permittee Name: David Sar	nford	the state of the s	Date of Inspection:	10/26/	20	<u>.</u>
Current approximate 2.33 Acres disturbed acreage:	Has rainfall been checked/d daily? Yes No		Name of Inspector: \		**********	WASSESSES VAN THE CONTRACT OF
Current weather conditions:		- The Part of the State of the	Inspector's Training Certification Number:	143348		***************************************
Please check the box if the followi	ng items are on-site:	different de Martin de Arta de	44 45 45 45 45 45 45 45 45 45 45 45 45 4	lear-arrayeres-relian metarmon municipal		***
Notice of Coverage (NOC)	Stormwater Pollution Preve	ntion Plan (SWPF	PP)	kly inspectio	n dacum	entation
Site contact information	] Rain Gage  ☑ Off-site Rei	ference Rain Gag	e Location: KTNGRE	EN61		
Best Management Practices (BMP	s);		code to the condition of the collection of any and produced project property and	***************************************	·····	
Are the Erosion Prevention and Se		inctioning correc	tly: If No, * describe be	low in Com	ment Sec	xtion
1. Are all applicable EPSCs insta				***************************************	ZI Yes	□No
2. Are EPSCs functioning correct	y at all disturbed areas/materi	al storage areas :	per section 4.1.5?		☑ Yes	□No
3. Are EPSCs functioning correct				2. Martin - Ersteinstein (d. 12. 12. 12. 12. 12. 12. 12. 12. 12. 12		
contrast in the receiving stream	<ol> <li>and πο other water quality in</li> </ol>	npacts per section	1 5.3.2?		<b>Z</b> ] Yes	□No
4. Are EPSCs functioning correcti					☑ Yes	□No
5. If applicable, have discharges f section 4.1.4? If "No," describe	below the measures to be im	plemented to add	ress deficiencies.		☑ Yes	□No
6. If construction activity at any lo days per section 3.5.3.2? If *No	," describe below each location	on and measures	taken to stabilize the ar	ea(s)	☑ Yes	□No
7. pollutants from equipment and "No," describe below the meas	vehicle washing, wheel wash ures to be implemented to add	water, and other of the state o	wash waters per section	charge of 14.1.5? If	☑ Yes	□No
8 If a concrete washout facility is If "No," describe below the mea	located on site, is it clearly ide isures to be implemented to a	entified on the pro ddress deficiencie	ject and maintained?		□Yes	□No
Have all previous deficiencies to Check if deficiencies/correct	been addressed? If "No," desc ive measures have been repo	cribe remaining de inted on a previou	ficiencies in Comment : s form.	section.	<b>Z</b> ] Yes	□No
Rainfall Amounts ON SITE / OFF SITE  0.6" / 0.5"						
Certification and Signature (must b	e slaned by the certified inspe	ctor and the pent	ittee per Sections 3.5.8	2 (c) and 7	7.2 of th	e CGP)
I certify under penalty of law that this submitted information is to the best of penalties for submitting false inform Annotated Section 39-16-702(a)(4), ti	document and all attachment of my knowledge and belief, t nation, including the possibil	its were prepared true, accurate, an lity of fine and it	by me, or under my di d complete. I am awai mprisonment. As spe	rection or su	pervision	n. The nificant
Inspector Name Wade Pearson and Title:			Pade Pearson	Date:	26/20	0
Primary Permittee Name and Title:		Signature:		Date:	A CONTRACTOR OF THE CONTRACTOR	
And and the property of the second se					~	



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### General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

			1 1.001(1) 1110	Poorions;	
Site or Project Name: Greenbrier	Auto, US Hwy 41, Greenb	rier, TN	NPDES Tracking Nur	mber: <b>TNR</b> 2437	55
Primary Permittee Name: David Sar	nford		Date of Inspection:	10/29/20	THE THE PERSON NAMED AND ADDRESS OF THE PERSON NAMED AND ADDRE
Current approximate 2.33 Acres disturbed acreage:	Has rainfall been checked daily? Yes N		Name of Inspector: V	***************************************	***************************************
Current weather conditions:		A CONTRACTOR OF THE PROPERTY O	Inspector's Training Certification Number:	143348	·
Please check the box if the following	ng Items are on-site:		, , , , , , , , , , , , , , , , , , ,	**************************************	
☑ Notice of Coverage (NOC) ☑	Stormwater Pollution Prev	ention Plan (SWPI	PP) <b>V</b> Twice-week	dy inspection doc	umentation
Site contact information	Rain Gage 🛛 Off-site R	eference Rain Gag	ge Location: KTNGRE	EN61	
Best Management Practices (BMPs		•	·		er-er-e mendele de melypphysiquelesses
Are the Erosion Prevention and Se	diment Controls (EPSCs)	unctioning corre	ctly: If "No," describe be	low in Comment	Section
Are all applicable EPSCs instal	led and maintained per the S	SWPPP?		ZY	
<ol><li>Are EPSCs functioning correctly</li></ol>				<b>Z</b> Ye	<del></del>
<ol> <li>Are EPSCs functioning correctly contrast in the receiving stream</li> </ol>	y at outfall/discharge points : , and no other water quality	such that there is r impacts per section	no objectionable color n 5.3.2?	<b>Ø</b> Ye	
<ol> <li>Are EPSCs functioning correctly</li> </ol>				<b>☑</b> Y€	s 🗆 No
5. If applicable, have discharges fi section 4.1.4? If "No," describe	rom dewatering activities bed below the measures to be in	en managed by ap	propriate controls per Iress deficiencies	<b>⊿</b> Ye	
6. If construction activity at any loc days per section 3.5.3.2? If "No	cation has temporarily/perma ," describe below each locat	inently ceased, water	is the area stabilized wit taken to stabilize the are	as(s)	s 🗆 No
Have pollution prevention meas 7. pollutants from equipment and v "No," describe below the measu	ures been installed, implementation washing, wheel washing, wheel washings to be implemented to ac	ented, and maintain water, and other Idress deficiencies	ined to minimize the disc wash waters per section	harda of	s 🗆 No
If a concrete washout facility is I     If "No," describe below the mean	located on site, is it clearly id sures to be implemented to	lentified on the pro address deficienci	es.	ØN/A □Ye	s 🗌 No
<ol> <li>Have all previous deficiencies b</li> <li>Check if deficiencies/correction</li> </ol>	eeл addressed? If "No," des ve measures have been гер	cribe remaining de orted on a previou	eficiencies in Comment s s form.	section. Z Ye	s 🔲 No
Rainfall Amounts ON SITE / OFF SITE					
Certification and Signature (must be	signed by the certified inco	antar and the same	itto on Sertion 25 a	2(-)	7.00 O.D.
I certify under penalty of law that this submitted information is to the best o penalties for submitting false inform Annotated Section 39-16-702(a)(4), the	document and all attachment f my knowledge and belief, ation, including the possible	nts were prepared true, accurate, an lity of fine and in	by me, or under my din d complete. I am aware morisonment. As spec	ection or supervi	sion. The
Inspector Name Wade Pearson and Title:	The second secon		Pade Pearson	Date: //29/	27)
Primary Permittee Name and Title:	***************************************	Signature:		Date:	



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#### General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Site or Project Name: Greenbrier /	Supplied in the contract of th		NPDES Tracking Nun	***************************************	3755.	*T#8***********************************
Primary Permittee Name: David Sar	inclination of the control of the co	genegger engligerele de fair van ten ten 1881 1881 1881-1880 1880-1880 1880-	Date of Inspection:	11/2/20		
Current approximate 2:33 Acres disturbed acreage:	Has rainfall been checked/o		Name of Inspector: V			
Current weather conditions:			Inspector's Training Certification Number:	143348	PAT - militario Mennesanti de namalindo de	
Please check the box if the following	ng items are on-site:	Phononomen on highly or make the make to come	and the state of t	***************************************	**************************************	
	Stormwater Pollution Preve	ntion Plan (SV	MPPP)	ly inspection	dacume	ntation
10000	] Rain Gage ☑ Off-site Re					
Best Management Practices (BMPs	R);		THE STATE OF THE S	and an entire of the first of t		
Are the Erosion Prevention and Se			rrectly: If "No." describe be	low in Commi	ent Sect	ion
Are all applicable EPSCs instal	led and maintained per the S	WPPP?		2	Yes	□No
2. Are EPSCs functioning correctly				Q	Yes	□No
<ol> <li>Are EPSCs functioning corrects contrast in the receiving stream</li> </ol>	y at outfall/discharge points s , and no other water quality in	uch that there noacts per se	is no objectionable color ction 5.3.2?	Z	Yes	□No
4. Are EPSCs functioning correctly				Z	Yes	□No
5. If applicable, have discharges from dewatering activities been managed by appropriate controls per section 4.1.4? If "No," describe below the measures to be implemented to address deficiencies.					Yes	□No
6. If construction activity at any loc days per section 3.5.3.27 if "No	," describe below each location	on and measu	res taken to stabilize the are	ea(s)	] Yes	□No
Have pollution prevention meas pollutants from equipment and "No," describe below the measi	vehicle washing, wheel wash ares to be implemented to ad	water, and ot dress deficien	her wash waters per section cles:	harge of 4.1.5? If Z	Yes	□No
If a concrete washout facility is     If "No." describe below the mea	sures to be implemented to a	iddress deficie	ncies.		Yes	□No
<ol> <li>Have all previous deficiencies b</li> <li>Check if deficiencies/correct</li> </ol>	een addressed? If "No," desc ive measures have been repo	xibe remainin Inted on a prev	g deficiencles in Comment s vious form.	section. Z	]Yes	□No
Comment Section. If the answer is "N Otherwise, describe any pertinent obt	o for any of the above, pleas servations:	e describe the	problem and corrective act	ions to be tak	en.	A COLUMN TO THE PARTY OF THE PA
Rainfall Amounts ON SITE / OFF SITE						
<u> </u>						
Certification and Signature (must be	e signed by the certified inspe	ctor and the r	permittee per Sections 3.5.8.	2 (g) and 7.7	2 of the	CGP)
I certify under penalty of law that this submitted information is to the best of penalties for submitting false inform Annotated Section 39-16-702(a)(4), the	document and all attachments from the control of th	nts were prepa true, accurate lity of fine ar	ared by me, or under my dir , and complete. I am awar nd imprisonment. As sper	ection or sup e that there a	ervision. are signi	The
Inspector Name Wade Pearson and Title:	<b>THE ON</b> TO BE A COMMON THE PROPERTY OF THE PR	Signature:	Wade Pearson	Date: 11/2/	20	
Primary Permittee Name and Title		Signature:		Date:	And guidelines realisticines researchilles are	



Division of Water Resources
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1-888-891-8332 (TDEC)

### General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Site or Project Name: Greenbrier Auto, US Hwy 41, Greenbr	er, TN NPDES Tracking Number: TNR 243755			
Primary Permittee Name: David Sanford	Date of Inspection: 11/5/20			
Current approximate disturbed acreage: 2.33 Acres Has rainfall been checked/daily? Yes No	ocumented Name of inspector: Wade Pearson			
Current weather conditions:	Inspector's Training Certification Number: 143348			
Please check the box if the following items are on-site:				
Notice of Coverage (NOC) Stormwater Pollution Preve	8			
Site contact information Rain Gage Off-site Re	erence Rain Gage Location: KTNGREEN61			
Best Management Practices (BMPs):				
Are the Erosion Prevention and Sediment Controls (EPSCs) f	nctioning correctly: If "No," describe below in Comment Section			
<ol> <li>Are all applicable EPSCs installed and maintained per the S</li> </ol>	NPPP? Z Yes No			
2. Are EPSCs functioning correctly at all disturbed areas/mater	al storage areas per section 4.1.5?			
<ol> <li>Are EPSCs functioning correctly at outfall/discharge points s contrast in the receiving stream, and no other water quality i</li> </ol>	uch that there is no objectionable color npacts per section 5.3.2?			
4. Are EPSCs functioning correctly at ingress/egress points su	h that there is no evidence of track out?			
5. If applicable, have discharges from dewatering activities been section 4.1.4? If "No," describe below the measures to be in	plemented to address deficiencies.			
6. If construction activity at any location has temporarily/permanently ceased, was the area stabilized within 14 days per section 3.5.3.2? If "No," describe below each location and measures taken to stabilize the area(s)				
Have pollution prevention measures been installed, implement pollutants from equipment and vehicle washing, wheel washing, wheel washing, wheel washing washing and prevented to accomplemented to accomplemented to accomp	water, and other wash waters per section 4.1.5? If Ves No tress deficiencies.			
g. If a concrete washout facility is located on site, is it clearly identified on the project and maintained?   If "No," describe below the measures to be implemented to address deficiencies.				
Have all previous deficiencies been addressed? If 'No, '' des     Check if deficiencies/corrective measures have been rep				
Otherwise, describe any pertinent observations:  Rainfall Amounts ON SITE / OFF SITE				
I certify under penalty of law that this document and all attachme submitted information is to the best of my knowledge and belief, penalties for submitting false information, including the possib Annotated Section 39-16-702(a)(4), this declaration is made under	ctor and the permittee per Sections 3.5.8.2 (g) and 7.7.2 of the CGP) its were prepared by me, or under my direction or supervision. The rue, accurate, and complete. I am aware that there are significant ity of fine and imprisonment. As specified in Tennessee Code penalty of perjury.			
Inspector Name Wade Pearson and Title:	Signature: Wade Pearson Date: 11/5/20			
Primary Permittee Name and Title:	Signature: Date:			



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### General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

City on Daylor by the control of the	10 mm - 10 mm	Approximate to the control of the co	Manager ar white days have
Site or Project Name: Greenbrier Auto, US Hwy 41, Greenbrier, TN	NPDES Tracking Nun	iber: TNR 243755	
Primary Permittee Name: David Sanford	Date of Inspection:	11/9/20	
Current approximate disturbed acreage: 2.33 Acres Has rainfall been checked/document daily? Yes No	ted Name of Inspector: V	Vade Pearson	
Current weather conditions:	Inspector's Training Certification Number:	143348	·····
Please check the box if the following items are on-site:	man Alexander er renge, i a man g. i amman ar anna man man man man man de de distillation de de distillation de		
☑ Notice of Coverage (NOC) ☑ Stormwater Pollution Prevention Pte	in (SWPPP)	ly inspection docum	entation
Site contact information	Rain Gage Location: KTNGRE	EN61	
Best Management Practices (BMPs):	THE RESIDENCE OF THE PROPERTY	40460McArchitecture and an artistic and a second and a se	
Are the Erosion Prevention and Sediment Controls (EPSCs) functions	ng correctly: If "No," describe be	low in Comment Se	ction
1. Are all applicable EPSCs installed and maintained per the SWPPP?		☑ Yes	□No
2: Are EPSCs functioning correctly at all disturbed areas/material storage	te areas per section 4,1,5?	☑Yes	□No
Are EPSCs functioning correctly at outfall/discharge points such that	there is no objectionable color		
contrast in the receiving stream, and no other water quality impacts p	er section 5.3.2?	<b>☑</b> Yes	□No
4. Are EPSCs functioning correctly at ingress/egress points such that the		☑ Yes	□No
If applicable, have discharges from dewatering activities been manag section 4.1.4? If "No," describe below the measures to be implement	ed to address deficiencies.	☑ Yes	□No
<ol> <li>If construction activity at any location has temporarily/permanently ce days per section 3.5.3.2? If "No," describe below each location and re</li> </ol>	reasures taken to stabilize the are	ea(s)	□No
Have pollution prevention measures been installed, implemented, an pollutants from equipment and vehicle washing, wheel wash water, a "No," describe below the measures to be implemented to address de	nd other wash waters per section	harge of 4.1.5? If Yes	□No
B. If a concrete washout facility is located on site, is it clearly identified of if "No," describe below the measures to be implemented to address of the implementation of th	in the project and maintained? reficiencies.	☑N/A □Yes	□No
9. Have all previous deficiencies been addressed? If "No." describe rem  Check if deficiencies/corrective measures have been reported on	aining deficiencies in Comment s a previous form.	ection.   Yes	□No
Otherwise, describe any pertinent observations:  Rainfall Amounts ON SITE / OFF SITE			
Certification and Signature (must be signed by the certified inspector and	the nerrittee ner Centinne ? E &	2 Int and 7 7.2 AFile	a 000
I certify under penalty of law that this document and all attachments were submitted information is to the best of my knowledge and belief, true, acceptables for submitting false information, including the possibility of fit Annotated Section 39-16-702(a)(4), this declaration is made under penalty.	prepared by me, or under my direction of the surface and complete. I am aware the and imprisonment. As specific	ection or supervision that there are significant	n. The
Inspector Name Wade Pearson Signatu		Date: ///9/20	)
Primary Permittee Signatu Name and Titte:	re:	Date:	



Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

### General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Construction S	tormwater inspection	Certification	(Twice-Weekly Ins	pections)		
Site or Project Name: Greenbrier /	luto, US Hwy 41, Greenb	ner, TN	NPDES Tracking Nur	nber: TNR 2	43755	
Primary Permittee Name: David Sar	ford	Account of a second	Date of Inspection:	11/12/2	0	
Current approximate 2.33 Acres disturbed acreage	Has rainfall been checked/ daily? Yes No		Name of Inspector: V	***************************************	and the second s	
Current weather conditions:		g an ann an a s <del>ain</del> neach ann ann ann ann ann ann ann ann an ann an a	Inspector's Training Certification Number:	143348	*****	***************************************
Please check the box if the following	ng items are on-site:		encontroller on the state of th	renter erre e Processoria de Salabaja de la Procesión de la como grapa da Agray e	<b>***</b>	
	Stormwater Pollution Previ	ention Plan (SWPF	(P) Vice-week	dy inspection	documentat	ion
	Rain Gage Ø Off-site Re					
Best Management Practices (BMPs		•	- mphyrolodid mae yn armenna ar en anna anna anna anna anna anna	42)43)4)-6)-6	*****************************	++******
Are the Erosion Prevention and Se	diment Controls (EPSCs) f	unctioning corre	tiv: If "No." describe be	low in Comm	ent Section	400
Are all applicable EPSCs install	ed and maintained per the S	WPPP?		***************************************	ZYes □N	un.
2. Are EPSCs functioning correctly	at all disturbed areas/mater	rial storage areas r	per section 4.1.5?	***************************************	ZYes □N	
Are EPSCs functioning correctly	at outfall/discharge points s	such that there is n	o objectionable color			
contrast in the receiving stream	, and no other water quality i	mpacts per section	5.3.2?	K	∄Yes □N	10
Are EPSCs functioning correctly				Q.	]Yes □N	lo
5. If applicable, have discharges fr section 4.1.4? If "No," describe	below the measures to be in	plemented to add	ress deficiencies.		∐Yes □N	ło
<ol> <li>If construction activity at any loc days per section 3.5.3.2? If "No</li> </ol>	" describe below each locati	on and measures	taken to stabilize the an	ea(s) 🔀	]Yes □N	lo
Have pollution prevention meas pollutants from equipment and "No," describe below the measurement of the property of the prope	rehicle washing, wheel wash tres to be implemented to ac	water, and other lidress deficiencies	vash waters per section	charge of 4.1.5? If	ŽYes □ N	lo
<ol> <li>If a concrete washout facility is If "No," describe below the mea</li> </ol>	ocated on site, is it clearly id sures to be implemented to	entified on the pro address deficiencie	ect and maintained?	ØN/A	]Yes $\square$ N	lo
9. Have all previous deficiencies b  Check if deficiencies/correcti	een addressed? If "No," des ve measures have been ren	cribe remaining de	ficiencies in Comment	section.	]Yes □N	lo
Comment Section. If the answer is "Ni Otherwise, describe any pertinent obs	o" for any of the above, pleas			ions to be tak	(en.	*****
Rainfall Amounts ON SITE / OFF SITE  O. 1 / O. 12						THE REAL PROPERTY OF THE PROPE
Certification and Signature (must be	signed by the certified insp	ector and the perm	ittee per Sections 3.5.8	.2 (g) and 7.7	.2 of the CG	P)
I certify under penalty of law that this submitted information is to the best of penalties for submitting false inform Annotated Section 39-16-702(a)(4), the	f my knowledge and belief, ation, including the possib	true, accurate, an litty of fine and in	d complete. I am awar mprisonment. As spec	e that there :	are significa:	nt i
Inspector Name Wade Pearson and Title:	The second secon	Signature: U	ade Pearson	Date: ///2	/20	
Primary Permittee	orania mana na mangang na magana na mana mana	Signature:	NO ANT THE THEORY THE PROTECT TO THE THE TEST WEIGHT AND	Date	Annaman an ann an ann an an an an an an an an	

Name and Title:



Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

# General NPDES Permit for Stermwater Discharges from Construction Activities (CGP) Construction Stormwater Inspection Certification (Twice-Weekly Inspections)

Site or Project Name: Greenbrier Auto, US Hwy 41, Green	brier, TN	NPDES Tracking Num	nber: TNR 243755	
Primary Permittee Name: David Sanford	With the state of	Date of Inspection:	11/16/20	
Current approximate 2.33 Acres Has rainfall been checker daily? Yes !!	d/documented No	Name of Inspector: V		
Current weather conditions:		Inspector's Training Certification Number:	143348	
Please check the box if the following items are on-site:		A Proposition of the state of t	ni'r ar ' en millin ei terrago ar y ag e ag ag a Beagadhaddalachan marainn acann ann a	
Notice of Coverage (NOC) Stormwater Pollution Pre	vention Plan (SWP	PP) Z Twice-week	ly inspection docum	entation
Site contact information	Reference Rain Ga	e Location KTNGRE	EN61	
Best Management Practices (BMPs):	• •	- Microsophic Production (see sub-section page agree) and read		-41-74-7
Are the Erosion Prevention and Sediment Controls (EPSCs)	functioning corre	ctly: if "No." describe be	low in Comment Se	ction
1. Are all applicable EPSCs installed and maintained per the	SWPPP?	THE RESIDENCE OF THE PARTY OF T	☑ Yes	□No
2. Are EPSCs functioning correctly at all disturbed areas/mat	terial storage areas	per section 4.1.5?	Z Yes	□No
3 Are EPSCs functioning correctly at outfall/discharge points	such that there is	no objectionable color		
contrast in the receiving stream, and no other water quality	y impacts per sectio	n 5.3.2?	☑ Yes	□No
4. Are EPSCs functioning correctly at ingress/egress points s	such that there is no	evidence of track out?	☑ Yes	□No
5. If applicable, have discharges from dewatering activities be section 4.1.4? If "No," describe below the measures to be	implemented to add	fress deficiencies.	<b>∠</b> Yes	□No
<ol> <li>If construction activity at any location has temporarily/perm days per section 3.5.3.27 if "No," describe below each location.</li> </ol>	nanently ceased, wa ation and measures	as the area stabilized with taken to stabilize the are	hin:14 ☑ Yes ∋a(s)	□No
<ol> <li>Have pollution prevention measures been installed, implen</li> <li>pollutants from equipment and vehicle washing, wheel was "No," describe below the measures to be implemented to a</li> </ol>	sh water, and other	wash waters per section	harge of 4.1.5? If ☑ Yes	□No
8. If a concrete washout facility is located on site, is it clearly If "No," describe below the measures to be implemented to	identified on the pro address deficienci	ect and maintained?	☑N/A □Yes	□No
9. Have all previous deficiencies been addressed? If "No," de Check if deficiencies/corrective measures have been re	escribe remaining di ported on a previou	eficiencies in Comment s is form.	ection. Z Yes	□ No
Otherwise, describe any pertinent observations:  Rainfall Amounts ON SITE / OFF SITE				
.2", .15"				
Certification and Signature (must be signed by the certified ins	pector and the perr	nittee per Sections 3.5.8.	2 (g) and 7.7.2 of th	e CGP)
I certify under penalty of law that this document and all attachm submitted information is to the best of my knowledge and belief penalties for submitting false information, including the possi Annotated Section 39-16-702(a)(4), this declaration is made under	ents were prepared f, true, accurate, ar ibility of fine and	I by me, or under my din nd complete. I am awan imprisonment. As spec	ection or supervisio	n. The
Inspector Name and Title:		Jade Pearson	Date: ///6/20	)
Primary Permittee Name and Title:	Signature	v.,	Date:	<del></del>



Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

A CONTRACTOR OF THE PROPERTY O			
Site or Project Name: Greenbrier Auto, US Hwy 41, Green	nbrier, TN NPDES Tracking Number: TNR	243755	Phil Bar Suddenis Spilitaly ya Musu muma
Primary Permittee Name: David Sanford	Date of Inspection:	1/20	·····
Current approximate 2.33 Acres Has rainfall been checked daily? Yes		-	
Current weather conditions:	Inspector's Training Certification Number: 143348	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	***************************************
Please check the box if the following items are on-site:	Control of the Contro		
☑ Notice of Coverage (NOC) ☑ Stormwater Pollution Pri	evention Plan (SWPPP)	on docum	entation
	Reference Rain Gage Location: KTNGREEN61		
Best Management Practices (BMPs):	The state of the s	<del></del>	
Are the Erosion Prevention and Sediment Controls (EPSCs	s) functioning correctly: If "No," describe below in Com	ment Se	ction
1. Are all applicable EPSCs installed and maintained per the		Z Yes	□No
2. Are EPSCs functioning correctly at all disturbed areas/ma	aterial storage areas per section 4.1.5?	<b>☑</b> Yes	□No
<ol> <li>Are EPSCs functioning correctly at outfall/discharge point contrast in the receiving stream, and no other water quali</li> </ol>	ts such that there is no objectionable color ty impacts per section 5.3.2?	☑ Yes	□No
4. Are EPSCs functioning correctly at ingress/egress points	such that there is no evidence of track out?	☑ Yes	□No
<ol> <li>If applicable, have discharges from dewatering activities I section 4.1.47 If "No," describe below the measures to be</li> </ol>	been managed by appropriate controls per e implemented to address deficiencies.	☑ Yes	□No
<ol> <li>If construction activity at any location has temporarily/per days per section 3.5.3.2? If "No," describe below each loc</li> </ol>	cation and measures taken to stabilize the area(s)	[Z] Yes	□No
Have pollution prevention measures been installed, imple pollutants from equipment and vehicle washing, wheel we "No," describe below the measures to be implemented to	ash water, and other wash waters per section 4.1.5? If	☑ Yes	□No
<ol> <li>If a concrete washout facility is located on site, is it clearly if "No," describe below the measures to be implemented.</li> </ol>		☐Yes	□No
9. Have all previous deficiencies been addressed? If "No," of the Check if deficiencies/corrective measures have been received.		☑ Yes	□No
Rainfall Amounts ON SITE / OFF SITE			
Control of Charles of			200
Certification and Signature (must be signed by the certified in I certify under penalty of law that this document and all attached			
submitted information is to the best of my knowledge and belipenalties for submitting false information, including the pos Annotated Section 39-16-702(a)(4), this declaration is made un	ef, true, accurate, and complete. I am aware that their sibility of fine and imprisonment. As specified in To	e are sig	nificant
Inspector Name Wade Pearson and Title	Signature: Wade Pearson Date:	/19/2	0
Primary Permittee Name and Titte:	Signature: Date:		



Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

### General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Primary Permittee Name: David Sanford  Current approximate 2.33 Acres	Site or Project Name: Greenbrier	Auto, US Hwy 41, Greenbrier, TN	NPOES Tracking Mus	nhar TND 1217	
Current approximate 2.33 Acres disturbed acreage 1.45 No Name of Inspector. Wade Pearson disturbed acreage 1.45 No Name of Inspector. Wade Pearson 1.45 Name of Inspector. Name of Inspector		وموسود وموسود والمستول والمراجع والمراجع والمستوان والمس			
Inspector's Training   Certification Number   143348	Current approximate 2 22 Acres		m#m.rd	-	
Please check the box if the following items are on-site:   Notice of Coverage (NOC)   Stormwater Pollution Prevention Plan (SWPPP)   Twice-weekly inspection documentation   Rain Gage   Off-site Reference Rain Gage Location: KTNGREEN61	disturbed acreage:		Name or inspector: V	vade <del>P</del> earson	***************************************
Notice of Coverage (NOC)	Current weather conditions:			143348	
Best Management Practices (BMPs):  Are the Erosion Prevention and Sediment Controls (EPSCs) functioning correctly: If 'No,' describe below in Comment Section  1. Are all applicable EPSCs installed and maintained per the SWPPP?  2. Are EPSCs functioning correctly at all disturbed areas/material storage areas per section 4.1.5?  3. Are EPSCs functioning correctly at all disturbed areas/material storage areas per section 4.1.5?  4. Are EPSCs functioning correctly at outfall/discharge points such that there is no objectionable color contrast in the receiving stream, and no other water quality impacts per section 5.3.2?  4. Are EPSCs functioning correctly at ingress/egress points such that there is no evidence of track out?  5. If applicable, have discharges from dewatering activities been managed by appropriate controls per section 4.1.47 if 'No,' describe below where measures to be implemented to address deficiencies.  6. If construction activity at any location has temporarily/permanently ceased, was the area stabilized within 14 days per section 3.5.27 if 'No,' describe below each location and measures taken to stabilize the area(s)  4 Have pollution prevention measures been installed, implemented, and maintained to minimize the discharge of pollutants from equipment and vehicle washing, where wash waters, and other wash waters per section 4.1.5? If 'Q'yes \no.' describe below the measures to be implemented to address deficiencies.  6. If a concrete washout facility is located on site, is it clearly identified on the project and maintained? \no.' describe below the measures to be implemented to address deficiencies.  6. If a concrete washout facility is located on site, is it clearly identified on the project and maintained? \no. \no.' describe below the measures to be implemented to address deficiencies.  6. If a control deficiencies been addressed? If 'No,' describe the project and maintained? \no. \no. \no. \no. \no. \no. \no. \no.		ng items are on-site:		**************************************	
Best Management Practices (BMPs):  Are the Erosion Prevention and Sediment Controls (EPSCs) functioning correctly: If 'No,' describe below in Comment Section  1. Are all applicable EPSCs installed and maintained per the SWIPPP?  2. Are EPSCs functioning correctly at all disturbed areas/material storage areas per section 4.1.5?  3. Are EPSCs functioning correctly at outfall/discharge points such that there is no objectionable color contrast in the receiving stream, and no other water quality impacts per section 5.3.2?  4. Are EPSCs functioning correctly at ingress/egress points such that there is no objectionable color contrast in the receiving stream, and no other water quality impacts per section 5.3.2?  4. Are EPSCs functioning correctly at ingress/egress points such that there is no evidence of track out?  5. If applicable, have discharges from dewatering activities been managed by appropriate controls per section 4.1.4.7 if 'No,' describe below the measures to be implemented to address deficiencies.  6. If construction activity at any location has temporarily/permanently ceased, was the area stabilized within 14 days per section 3.5.3.2.7 if 'No,' describe below each location and measures taken to stabilize the area(s).  7. No,' describe below the measures to be implemented and maintained to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters per section 4.1.5? If 'No,' describe below the measures to be implemented to address deficiencies.  8. If a concrete washout facility is located on site, is it clearly identified on the project and maintained?   DN/A   Yes   No   Check if deficiencies below the measures to be implemented to address deficiencies.  9. Have all previous deficiencies been addressed? If 'No,' describe deficiencies.  7. Order the answer is 'No' for any of the above, please describe the problem and corrective actions to be taken.  8. Order the answer is 'No' for any of the above, please describe the problem and corrective actions to	ARMS.		, , , , , , , , , , , , , , , , , , , ,	dy inspection do	cumentation
Are the Erosion Prevention and Sediment Controls (EPSCs) functioning correctly: If "No," describe below in Comment Section 1. Are all applicable EPSCs installed and maintained per the SVMPPP?  2. Are EPSCs functioning correctly at all disturbed areas/material storage areas per section 4.1.5?  3. Are EPSCs functioning correctly at outfall/discharge points such that there is no objectionable color contrast in the receiving stream, and no other water quality impacts per section 5.3.2?  4. Are EPSCs functioning correctly at ingress/egress points such that there is no evidence of track out?  5. If applicable, have discharges from dewatering activities been managed by appropriate controls per section 4.1.4.7 if "No," describe below the measures to be implemented to address deficiencies.  6. If construction activity at any location has temporarity/permanently ceased, was the area stabilized within 14 days per section 3.5.3.2.7 if "No," describe below each location and measures taken to stabilize the area(s).  All Post pollution prevention measures been installed, implemented, and maintained to minimize the discharge of pollutants from equipment and verticle washing, whele wash water, and other wash waters per section 4.1.5.7 if "Quescribe below the measures to be implemented to address deficiencies.  8. If a concrete washout facility is located on site, is it clearly identified on the project and maintained? [QNA] [Ves.] No. "No." describe below the measures to be implemented to address deficiencies.  9. Have all previous deficiencies been addressed? If "No." describe remaining deficiencies in Comment section.  10. Check if deficiencies/corrective measures have been reported on a previous form.  11. Control of the answer is "No" for any of the above, please describe the problem and corrective actions to be taken.  12. Check if deficiencies for submitting false information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant in Tennessee Code Annotated Section 3	Site contact information	Rain Gage 💟 Off-site Reference	Rain Gage Location: KTNGRE	EN61	
1. Are all applicable EPSCs installed and maintained per the SWPPP? 2. Are EPSCs functioning correctly at all disturbed areas/material storage areas per section 4.1.5? 3. Are EPSCs functioning correctly at outfall/discharge points such that there is no objectionable color contrast in the receiving stream, and no other water quality impacts per section 5.3.2? 4. Are EPSCs functioning correctly at ingress/egress points such that there is no evidence of track out? 5. If applicable have discharges from dewatering activities been managed by appropriate controls per section 4.1.41 f*No.* describe below the measures to be implemented to address deficiencies. 6. If construction activity at any location has temporarily/permanently ceased, was the area stabilized within 14 days per section 3.5.3.27 if No.* describe below each location and measures taken to stabilize the area(s)  Have pollution prevention measures been installed, implemented, and maintained to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters per section 4.1.5? if No.* describe below the measures to be implemented to address deficiencies.  8. If a concrete washout facility is located on site, is it clearly identified on the project and maintained? In No.* describe below the measures to be implemented to address a deficiencies.  9. Area element is not explained to address a deficiencies.  10. Yes No.* No.* describe below the measures to be implemented to address a deficiencies.  11. Area element is not explained to address a deficiencies.  12. Yes No.* No.* Comment Section if the answer is 'No.* or any of the above, please describe the problem and corrective actions to be taken.  12. Otherwise, describe any pertinent observations.  13. Area element is the problem and corrective actions to be taken.  14. Certification and Signature (must be signed by the certified inspector and the permittee per Sections 3.5.8.2 (g) and 7.7.2 of the CGP). Certification and Signature (must be signed by the certif			I. ATTER AT A TOTAL CONTROL OF CO		*****
2 Are EPSCs functioning correctly at all disturbed areas/material storage areas per section 4.1.5?	Are the Erosion Prevention and Se	ediment Controls (EPSCs) function	ing correctly: If "No," describe be	low in Cammen	Section
Are EPSCs functioning correctly at outfall/discharge points such that there is no objectionable color contrast in the receiving stream, and no other water quality impacts per section 5.3.2?  Are EPSCs functioning correctly at ingress/ergerses points such that there is no evidence of track out?  If applicable, have discharges from dewatering activities been managed by appropriate controls per section 4.1.47 if 'No.' describe below the measures to be implemented to address deficiencies.  If construction activity at any location has temporarily/permanently ceased, was the area stabilized within 14 days per section 3.5.3.27 if 'No.' describe below each location and measures taken to stabilize the area(s)  Have pollution prevention measures been installad, implemented, and maintained to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters per section 4.1.57 if 'D'yes 'No.' describe below the measures to be implemented to address deficiencies.  If a concrete washout facility is located on site, is it clearly identified on the project and maintained?  Have all previous deficiencies been addressed? If 'No.' describe temporated to address deficiencies.  Have all previous deficiencies been addressed? If 'No.' describe temporated on a previous form.  Check if deficiencies/corrective measures have been reported on a previous form.  Comment Section if the answer is "No" for any of the above, please describe the problem and corrective actions to be taken.  Chertification and Signature (must be signed by the certified inspector and the permittee per Sections 3.5.8.2 (g) and 7.7.2 of the CGP)  I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting lake information, including the possibility of fine and imprisonment. As specified in Tenn			MARKET AND A STATE OF THE STATE	ZIY	es 🗌 No
contrast in the receiving stream, and no other water quality impacts per section 5.3.2?  4. Are EPSCs functioning correctly at ingress/egress points such that there is no evidence of track out?  5. If applicable, have discharges from dewatering activities been managed by appropriate controls per section 4.1.4.7 If "No." describe below the measures to be implemented to address deficiencies.  6. If construction activity at any location has temporarily/bermanently ceased, was the area stabilized within 14 days per section 3.5.3.2.7 If "No." describe below each location and measures taken to stabilize the area(s)  Have pollution prevention measures been installed, implemented, and maintained to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters per section 4.1.5? If "No." describe below the measures to be implemented to address deficiencies.  6. If a concrete washout facility is located on site, is it clearly identified on the project and maintained?  6. If "No." describe below the measures to be implemented to address deficiencies.  7. If "No." describe below the measures to be implemented to address deficiencies.  8. If a concrete washout facility is located on site, is it clearly identified on the project and maintained?  9. Mave all previous deficiencies been addressed? If "No." describe remaining deficiencies in Comment section.  1. If "No." describe an activity is located on a previous form.  1. Comment Section if the answer is "No" for any of the above, please describe the problem and corrective actions to be taken.  2. Otherwise, describe any pertinent observations.  2. Otherwise, describe any pertinent observations.  3. Rainfall Amounts  3. On SITE / OFF SITE  3. Or of the CGP/  4. Certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant pena	£~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	The state of the s	Annual Control of the	<b>Z</b> ] Y	es 🗌 No
section 4.1.47 if "No," describe below the measures to be implemented to address deficiencies.  6. If construction activity at any location has temporarily/permanently ceased, was the area stabilized within 14 days per section 3.5.3.27 if "No," describe below each location and measures taken to stabilize the area(s)  Have pollution prevention measures been installed, implemented, and maintained to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters per section 4.1.57 if "No," describe below the measures to be implemented to address deficiencies.  8. If a concrete washout facility is located on site, is it clearly identified on the project and maintained?   ZN/A   Yes   No   No," describe below the measures to be implemented to address deficiencies.  9. Have all previous deficiencies been addressed? If "No," describe remaining deficiencies in Comment section.   ZYes   No   Check if deficiencies/corrective measures have been reported on a previous form.  Comment Section if the answer is "No" for any of the above, please describe the problem and corrective actions to be taken.  Otherwise, describe any pertinent observations:  Rainfall Amounts  ON SITE / OFF SITE    Certification and Signature (must be signed by the certified inspector and the permittee per Sections 3.5.8.2 (g) and 7.7.2 of the CGP)  I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.  Primery Permittee    Primery Permittee   Signature   Date:	<ol> <li>Are EPSCs functioning correctles contrast in the receiving stream</li> </ol>	y at outfall/discharge points such that and no other water quality impacts in	there is no objectionable color per section 5.3.27	ZY	es 🔲 No
section 4.1.47 ff 'No.' describe below the measures to be implemented to address deficiencies.  If construction activity at any location has temporarily/permanently ceased, was the area stabilized within 14 days per section 3.5.3.27 ff 'No.' describe below each location and measures taken to stabilize the area(s)  Have pollution prevention measures been installed, implemented, and maintained to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters per section 4.1.5? If 'No.' describe below the measures to be implemented to address deficiencies.  If a concrete washout facility is located on site, is it clearly identified on the project and maintained?    \( \text{VN} \)   \( \text{Ves} \)   \( \text{NN} \)   \( \text{Ves} \)   \( \text{NN} \)   \( \text{Ves} \)   \( \text{NN} \)   \( \text{Ves} \)   \( \text{Ves} \)   \( \text{NN} \)   \( \text{Ves} \)				ΖÝ	es 🗌 No
Have pollution prevention measures been installed, implemented, and maintained to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters per section 4.1.5? If	section 4.1.47 If "No," describe	below the measures to be implemen	ted to address deficiencies.		es 🔲 No
/ pollutants from equipment and vehicle washing, wheel wash water, and other wash waters per section 4.1.5? If	<ol> <li>If construction activity at any lo- days per section 3.5.3.27 If "No</li> </ol>	cation has temporarily/permanently c p. describe below each location and r	eased, was the area stabilized wit neasures taken to stabilize the are	hin 14 ZiY ea(s)	es 🗌 No
8. If a concrete washout facility is located on site, is it clearly identified on the project and maintained? N/A Yes No If "No," describe below the measures to be implemented to address deficiencies.  9. Have all previous deficiencies been addressed? If "No," describe remaining deficiencies in Comment section.  10. Check if deficiencies/corrective measures have been reported on a previous form.  11. Comment Section. If the answer is "No" for any of the above, please describe the problem and corrective actions to be taken.  12. Otherwise, describe any pertinent observations:  13. Certification and Signature (must be signed by the certified inspector and the permittee per Sections 3.5.8.2 (g) and 7.7.2 of the CGP.  14. Certification and Signature (must be signed by the certified inspector and the permittee per Sections 3.5.8.2 (g) and 7.7.2 of the CGP.  15. Certification and signature (must be signed by the certified inspector and the permittee per Sections 3.5.8.2 (g) and 7.7.2 of the CGP.  16. Certification and Signature (must be signed by the certified inspector and the permittee per Sections 3.5.8.2 (g) and 7.7.2 of the CGP.  17. Certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.  11. Primary Permittee  11. Primary Permittee  11. Primary Permittee  12. No. The provided information and penalty of perjury.  13. Signature: Date:	/- pollutants from equipment and	vehicle washing, wheel wash water, it	and other wash waters per section	tharge of 4.1.5? If <b>Z</b> Y	es 🗌 No
Comment Section. If the answer is "No" for any of the above, please describe the problem and corrective actions to be taken.  Otherwise, describe any pertinent observations:  Rainfall Amounts ON SITE / OFF SITE   Certification and Signature (must be signed by the certified inspector and the permittee per Sections 3.5.8.2 (g) and 7.7.2 of the CGP) I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting talse information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of penjury.  Inspector Name Wade Pearson  Signature: Wade Pearson  Date:  Date:	a If a concrete washout facility is	located on site, is it clearly identified	on the project and maintained?	ØN⁄A □Y	es 🗆 No
Comment Section. If the answer is "No" for any of the above, please describe the problem and corrective actions to be taken. Otherwise, describe any pertinent observations:  Reinfall Amounts ON SITE / OFF SITE  Certification and Signature (must be signed by the certified inspector and the permittee per Sections 3.5.8.2 (g) and 7.7.2 of the CGP) I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.  Inspector Name Wade Pearson  Primary Permittee  Signature:  Date:  Date:  Date:	<ul> <li>Have all previous deficiencies to</li></ul>	peen addressed? If "No." describe rer live measures have been reported on	naining deficiencies in Comment : a prévious form.	section. 27 Y	es 🗆 No
I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.  Inspector Name Wade Pearson  and Title:  Wade Pearson  Date:  11/23/20  Primary Permittee  Signature:  Date:	Otherwise, describe any pertinent ob  Rainfall Amounts	io" for any of the above, please descr servations:	ibe the problem and corrective act	ions to be taken	•
I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.  Inspector Name Wade Pearson  and Title:  Wade Pearson  Date:  11/23/20  Primary Permittee  Signature:  Date:	<u>\$"''</u>				And an analysis of the second
I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.  Inspector Name Wade Pearson  and Title:  Wade Pearson  Date:  11/23/20  Primary Permittee  Signature:  Date:	Certification and Signature (must be	e signed by the certified inspector an	I the permittee per Sections 3.5.8.	2 (g) and 7.7.2	of the CGP)
Primary Permittee Signature: Date:	I certify under penalty of law that this submitted information is to the best of penalties for submitting false inform	document and all attachments were of my knowledge and belief, true, ac nation, including the possibility of f	prepared by me, or under my dir curate, and complete. I am awar ine and imprisonment. As spe	ection or superve that there are	ision. The
Primary Permittee Signature: Date:	Inspector Name Wade Pearson and Title:	Signati	ire: Wade Pearson	Date: ///23	/20
		Signati	ле:		



Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

#### General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Site or Project Name: Greenbrier	Auto, US Hwy 41, Greenb	rier, TN	NPDES Tracking Nun	nber: TNR 24375	5
Primary Permittee Name: David Sar			Date of Inspection:	11/20 (20)	**************************************
Current approximate 2.33 Acres disturbed acreage:	Has rainfall been checked daily? Yes N		*	Vade Pearson	
Current weather conditions:			Inspector's Training Certification Number:	143348	in the second se
Please check the box if the following	ng items are on-site:	· · · · · · · · · · · · · · · · · · ·		**************************************	
☑ Notice of Coverage (NOC) ☑	] Stormwater Pollution Prev	ention Plan (SWPF	PP) 🛛 Twice-week	ly inspection docu	mentation
Site contact information	] Rain Gage 💟 Off-site Ri	eference Rain Gag	e Location: KTNGRE	EN61	
Best Management Practices (BMP)	s):		MENT MENTAL TOUR AND A SEA AS		and the second second second second second
Are the Erosion Prevention and Se	diment Controls (EPSCs)	functioning correc	tly: If "Na," describe be	low in Comment S	ection
Are all applicable EPSCs instal	led and maintained per the \$	SWPPP?		<b>☑</b> Yes	
2. Are EPSCs functioning correct	y at all disturbed areas/mate	rial storage areas p	per section 4.1.5?	☑ Yes	. □No
<ol> <li>Are EPSCs functioning correctl contrast in the receiving stream</li> </ol>	y at outfall/discharge points:	such that there is n	o objectionable color	[7] Yes	. □No
Are EPSCs functioning correcti	y at ingress/egress points su	ich that there is no	evidence of track out?	☑ Yes	****************
5. If applicable, have discharges f section 4.1.4? If "No," describe	rom dewatering activities be-	en managed by ap	propriate controls per	Z Yes	
6. If construction activity at any loc days per section 3.5.3.2? If *No	cation has temporarily/perma	anentiv ceased, wa	s the area stabilized wit	hin 14 Z Yes	□No
Have pollution prevention meas 7 pollutants from equipment and "No," describe below the measi	sures been installed, implem vehicle washing, wheel wast ures to be implemented to a	ented, and maintain h water, and other values deficiencies	ned to minimize the disc wash waters per section	harne of	□No
<ol> <li>If a concrete washout facility is if "No," describe below the mea</li> </ol>	located on site, is it clearly id sures to be implemented to	fentified on the pro address deficiencie	ect and maintained?	☑N/A ☐ Yes	□No
Have all previous deficiencies b     Check if deficiencies/correct	een addressed? If "No," des ive measures have been rep	scribe remaining de orted on a previous	ficiencies in Comment s s form.	ection. Z Yes	□No
Comment Section. If the answer is "N Otherwise, describe any pertinent ob:	o" for any of the above, piea servations:	se describe the pro	blem and corrective acti	ons to be taken.	
Rainfall Amounts ON SITE / OFF SITE					
Trace, Trace					
Certification and Signature (must be	signed by the certified insp	ector and the perm	ittee per Sections 3.5.8.	2 (g) and 7.7.2 of	the CGP)
I certify under penalty of law that this submitted information is to the best of penalties for submitting false inform Annotated Section 39-16-702(a)(4), the	of my knowledge and belief, pation, including the possib	true, accurate, and in	d complete. I am awar norisonment. As spec	e that there are s	ionificant
Inspector Name Wade Pearson and Title:			ade Pearson	Date: 11/20/2	0
Primary Permittee	and the second s	Signature:	Ментен в Р. В. в Вистен в В. Мостен по постоя общения в придости постоящей странции придости подавания в придос	Date:	



Division of Water Resources

William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243 1-888-891-8332 (TDEC)

General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Site or Project Name: Greenbrier A	uto, US Hwy 41, Greenbri	er, TN	NPDES Tracking Num	ber: TNR 243755	
Primary Permittee Name: David San	ford		Date of Inspection:	11/30/20	
Current approximate disturbed acreage: 2.33 Acres	Has rainfall been checked/d daily? Yes No	ocum <b>e</b> nted	Name of Inspector: W	/ade Pearson	
Current weather conditions:			Inspector's Training Certification Number:	143348	
Please check the box if the following	ig items are on-site:	The second secon	n (in the the text of the text	rk bl. i m. 1 art. 1 art. 1 art. 1 art. 1 art. 1 bl. 1 bl. 1 als connecessivitis et announcement	
☑ Notice of Coverage (NOC) ☑	Stormwater Pollution Preve	ntion Plan (SWPF	PP)	ly inspection docum	entation
Site contact information	Rain Gage 💟 Off-site Re	ference Rain Gag	e Location: KTNGRE	EN61	
Best Management Practices (BMPs	a):		And the second desired of the second desired desired of the second desired desir	***************************************	
Are the Erosion Prevention and Se		inctioning corre	ctly: If "No," describe bel	ow in Comment Se	ction
<ol> <li>Are all applicable EPSCs instal</li> </ol>	ed and maintained per the S	MPPP?	•	☑ Yes	□No
2. Are EPSCs functioning correctly	at all disturbed areas/mater	al storage areas	per section 4.1,5?	☑ Yes	□No
3. Are EPSCs functioning correctly contrast in the receiving stream				☑ Yes	□No
4. Are EPSCs functioning correctly	y at ingress/egress points suc	h that there is no	evidence of track out?	☑ Yes	□No
5. If applicable, have discharges for section 4.1.4? If "No," describe	below the measures to be im	plemented to add	lress deficiencies.	☑ Yes	□ No
<ol> <li>If construction activity at any loc days per section 3.5.3.27 If "No</li> </ol>					□No
Have pollution prevention meas 7. pollutants from equipment and "No," describe below the measu	vehicle washing, wheel wash	water, and other	wash waters per section		□No
8. If a concrete washout facility is If "No," describe below the mea				☑N/A ☐Yes	□ No
9. Have all previous deficiencies b		•		ection.	□No
Rainfall Amounts ON SITE / OFF SITE					
Certification and Signature (must b	a signed by the certified incre	octor and the nem	nittee per Sections 3 5 8	2 (a) and 7 7 2 of ti	e CGP)
I certify under penalty of law that this submitted information is to the best openalties for submitting false information 39-16-702(a)(4), the submitted section 39-16-702(a)(4), the submitted section 39-16-702(a)(4), the submitted section 39-16-702(a)(b) the submitted section s	document and all attachment of my knowledge and belief, nation, including the possible	nts were prepared true, accurate, a lity of fine and	by me, or under my dir nd complete. I am awar imprisonment. As spec	ection or supervision e that there are sign	n. The Inificant
Inspector Name Wade Pearson and Title:		gadi di percentantagang apidang in mpinapada atau in 1800 2017. A	Jade Pearson	Date: ///30/2	0
Primary Permittee Name and Title:		Signature:	A TO THE PERSON NAMED IN COLUMN TO A TOTAL OF THE PERSON NAMED IN COLUMN TO THE PERSON NAMED IN	Date:	



Division of Water Resources

William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243 1-888-891-TDEC (8332)

#### Notice of Termination (NOT) for General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

This form is required to be submitted when requesting termination of coverage from the CGP. The purpose of this form is to notify the TDEC that either all stormwater discharges associated with construction activity from the portion of the identified facility where you, as an operator, have ceased or have been eliminated; or you are no longer an operator at the construction site. Submission of this form shall in no way relieve the permittee of permit obligations required prior to submission of this form. Please submit this form to the local DWR Environmental Field Office (EFO) address (see table below). For more information, contact your local EFO at the tott-free number 1-888-891-8332 (TDEC).

		Type or print of	dearly, using ink.			
Site or Project	Name: Greehbrier Auto (2.33	acres)		Ne Nu	DES Tracking 243	<b>755</b>
Street Address	or Location: US Hwy 41,		County(ies): Robertson			on
Name of Perm	ittee Requesting Termination of Cover	<sup>age:</sup> Inspec	tor, Wade P	earson Co	ert # 143348	
Permittee Conta	David Sanford		Title or Position:	Owner		
Mailing Addres	<sup>s:</sup> 2552 Highway 41 Sou	th	City: Greet	nbrier	State: TN	Zip: 37073
Phone: 615-0	643-4444		E-mail: sales	@greenb	rierautos.cor	
Check the res	ison(s) for termination of permit c	overage:				t Mit Mittel to buy
Stornwate vegetative	er discharge associated with construction cover OR has equivalent measures such	activity is no lo as rip rap or ge	onger occurring and otextiles, in areas no	the permitted a	rea has a uniform 70% impervious surfaces.	permanent
You are no	o longer the operator at the construction	site (i.e., termin	ation of site-wide, p	rimary or seco	idary permittee covera	ge).
Certification	and Signature: (must be signed by p	resident vice	rresident or equi	valent ranking	elected official)	
by submitting it general permit, under the Clear termination does For the purpose discharges assor from the portion construction site	was an operator have ceased or have be- his notice of termination, I am no long and that discharging pollutants in storr a Water Act where the discharge is not s not release an operator from liability fo- es of this certification, elimination of se- ciated with construction activities from an of the construction site where the oper- es where the operator had control have be-	ter authorized to mwater associate authorized by it any violations stormwater disc the identified si trator had controcen finally state	o discharge stormwed with construction a NPDES permit. It of this permit or the harges associated water that are authorized. Specifically, this officed, the temporar	vater associated in activity to will also understate a Clean Water a with construction by a NPDE is means that a reversion and	I with construction ac aters of the United St and that the submittal Act.  On activity means that S general permit have Il disturbed soils at the sediment control means	tivity under this ates is unlawful of this notice of tall stormwater been eliminated e portion of the sures have been
removed, and/or I certify under p information is to false information	subsequent operators have obtained per enalty of law that this document and all othe best of my knowledge and belief, tr n, including the possibility of fine and it ade under penalty of perjury.	mit coverage for attachments we ue, accurate, an	r the site or portions are prepared by me, d complete. I am a	of the site who or under my di	ere the operator had co rection or supervision are significant penaltic	ntrol.  The submitted as for submitting
Pennittee name i David Sanford	(print or type); I (Wade Pearson, Insp.# 143348)		Signature: Wade	Pearso.	n Date:	1/20
EFO:	Street Address	Zip Code	EFO	Street Addre		Zip Code
Memphis	8383 Wolf Lake Drive, Bartlett, TN	38133	Cookeville	1221 South V	***************************************	38506
Jackson	1625 Hollywood Drive	38305	Chattanoogu	1301 Riverfro	ont Parkway, Ste. 206	37402
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlet	rook Pike	37921
Columbia	1421 Hampshire Pike	38401	Johnson City	2305 Silverda	le Road	37601

CN-3375 (Rev. 12-14)

RDA 2366

3



### • APPENDIX G: <u>EMPLOYEE TRAINING</u>

June 16th (1hr. Training SU Public Works)

Name alex west Sonny Hill (arlalanghy Austin Wallace Robinson Justin Hardway Joey Rhoten Jared Hayse Trey Burnette Jason Harrington hory () Shorne -t Pertel

Department

Planning & Codes

Water Pept.

Codes

Parks

Parks

Muhhhh ?

Water dept.

Vater

Parks

Parks

Wanter



## • APPENDIX H: <u>FALL 2020 CLEANUP DAY</u> <u>NUMBERS</u>

# GREENBRIER FALL CLEAN-UP DAY





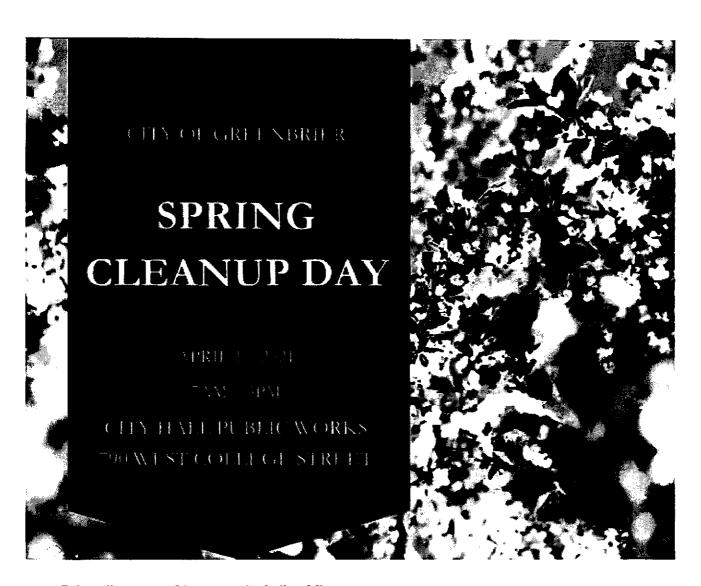
### Cleanup Day October 3, 2020

### **Numbers for Cleanup Day**

- 1. 46.69 Tons of Trash
- 2. 16.55 Tons of Metal
- 3. 604 Tires & 105 Tires with Rims = Grand Total of 709
- 4. (4) Drum of Aerosol Paint Cans, Pesticide, and Hot Products.
- 5. (1) 55 Gallon Drum of Hazardous Chemicals
- 6. (4) 55 Gallon Drums of Oil
- 7. (11) Boxes of Paint at 27 Sqft. A Piece



## APPENDIX I: <u>SPRING 2021 CLEANUP DAY</u> NUMBERS AND VOLUNTEER LIST/WAIVER



Bring all unwanted items to city hall public works and City, Hudgins Disposal, Clean Harbors, and Hulls Environmental Services employees will be glad to help you unload.

THE CITY OF GREENBRIER WOULD LIKE TO SAY THANK YOU TO THIS YEAR'S SPONSORS:

HUDGINS DISPOSAL, ČLEAN HARBORS, SHRUMS AUTO SALVAGE, AND HULLS ENVIRONMENTAL SERVICES.

FOR RESIDENTS OF THE CITY OF GREENBRIER ONLY.
PROOF OF RESIDENCY WILL BE NEEDED TO ENTER.

#### THINGS TO KNOW

PLEASE SEPARATE ITEMS TO BE THROWN AWAY, SUCH AS TIRES, WOOD, METAL, PAINT, ANTIFREEZE, AND OIL FROM GENERAL DEBRIS.

NO SHINGLES, PROPANE TANKS, ASBESTOS, DIRT, ROCKS, OR ASHES WILL BE ACCEPTED. NO SCAVENGING OF SCRAP METALS WILL BE ALLOWED.

ELDERLY OR DISABLED RESIDENTS CAN MAKE ARRANGEMENTS FOR PICK-UP WITH CITY HALL STAFF AT (615) 643-4531.

### Cleanup Day April 17, 2021

### **Numbers for Cleanup Day**

- 1. 42.21 Tons of Trash
- 2. 9.83 Tons of Metal
- 3. 5.83 Tons of Tires
- 4. (1) Drum of Aerosol Paint Cans
- 5. (1) 55 Gallon Drum of Hazardous Chemicals + 10 gallons
- 6. 330 Gallons of Oil
- 7. (16) Boxes of Paint at 27 Sqft. A Piece
- 8. (2.5) 55 Gallon Drum of Non-Flammable Liquids
- 9. (1.5) Containers of Pesticides
- 10. (4) 55 Gallon Drums of Bleach
- 11. (2) 55 Gallon Drums of Miscellaneous Chemicals
- 12. 17 Batteries
- 13. 55 Bags of Trash was picked up by volunteers along Old Greenbrier Pike.

11,660 lbs tires

19,660 lbs metal

### City of Greenbrier

#### Waiver & Release from Liability

Project Location: LMUSL MWHM Park
Date: 4-17-20-4 Time: 7:30 am

I understand that I am volunteering for activities through the City of Greenbrier ("Greenbrier"), I understand that as a volunteer. I may be involved in physical activities that have a potential risk of injury. I assume this risk, I agree that I will perform activities that I am comfortable doing and follow all instructions.

I hereby release and discharge the City of Greenbrier, and all of their alfiliates, officers, directors, employees, agents and volunteers from any claim, demand or cause of action that may be asserted by or on behalf of me as a result of my volunteering for activities through the City of Greenbrier. I agree to be responsible for my behavior and to indemnify the City of Greenbrier, and all of their affiliates, officers, directors, employees, agents and volunteers from any damages or liabilities arising out of my activities as a volunteer through the City of Greenbrier.

Volunteers shall at all times indemnify and save harmless the City of Greenbrier, and their agents and officers, from responsibilities, damage, or liability arising from the exercise of the privileges granted under designated programs.

By signing this form, I confirm that no compensation was received for the performance of activities under this proposal. I grant the City of Greenbrier and their partners the irrevocable right to use photographs and video or audio recordings of me made while volunteering, in any medium, without pay.

	Print First and Last Name (Please Print)	Signature (Participant or Parent/Guardian if under 18)	Request for Certificate?
1	HYCLIPANIOH XSIF		
2	Holley Stewart Brown	14	W/
3	Kendoll Slavcu		1/
4	RENOTE DOLLAS		
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### City of Greenbrier

#### Waiver & Release from Liability

Project Location:	
Date:	Time:

I understand that I am volunteering for activities through the City of Greenbrier ("Greenbrier"), I understand that as a volunteer, I may be involved in physical activities that have a potential risk of injury. I assume this risk, I agree that I will perform activities that I am comfortable doing and follow all instructions.

I hereby release and discharge the City of Greenbrier and all of their affitiates, officers, directors, employees, agents and volunteers from any claim, demand or cause of action that may be asserted by or on behalf of me as a result of my volunteering for activities through the City of Greenbrier; agree to be responsible for my behavior and to indemnify the City of Greenbrier, and all of their affiliates, officers, directors, employees, agents and volunteers from any damages or liabilities arising out of my activities as a volunteer through the City of Greenbrier.

Volunteers shall at all times indemnify and save harmless the City of Greenbrier and their agents and officers, from responsibilities, damage, or liability arising from the exercise of the privileges granted under designated programs.

By signing this form, I confirm that no compensation was received for the performance of activities under this proposal, I grant the City of Greenbrier and their partners the irrevocable right to use photographs and video or audio recordings of me made while votunteering, in any medium, without pay.

Print First and Last Name (Please Print)	Signature (Participant or Parent/Guardian if under 18)	Request for Certificate ?
	12 3 Ch	No
1 Karin Jones 2 Nilkvi Little	THE WAY TO HAVE	NO
	11 Handy one 7	No
3 Heather Henderson	Michili West	NID
4 muchille flustin	- Dinbridge	100
5 BOTH BAIDER	James Walso	100
	James 11820	10
7 paige Kerr 8 hunde Revolución	17 May 7/1/1/1/11	20
9 Con Civor	Coon Walk arri	10
10 King Windows		レン し
11 Kate Burd	1 / Qu	70
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14	A 1 to 2 to 1 to 1 to 1 to 1 to 1 to 1 to	
15	1	
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### City of Greenbrier

#### Waiver & Release from Liability

Project Location	n: Old Ence	contrier Hwy	_by	religiop Hus	•
Date: 417	21	Time: Bam - 12	PIN	•	

i understand that I am volunteering for activities through the City of Greenbrier ("Greenbrier"). I understand that as a volunteer, I may be involved in physical activities that have a potential risk of injury. I assume this risk. I agree that I will perform activities that I am comfortable doing and follow all instructions.

I hereby release and discharge the City of Greenbrier and all of their affiliates, officers, directors, employees, agents and volunteers from any claim, demand or cause of action that may be asserted by or on behalf of me as a result of my volunteering for activities through the City of Greenbrier. I agree to be responsible for my behavior and to indemnify the City of Greenbrier, and all of their affiliates, officers, directors, employees, agents and volunteers from any damages or liabilities arising out of my activities as a volunteer through the City of Greenbrier.

Volunteers shall at all times indemnify and save harmless the City of Greenbrier and their agents and officers, from responsibilities, damage, or flability arising from the exercise of the privileges granted under designated programs.

By signing this form, I confirm that no compensation was received for the performance of activities under this proposal. I grant the City of Greenbrier and their pertners the irrevocable right to use photographs and video or audio recordings of me made while volunteering, in any medium, without pay.

	Print First and Last Name (Please Print)	Signature (Participant or Parent/Guardian if under 18)	Request for Certificate?
1	Jurah Chastopher	Law Cutt	
2	Jacob Christopher  Jacob Christopher	Joseph Cture	
3	Andrew Christopher	Sarah Chis	
4	Walter Johnson	Weatter Johnson	
5	Julian Farmer	Jacob Christophia	
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### • APPENDIX J: 1st ANNUAL TREE GIVEAWAY DAY



### CITY OF GREENBRIER

### 1<sup>st</sup> Annual Tree Giveaway Day

The City will be giving away 100 trees to citizens on a first come first serve basis. The trees will be located under the pavilion located on the side of City Hall from 10:00 am - 3:00 pm or until all have been picked up.

Where: 790 West College Street

When: March 19, 2021

Time: 10am - 3pm







# • APPENDIX K: <u>BACTERIOLOGICAL STUDY OF</u> <u>STREAMS WITHIN THE CITY OF GREENBRIER,</u> <u>TN MS4</u>

		•	

### Bacteriological Study of Streams within the City of Greenbrier, TN MS4

Report for Compliance with

2016 NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems

July 15, 2021



Photo of Carr Creek at Dorris Road (photo by R.Taylor)

### This project was completed by

Western Kentucky University, Center for Environmental and Workplace Health, in partnership with the City of Greenbrier Stormwater Management

### Authors:

Dr. Ritchie D. Taylor, PhD, MS Jacqueline R. Basham, MPH, ASP



Western Kentucky University
College of Health and Human Services
Center for Environmental and Workplace Health

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#### **EXECUTIVE SUMMARY**

In summary, E. coli levels within the City of Greenbrier's MS4 jurisdiction were found to be above acceptable levels for E. coli in Carr Creek and Pole Bridge Branch as compared to the Tennessee Water Quality Criteria for recreation use. The Unnamed Tributary had a geometric mean E. coli level well below the criteria. Geometric mean E. coli concentrations for Carr Creek ranged from 264 MPN per 100 ml to 720 MPN per 100 ml at Carrs Creek Blvd. These results suggest that the source of E. coli contamination in Carr Creek originates within the City of Greenbrier's MS4. In addition, the elevated E. coli levels detected in Pole Bridge Branch are indicated to originate from the Ridgetop, TN jurisdiction.

This study indicates that further research is needed within the watersheds of the City of Greenbrier's MS4 jurisdiction to further appraise the relationship between *E. coli*, water quality, stream flow, and precipitation. Research may be used to further document the site-specific nature of this relationship and delineate the extent of *E. coli* contamination under either dry-weather or wet-weather conditions. It is clear from this study that there are illicit discharges entering Carr Creek. One source could be sanitary sewer overflows or illicit discharge of untreated wastewater.

#### INTRODUCTION

As part of the mission of academic excellence through community engaged research and innovation, Western Kentucky University (WKU) Center for Environmental and Workplace Health (CEWH) assisted the City of Greenbrier, Tennessee in a project to conduct a bacteriological study on streams within its Small Municipal Separate Storm Sewer Systems (MS4s) jurisdiction. Specifically, the bacteriological study focused on those stream segments listed for "Escherichia coli" (TDEC, 2016). This project was conducted in compliance with standards for analytical monitoring set forth by of the Tennessee Department of Environment and Conservation (TDEC) for Small MS4s (TDEC, 2016).

The purpose of the study was to assess the Escherichia coli (E. coli) concentrations in 303(d) listed streams within the City of Greenbrier's MS4, in particular Carr Creek and an Unnamed Tributary at the Wastewater Treatment Plant (WWTP). In addition, Pole Branch was sampled during this study due to its location within the City of Greenbrier and close proximity to a subdivision. Another stream, Wartrace Creek, was to be sampled. However, this stream was dry throughout the study period within the jurisdiction of Greenbrier, TN and could not be sample. Carr Creek and the Unnamed Tributary at the WWTP were included in this study as each are listed in the 2020 303(d) List for "E. coli" impairment with "Sanitary Sewer Overflows" indicated as the source of impairment (TDEC, 2020).

This bacteriological study had the objectives that met the requirements of the City's general Municipal Separate Storm Sewer System (MS4) permit (TDEC, 2016). Objectives of the study included the following:

- Completion of bacteriological monitoring at stream sites within the Greenbrier's MS4.
- Conduct bacteriological sampling at five stream sites within the City of Greenbrier's MS4 (TDEC, 2011).
- Collect In situ water quality monitoring at all bacteriological sampling sites during the sampling period.
- Document site observations for each monitoring site for the study period (TDEC, 2011).
- Collaboration with a laboratory that follows 40 CFR 136 for E. coli analysis of surface water samples. In this study, WKU's HydroAnalytical conducted all E. coli sample analysis.
   HydroAnalytical is certified in the State of Kentucky for E. coli analysis in drinking water and wastewater.
- Assessment of results to evaluate concentrations of E. coli for streams within the City of Greenbrier's MS4 jurisdiction as compared to the Tennessee water quality criteria.
- Preparation of a report of the information collected and results.

#### **METHODS**

Methods of the bacteriological study and associated measurements were conducted in agreement with TDEC methods (TDEC, DWPC, 2018). Bacteriological monitoring included the collection of water samples for the analysis of *E. coli*, water quality measurements during the study period, USGS gage height and precipitation observations in a nearby watershed, and observations of stream conditions. Samples were collected by a WKU graduate and undergraduate student with oversight by the principal and co-principal investigator. Analysis of water samples for *E. coli* was performed at the WKU's HydroAnalytical certified laboratory. This laboratory followed all required procedures for surface water samples collected for *E. coli* analysis and is a drinking water certified laboratory by the State of Kentucky.

# Bacteriological Monitoring and Analysis

Specified requirements for the collection of water samples for the determination of E. coli concentrations was performed in stream segments where E. coli had been identified as the cause of impairment and other segments within the City of Greenbrier's stormwater MS4. These stream segments were documented as impaired due to discharges from an MS4 area (TDEC, 2020). In these stream segments, as specified in the general NPDES permit, bacteriological sampling is required during each five year permit cycle (TDEC, 2016). Specifically, water samples were collected and analyzed by a certified laboratory for E. coli according to TDEC procedures (TDEC, DWPC, 2018). The streams sampled, as shown in Figure 1, included three sites on Carr Creek, one location on Pole Bridge Branch, and one location on the Unnamed Tributary just upstream from the WWTP. Wartrace Creek was not included in the study as it was dry during the study period.

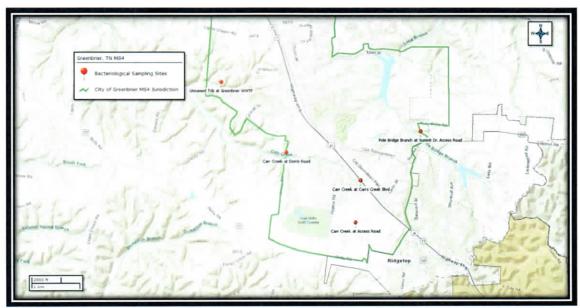


Figure 1. Location of bacteriological sampling sites in the City of Greenbrier MS4 jurisdiction

Water samples for *E. coli* analysis were collected between May 17 and June 10, 2021 for all streams and locations. A series five water samples were collected at each sampling location over the sampling period for each site (Figure 1). Collection of five water samples for *E. coli* analysis was performed at each site in accordance TDEC procedures (TDEC, DWPC, 2018). This methodology allows for the determination of the geometric mean of *E. coli* concentrations, based on at least five samples in a 30-day period, at each monitoring site.

Samples were water column samples collected at the center of channel within each stream segment monitored. Included in each sampling run was the collection of a duplicate, trip blank, and field blank. Bottles used for collection were sterilized and sealed. A chain of custody was completed for each sampling date. All samples were preserved on ice immediately upon collection and transported to the laboratory, meeting all holding times. Chain of custody forms were used to document the sample collection, transport, and analysis process (Appendix 1)

Sample analysis was performed by WKU's HydroAnalytical Laboratory located in Bowling Green, KY at the WKU Center for Research and Development. This laboratory is a certified laboratory for *E. coli* analysis in drinking water and wastewater by the State of Kentucky. Also, methods used meet all requirements for surface water *E. coli* sample analysis per the EPA requirements specified in 40 CFR 136. Results of *E. coli* analysis were recorded and the sample handling documented on the Chain of Custody forms by laboratory personnel. All samples were analyzed with the IDEXX 51-Well Quanti Tray system, using the Colilert reagent, and according to standard procedures to determine the Most Probable Number of *E. coli* colonies per 100 ml (TDEC, DWPC, 2018).

# Water Quality

Water quality measurements were collected at each sample site during the sampling period. These measurements included dissolved oxygen (mg/L), pH (s.u.), specific conductance (µs/cm), temperature (°C), and turbidity (NTU), as per standard TDEC protocols (2011). A YSI multi-probe water quality probe and interface was used to measure water quality. Additional observations included general stream conditions.

The water quality meter was calibrated at the beginning of the sampling day. All calibrations were recorded in a bound field book. It should be noted that water quality was collected during each *E. coli* sampling run. Water quality was collected throughout the sampling period to produce representative samples to characterize stream conditions.

# USGS Gage Height, Stream Flow and Precipitation

To ensure that all samples were collected during a dry-weather event, no samples were collected within 48 hours of a significant storm event, greater than 0.1 inches of rain, as recorded at the Greenbrier

WWTP. Storm events were also evaluated as producing changes in stream flow as indicated by increased gage height (feet) measured for the United States Geological Survey (USGS) station on Mansker Creek (USGS 03426387 Mansker Creek at Hwy 41 near Millersville, TN) (United States Geological Survey, 2016). In this manner, local storm events were monitored according to rainfall gauge data at the Greenbrier WWTP and regional streamflow assessed based on the Mansker Creek USGS gaging station.

Data for the USGS gaging station can be found at the web site for Mansker Creek (United States Geological Survey, 2016). Additionally, a rain gauge operated by the USGS at the site measured precipitation, as well. No samples for *E. coli* analysis were collected within 48 hours of a significant measured precipitation event (>0.1 inches of rainfall), as well.

#### RESULTS

Results of the study are presented in this section report. Analysis of E. coli samples resulted in the determination of geometric mean concentrations for sampling sites, based on at least five samples per site. These values were compared against the Tennessee water quality criteria for E. coli the streams sampled in the MS4 jurisdiction.

## E. coli Concentrations

Results of laboratory analysis of E. coli for the sampling sites in this study can be found in Table 1. A geometric mean was calculated for the E. coli concentrations for each sampling site, consisting of five measurements per site. Geometric mean values for five sample series at the stream sites ranged from a low of 22 MPN/100 ml to a high of 720 MPN/100 ml. A couple of the individual samples collected from Carr Creek were greater than 941 MPN/100 ml.

Table 1, E, coli concentrations and water quality for stream sampling sites within the City of Greenbrier MS4 jurisdiction, including geometric mean E. coli values (MPN/100 ml)

Sampling Location Description	Longitude	Luttitude	Date	Time	E. Coli Sample ID	E. Coli Result (MPN/100 mL)	pH	Conductivity (us/cm)	Temperature [Celcius]	DO (mg/L)	DO [N]	Turbidity (stu)	TDS (mg/L)
Carr Creek at Subdivision Access Road	-86.79092	36.40277	5/17/21				7.29	360	16.87	7.63	79.6	7.55	233
			5/25/21	12:23	WKUCC001	86	7.35	223	20.18	5.57	61.6	3.87	145
			5/27/21	10:47	WKUCC001	1203	7.05	239	19.41	5.54	60.2	3.5	155
			6/1/21	10:35	WKUCC001	345	7.52	222	16.39	7.29	74.3	3.19	144
			6/8/21	10:41	WKUCC001	165	7.56	205	21.02	6.74	75.8	6.94	133
			6/10/21	10:34	WKUCCD01	517	7.14	200	20.71	6.85	75.5	7.72	130
E. coli Geometric Meun (MPN/100ml)						368							
Carr Creek at Carrs Creek Blvd	-86.789722	36.410556	5/25/21	12:46	WKUCC003	1986	8.24	373	22.14	9.92	113.9	1.9	243
			5/27/21	11:02	WKUCC002	727	7.89	412	20.43	9.45	105	2.92	268
			6/1/21	10:45	WKUCC002	276	7.96	376	17.28	10.33	107.6	2.13	244
			6/8/21	10:55	WKUCC003	727	7.82	333	20.23	9.18	101.2	3.27	216
			6/10/21	10:46	WKUCC003, WKUCC004	670	7.59	322	19.43	8.7	94.7	4.45	209
E. coli Geometric Mean (MPN/100ml)						720							
Carr Creek at Dorris Road	-86.30716	36.41574	5/17/21				7.77	484	17.32	8.82	92.2	5.74	315
			5/25/21	13:01	WKUCC004, WKUCC005	303	7.94	304	20.74	7.95	8.88	4.88	198
			5/27/21	11:20	WKUCCD04	197	7.79	321	19.45	8.52	92.1	4.91	209
			6/1/21	10:59	WKUCC003	291	7.86	297	16.69	9.41	96.7	2.48	193
			6/8/21	11:21	WKUCC004	411	7.99	277	20.96	8.34	93.5	4.84	180
			6/10/21	11:00	WKUCC005	179	7.82	273	20.63	7.91	88.2	3.61	178
E. coil Geometric Mean (MPN/100ml)			110000			264						-	
Pole Bridge Branch at Summit Drive Acce	-85.7758	36.41972	5/18/21				7.97	459	18.11	7.17	75.9	1.88	298
			5/25/21	10:51	WKUPB001	133	7.53	269	20.05	8.15	89.9	2.01	175
			5/27/21	10:03	WKUP8001	119	7.26	288	19.55	8.62	93.9	6.06	187
			6/1/21	09:50	WKUPBOO1, WKUPBOO2	125	7.42	274	17.3	8.76	91.3	1.38	178
			6/8/21	09:52	WKUPB001	157	7.73	262	20.78	8.53	95.2	2.32	170
			6/10/21	09:56	WKUP8001	145	7.39	246	21.1	6.42	72.3	2.31	160
E. coli Geometric Mean (MPN/100mi)			100			135							
Unnamed Tributary at Greenbrier WWTP	-86.82216	36.4289	5/18/21				7.35	721	15.48	6.98	70.1	0.94	468
			5/25/21	11:53	WKUUT001	7	7,42	412	17.82	5.67	59.8	2.06	268
			5/27/21	10:28	WKUUT001, WKUUT002	26	7.16	436	17.59	4.77	49.9	1.42	283
			6/1/21	10:18	WKUUT001	19	7.34	418	15.76	6.42	64.6	0.87	272
			6/8/21	10:18	WKUUT001	38	7.48	414	18.35	6.27	66.8	1.2	269
			6/10/21	10:18	WKUUT001	40	7.25	388	18.48	5.76	61.5	2	252
E. coli Geometric Mean (MPN/100ml)						22							

5/25/2021 "WKUCC002 Field Blank 5/27/2021 "WKUCC003 Field Blank "WKUTB001 Trip Blank 6/12/2021 "WKUCC004 Field Blank 6/12/2021 "WKUCT002 Field Blank "WKUTB001 Trip Blank 6/10/2021 "WKUCC002 Field Blank "WKUTB001 Trip Blank

# Water Quality

Water quality data were recorded in the field. Data for water quality are summarized in Table 1. Parameters for water quality included temperature (°C), dissolved oxygen (mg/L), pH (s.u.), specific conductance ( $\mu$ s/cm), and turbidity (NTU). Measurements were conducted each sampling date.

# USGS Gage Height and Precipitation

Data for the USGS gaging station can be found at the web site for Mansker Creek (United States Geological Survey, 2016). Additionally, a rain gauge operated by the City of Greenbrier at the WWTP site measured precipitation. Rainfall information was utilized to determine sampling dates.

Determination of precipitation and stream flow increases was critical to this study. Mansker Creek gage height and precipitation was used as the indicator of wet-weather conditions that would preclude sampling, as was rain events over 0.1 inches at the WWTP. A gage height of less than 1.80 feet was typically found to indicate that the regional streams were not under the influence of storm events. However, precipitation data at the Greenbrier WWTP was evaluated to insure a correct determination.

#### DISCUSSION

The main points of discussion are the results of the E. coli analysis and water quality monitoring. *E. coli* concentrations were found to exceed the primary recreation use geometric mean standard of 126 colony forming units (cfu) per 100 ml for all sampling locations on Carr Creek and the one sampling location on Pole Bridge Branch. One sample from Carr Creek at the Subdivision Access (-86.79092, 36.40277) and one sample from Carr Creek at Carrs Creek Blvd was observed to exceed the secondary contact recreation criterion for *E. coli* of 941 cfu per 100 ml.

# E. coli Analysis

According to the 2020 303d list, Carr Creek and the Unnamed Trib near the WWTP, within the City of Greenbrier's MS4 jurisdiction, are listed as impaired due to *E. coli*. The source of impairment is cited as "Sanitary Sewer Overflows". Sampling was used to assess the current concentrations of E. coli in jurisdictional streams during dry-weather periods and within the summer months of May and June. Accordingly, impairment due to elevated *E. coli* concentrations was detected at all Carr Creek sampling locations (geometric means of 368, 720, and 264 MPN per 100 ml) and in Pole Bridge Branch (135 MPN per 100ml) as compared to the primary contact recreation E. coli criterion of 126 cfu per 100 ml.

These results for *E. coli* concentrations confirm previous impairments found for Carr Creek, as evidenced by the listing on the 2020 303d list. Contamination was found to begin at the upstream jurisdictional boundary of Carr Creek in the City of Greenbrier and to the most downstream extent within the MS4 for Carr Creek at Dorris Road. Thus, the pollution of Carr Creek was confirmed within the City of Greenbrier's MS4.

·		

The probable cause, as indicated in the 2020 303d list, is sanitary sewer overflows or other illicit discharges. A priority of the visual assessment will be to assess potential sources of contamination. However, the elevated *E. coli* concentrations found in Pole Bridge Branch near the Summit Drive access road may be originating from the City of Ridgetop, TN. The Pole Bridge Branch sampling location was near Greenbrier's MS4 jurisdictional boundary, where Pole Bridge Branch first flows from Ridgetop, TN into the City of Greenbrier boundaries.

The intent of this study was to collect and assess dry-weather stream samples for elevated *E. coli*. A further component was to evaluate the potential for illicit discharges within City of Greenbrier MS4 jurisdiction, as indicated by an elevated *E. coli* geometric mean at a sampling location greater than the Tennessee *E. coli* water quality criteria for primary and secondary contact. The results, with observed elevated concentrations of *E. coli*, can be used to direct future sampling to determine sources of *E. coli* contamination during dry weather.

It was found that *E. coli* levels of the Unnamed Tributary at the Greenbrier WWTP streams was well within acceptable limits for *E. coli*, with a geometric mean of 22 MPN per 100 ml. An important note is that this sampling site was just upstream from the Greenbrier WWTP. As such, this sample site was to assess watershed-based sources of contamination in the Unnamed Tributary. Results indicated that there was not a source of *E. coli* detected upstream from the WWTP. The listing of the Unnamed Tributary in the 2020 303d list was due to sanitary sewer overflows from the Greenbrier WWTP. This source of contamination should continue to be evaluated to eliminate wastewater releases to the Unnamed Tributary.

## Water Quality

Water quality parameters were within acceptable limits based on the Tennessee water quality standards (Table 2). It should be noted that turbidity (NTU) was the greatest and varied the most for the Carr Creek sites, as compared to other sampling locations. This may indicate an increased pollution load due to illicit discharges in the watershed or other activities. Continued observance of turbidity should constitute a further water quality variable to study to better evaluate sources of *E. coli*.

## USGS Gage Height and Precipitation

Time constraints related to sample holding times did not allow for stream flow to be measured at each site during water sampling events. Previous reconnaissance had indicated that all streams sampled do respond to storm events. Therefore, precipitation measured at the Greenbrier WWTP was evaluated preceding each sampling event to ensure no rainfall greater than 0.1 inches in the 48 hours prior to the even. Additionally, data for the USGS gaging station on Mansker Creek near Goodlettsville, TMN was evaluated each day to assess the gage height and precipitation. This analysis produced consistent results for determining dry-weather periods. It was found that Mansker Creek indicated dryweather conditions with a gage height of 1.80 ft or less. Likewise, precipitation (inches) showed a direct impact on gage height and was monitored to insure no sampling was done within 48 hours of a storm event. Future studies should follow this protocol. Also, further study is needed to determine the response of E. coli levels to storm events and identify sources of contamination during wet-weather conditions. A site specific framework may be needed for MS4's to determine when local

streams are under the influence of storm events, and elevated *E. coli* due to wet-weather flows.

#### CONCLUSION

In summary, E. coli levels within the City of Greenbrier's MS4 jurisdiction were found to be above acceptable levels for E. coli in Carr Creek and Pole Bridge Branch as compared to the Tennessee Water Quality Criteria for recreation use. The Unnamed Tributary had a geometric mean E. coli level well below the criteria. Geometric mean E. coli concentrations for Carr Creek ranged from 264 MPN per 100 ml to 720 MPN per 100 ml at Carrs Creek Blvd. These results suggest that the source of E. coli contamination in Carr Creek originates within the City of Greenbrier's MS4. In addition, the elevated E. coli levels detected in Pole Bridge Branch are indicated to originate from the Ridgetop, TN jurisdiction.

This study indicates that further research is needed within the watersheds of the City of Greenbrier's MS4 jurisdiction to further appraise the relationship between *E. coli*, water quality, stream flow, and precipitation. Research may be used to further document the site-specific nature of this relationship and delineate the extent of *E. coli* contamination under either dry-weather or wet-weather conditions. It is clear from this study that there are illicit discharges entering Carr Creek. One source could be sanitary sewer overflows or illicit discharge of untreated wastewater.

A method is needed to be developed that can be used by MS4s to assess the site specific nature of streams and E. coli to elucidate the timing of contamination events, dry-weather or wet-weather conditions.

Additionally, there may be a latent period that a storm event produces water quality changes in a stream, this condition may persist for greater than 48 hours. A Previous study by the PI showed that water quality conditions in stormwater receiving streams may be impacted for up to five or more days. Thus, monitoring only after a 48-hour period since the

last rainfall may preclude that sampling is being conducted when a stream is influenced by stormwater runoff. Research is needed to address the following:

- Evaluate long-term water quality and assess water quality measures as a means to determine when Carr Creek is under the influence of storm events.
- Assess measures such as turbidity as additional tools to determine stormwater compliance within the City of Greenbrier's MS4 jurisdiction.
- Evaluate land use and illicit discharge sources within the Carr
  Creek Watershed to determine the sources of elevated E. coli
  concentrations. A partnership should be initiated with the City
  of Ridgetop, TN to evaluate the source of E. coli. Results
  indicate that there may be an illicit discharge upstream from
  the Greenbrier MS4 on Pole Bridge Branch.

### **REFERENCES**

TDEC. (2010). NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems. Nashville, TN: Tenneessee Department of Environment and Conservation.

TDEC. (2011). Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys. Nashville, TN: TDEC.

TDEC. (2016). Final Version of 2014 303(d) List. Nashville, TN: Tennessee Department of Environment and Conservation.

TDEC, DWPC. (2011). Quality System Standard Operating Procedure for Chemical and Bacteriological Sampling of Surface Water. Nashville, TN: TDEC.

United States Geological Survey. (2016, September 20). USGS 03426387 MANSKER CREEK AT HWY 41 NEAR MILLERSVILLE, TN. Retrieved September 25, 2016, from USGS National Water Information System: http://waterdata.usgs.gov/nwis/uv?site\_no=03426387

# **APPENDICES**

# APPENDIX 1

Bacteriological Samples Chain of Custody and Results

### **Analysis Report**

Project: 0521039

**ATTN: Ritchie Taylor** WKU EOHS

1906 College Bowling Green, Kentucky, 42101

Dear Ritchie Taylor,

The enclosed report includes the analytical results for the samples received by our Laboratory on 05/25/2021.

Hydro Analytical is a state certified commercial stormwater, was tewater and drinking water laboratory (KY Lab #: 00035). All the commercial stormwater is a state certified commercial stormwater and drinking water laboratory (KY Lab #: 00035). All the commercial stormwater is a state certified commercial stormwater and drinking water laboratory (KY Lab #: 00035). All the commercial stormwater is a state certified commercial stormwater and drinking water laboratory (KY Lab #: 00035). All the commercial stormwater is a state certified commercial stormwater and drinking water laboratory (KY Lab #: 00035). All the commercial stormwater is a state certified commercial stormwater and drinking water laboratory (KY Lab #: 00035). All the commercial stormwater is a state certified commercial stormwater and drinking water laboratory (KY Lab #: 00035). All the commercial stormwater is a state certified commercial stormwater and drinking water laboratory (KY Lab #: 00035). All the commercial stormwater is a state certified commercial stormwater and drinking water laboratory (KY Lab #: 00035). All the commercial stormwater is a state certified commercial stormwater and drinking water laboratory (KY Lab #: 00035). All the commercial stormwater is a state certified commercial stormwater and drinking water laboratory (KY Lab #: 00035). All the commercial stormwater is a state certified commercial stormwater and drinking water laboratory (KY Lab #: 00035). All the commercial stormwater and drinking water laboratory (KY Lab #: 00035). All the commercial stormwater and drinking water laboratory (KY Lab #: 00035). All the commercial stormwater and drinking water laboratory (KY Lab #: 00035). All the commercial stormwater water laboratory (KY Lab #: 00035). All the commercial stormwater water laboratory (KY Lab #: 00035). All the commercial stormwater water laboratory (KY Lab #: 00035). All the commercial stormwater water laboratory (KY Lab #: 00035). All the commercial stormwater water laboratory (KY Lab #: 00035). All the commeKPDES compliance sample analyses are performed in accordance with the methodology provisions of 40 CFR 136 and the Kentucky Division of Water, Energy and Environment Cabinet (unless otherwise stated).

To view our scope of work, research capabilities and past projects, education and outreach, sampling instructions, and additional forms and documents, please visit our website at www. Hydro Analytical.com.

If you have any questions regarding the content of this report or would like information on additional services we can provide you, please call us at (270) 745-5287 or email us at HydroAnalytical@wku.edu.

### This report includes:

- I. Definitions
- II. Data Flags
- III. Project Notes
- IV. Analytical Results
- V. Laboratory Field Services and Analytical Methods
- VI. Chain of Custody

Lea Mitchell, Lab Technician

05/27/2021

Date

Ethan Givan, Laboratory

Manager

05/27/2021

Date

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Laboratory **Quality Control** Standard Unit Laboratory Millions of Gallons Too Numerous to Count Method Milligrams per Liter Instrument Performance Check Minimum Most Probable Less than Not Applicable Micrograms per Greater than /A g/L Liter II. Data See Data Notes Reported result is Reported result was obtained from the analysis of a sample The target analyte exceeded the calibration curve of the The analysis was conducted The reported result is an estimated value. The target analyte was detected in the sample above the current method detection limit (MDL), however the result is below the established minimum reportable level (MRL). The target analyte was not detected in the sample at or above the Lab's current method detection limit (MDL). One or more quality control criteria were not met during the analysis of the sample. See the Data Notes section for details. Recollection of the sample may be necessary per the client's discretion or the laboratory's request. III. Project: 0521039 Data Notes No notes for this project. **DMR Entry** If the customer has requested the results of this report be entered into NetDMR, the results were entered under the

Permit #:

Date of data entry: \_\_\_\_

	Trip		Ma		Time		05/25/2	Time Received	l:	05/25/2
ite ID: Blank			trix: qu	eous	Collected:	021 0919			21 1440	
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coli	E.		N/100r	иP mL	/A			18®	Colilert-	05/25/202	1 5252186	0 G

WKU		Ma trix: q	ueous	Time Collected: 02	05/25/2	Time Received	d: 21 1440	05/25/20
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E.		MP			Colilert-	05/25/202	1	0
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ite ID: CC002	WKU		Ma trix: que	eous	Tin Collected:	021 12	05/25/2	Time Receive	ed: 21 1440	05/25/20
sis	Analy	esult	nit R	L DL	g F	la d	Metho	Time Analyzed	ab ID	nalysi
coli	E.	1	MP N/100mL	/A		18®	Colilert-	05/25/20	21 5252188	0 G

ite ID: CC003	WKU		Ma trix:	queous	Time Collected:	021 1245	05/25/2	Time Received	21 1440	05/25/20
sis	Analy	esult	nit	RL DL	Flo g	d	Metho	Time Analyzed	ab ID	nalyst
coli	E.	986	MP N/100mL	/A		18®	Colilert-	05/25/2021	5252189	0 G

	WKU		Ма				ime	05/25/2	Time Received		05/25/20
ite ID: CC004			trix:	queous		Collected:	021 130	02		21 1440	
	Analy						Fla	Metho	Time		
sis		esult	nit	RL	DL	g	d		Analyzed	ab ID	nalyst
	E.		MP					Colilert-	05/25/2021		0
coli		61	N/100mL		/A		18®		1526	5252190	G

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sis	Analy	esult	nit	RL DL	Fla	d	Metho	Time Analyzed	ab ID	nalyst
coli	E.	45	MP N/100mL			18®	Colilert-	05/25/202	5252191	0 G

HydroAnalytical Lab aims to provide innovative, high quality water resource and hydrologic analytical services to ensure clean and safe water for public health and support research on water quality and quantity. Our facility offers progressive, customizable services in general chemistry, metals, microbiology through field sampling and laboratory analyses for wastewater, stormwater, groundwater, and industrial testing.

HydroAnalytical also takes pride in offering EPA-certified microbiological testing for drinking water and wastewater. We are proud to serve south-central Kentucky and the surrounding region's water analysis needs. If you have questions or would like a quote for laboratory analyses or field analyses along a mail the lab at HydroAnalytical@uler. add

We are also able to offer additional analytical and field based services beyond those listed below upon request.

Alkalinity (Bicarbonate, Total)  Ammonia - Nitrogen  Atrazine (Non-Certified)  BOD/CBOD (5-Day)  Bromide  Chloride  Chlorine, Free (Non-Certified)  Chlorophyll a (Non-Certified)  COD  Dissolved Oxygen  SM 2320 B-2011  Hach 10205  EPA 4670  SM 5210 B-2011  SM 4110 B-2011  SM 4110 B-2011  SM 4110 B-2011  SM 4500 CI G-2011  EPA 445.0  Hach 8000  SM 4500 O G-2011	
Atrazine (Non-Certified)  BOD/CBOD (5-Day)  Bromide  Chloride  Chlorine, Free (Non-Certified)  Chlorophyll a (Non-Certified)  COD  EPA 4670  SM 5210 B-2011  SM 4110 B-2011  SM 4110 B-2011  SM 4110 B-2011  SM 4500 CI G-2011  SM 4500 CI G-2011  EPA 445.0  Hach 8000	
BOD/CBOD (5-Day)  Bromide  SM 4110 B-2011  Chloride  Chlorine, Free (Non-Certified)  Chlorine, Total Residual  Chlorophyll a (Non-Certified)  COD  SM 5210 B-2011  SM 4110 B-2011  SM 4110 B-2011  SM 4500 CI G-2011  EPA 445.0  Hach 8000	
Bromide SM 4110 B-2011 Chloride SM 4110 B-2011 Chlorine, Free (Non-Certified) SM 4500 Cl G-2011 Chlorine, Total Residual SM 4500 Cl G-2011 Chlorophyll a (Non-Certified) EPA 445.0 COD Hach 8000	
Chloride SM 4110 B-2011 Chlorine, Free (Non-Certified) SM 4500 Cl G-2011 Chlorine, Total Residual SM 4500 Cl G-2011 Chlorophyll a (Non-Certified) EPA 445.0 COD Hach 8000	
Chlorine, Free (Non-Certified)  Chlorine, Total Residual  Chlorophyll a (Non-Certified)  COD  SM 4500 CI G-2011  SM 4500 CI G-2011  EPA 445.0  Hach 8000	
Chlorine, Total Residual SM 4500 Cl G-2011 Chlorophyll a (Non-Certified) EPA 445.0 COD Hach 8000	
Chlorophyll a (Non-Certified) EPA 445.0 COD Hach 8000	
COD Hach 8000	
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Dissolved Oxygen SM 4500 O G-2011	
Fluoride SM 4110 B-2011	
Hardness, Total SM 2340 C-2011	
Hardness, Total (Calculated, Non-Certified) EPA 200.7 Rev 4.4	
Hexavalent Chromium Hach 8023	
Nitrate / Nitrate (as N) SM 4110 B-2011	
Nitrate + Nitrite (as N) SM 4110 B-2011 or Hach 10206	
Nitrite / Nitrite (as N) SM 4110 B-2011	
Nitrogen, Total Calculation	
Nitrogen, Total Kjeldahl (TKN) Hach 10242	
Oil and Grease, Total EPA 1664 A Stepsaver	
Ortho-Phosphate / Ortho-Phosphate (as P) SM 4110 B-2011	
pH SM 4500 H+B-2011	
Phosphorus, Total Hach 10210	
Settleable Solids SM 2540 F-2011	
Specific Conductance SM 2510 B-2011	
Specific Gravity SM 2710 F-2011	
Sulfate SM 4110 B-2011	
Temperature SM 2550 B-2011	
Total Carbon (Non-Certified) SM 5310 B-2011	
Total Dissolved Solids SM 2540 C-2011	
Total Inorganic Carbon (Non-Certified) SM 5310 B-2011	
Total Organic Carbon SM 5310 B-2011	
Total Solids SM 2540 B-2011	
Total Suspended Solids SM 2540 D-2011	
Turbidity (Non-Certified) SM 2130 B-2011	

Metals by ICP-OES	Certified Method
Aluminum	EPA 200.7 Rev 4.4 1994
Antimony	EPA 200.7 Rev 4.4 1994
Arsenic	EPA 200.7 Rev 4.4 1994
Barium	EPA 200.7 Rev 4.4 1994
Beryllium	EPA 200.7 Rev 4.4 1994
Cadmium	EPA 200.7 Rev 4.4 1994
Calcium	EPA 200.7 Rev 4.4 1994
Chromium	EPA 200.7 Rev 4.4 1994
Cabalt	EPA 200.7 Rev 4.4 1994
Copper	EPA 200.7 Rev 4.4 1994
Iron	EPA 200.7 Rev 4.4 1994
Lead	EPA 200.7 Rev 4.4 1994
Lithium (Non-Certified)	EPA 200.7 Rev 4.4 1994
Magnesium	EPA 200.7 Rev 4.4 1994
Manganese	EPA 200.7 Rev 4.4 1994
Mercury (Non-Certified)	EPA 200.7 Rev 4.4 1994
Molybdenum	EPA 200.7 Rev 4.4 1994
Nickel	EPA 200.7 Rev 4.4 1994
Potassium	EPA 200.7 Rev 4.4 1994
Selenium	EPA 200.7 Rev 4.4 1994
Silver	EPA 200.7 Rev 4.4 1994
Sodium	EPA 200.7 Rev 4.4 1994
Strontium (Non-Certified)	EPA 200.7 Rev 4.4 1994
Sulfur (Non-Certified)	EPA 200.7 Rev 4.4 1994
Thallium	EPA 200.7 Rev 4.4 1994
Tin (Non-Certified)	EPA 200.7 Rev 4.4 1994
Titanium (Non-Certified)	EPA 200.7 Rev 4.4 1994
Vanadium	EPA 200.7 Rev 4.4 1994
Zinc	EPA 200.7 Rev 4.4 1994
 Microbiological	Certified Method
Total Coliform/E. coli @ 35 °C (Presence/Absence)	SM 9223 B (Colilert-18) - 2011
Total Coliform/E. coli @ 35°C (MPN)	SM 9223 B (Colilert-18) - 2011
Fecal Coliform @ 44,5°C (Non-Certified)	SM 9223 B (Colilert-18) - 2011
Heteratrophic Plate Count	SM 9215 B-2011
Field Services	Certified Method
pH	SM 4500 H+B-2011
Temperature	SM 2550 B-2011
Temperature Dissolved Oxygen	SM 2550 B-2011 SM 4500 O G-2011
Temperature	SM 2550 B-2011 SM 4500 O G-2011 SM 2510 B-2011
Temperature Dissolved Oxygen	SM 2550 B-2011 SM 4500 O G-2011
Temperature Dissolved Oxygen Specific Conductance	SM 2550 B-2011 SM 4500 O G-2011 SM 2510 B-2011
Temperature Dissolved Oxygen Specific Conductance Flow (field measurement)	SM 2550 B-2011 SM 4500 O G-2011 SM 2510 B-2011 USGS 3-A8

# HydroAnalytical - Chain of Custody Record

5/25/2 12 V 16.11 11.23 W. 23.10 1,74 14 3 | 13 | 54 | 64 HERT-SELTAGE I GOOD AS VOING BARAND I BERLING BROWNER CLIPE 三三元 ひ <u>で</u> (2) Towns are CST sensor Arrest COMPANY NIKU FORKS SURLEY PERLECTOR C. (m) <u>्</u> २ GI Ç. ٠. **≨**E せんしん みぶ AND LLOCE WKU PBCCI MEN CLOCK LYKY V TOOL True Think Carried Carried A. March 4 - 3ak 5ak 3 AS consequency per Zalen staylidd CJRP Gapt 128 weding motion o NH K 5-25-21 ç citchectes localination Lagend for Bernger Dees Endy -30 \_\_ P ... >-7-White the seconds SA - Citata, Ambar ĭ べ \* 1 (y-ب + 1-4 14 THE WAY <u>\( \) \( \) \( \) \( \)</u> -4  $\Omega$ 4 سر اس R - MACCO Per 42 # 100/2 pt () ē. ACOUNTINE. SCHEWALL IN W. HOLDER CO. 7 Brywm total 5/25/2/ SHH ten. Cocket CC I - Mary Mary 0000 000 CROWN-BICARO HARRISTON PRESENT SANC Bed Warter Acreacy Franklations liker decrya (wer-compliments) (1969 17-44-1946-69) right Years, at Museupi (\*C) Complexes Sample The second second section of the second section of the second Standard (14 ecologyddys) Rum (5.7 eenwy days) est person unit present W 052039 Tage Period **E >** < > **z** > c > C > **\*** \*

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VI. Chain of Custody

# VI. Chain of Custody

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# HydroAnalytical - Chain of Custody Record

### **Analysis Report**

Project: 0521042

ATTN: Ritchie Taylor WKU EOHS 1906 College Bowling Green, Kentucky 42101

Dear Ritchie Taylor,

The enclosed report includes the analytical results for the samples received by our Laboratory on 05/27/2021.

HydroAnalyticalis a state certified commercial stormwater, was tewater and drinking water laboratory (KYLab#:00035). All KPDES compliance sample analyses are performed in accordance with the methodology provisions of 40 CFR 136 and the Kentucky Division of Water, Energy and Environment Cabinet (unless otherwise stated).

To view our scope of work, research capabilities and past projects, education and outreach, sampling instructions, and additional forms and documents, please visit our website at www. Hydro Analytical.com.

If you have any questions regarding the content of this report or would like information on additional services we can provide you, please call us at (270) 745 - 5287 or email us at HydroAnalytical@wku.edu.

### This report includes:

- I. Definitions
- II. Data Flags
- III. Project Notes
- IV. Analytical Results
- V. Laboratory Field Services and Analytical Methods
- VI. Chain of Custody

Report Generated

05/28/2021

Morgan Miller, Laboratory Analyst

Date

Report Approved

06/01/2021

Ethan Givan, Laboratory

Date

Manager

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I. Laboratory Quality Control Standard Unit Laboratory Millions of Gallons Too Numerous to Count Method Instrument Performance Check Milligrams per Liter Minimum Most Probable Less than Not Applicable Micrograms per Greater than /A g/L Liter II. Data See Data Notes Reported result is Reported result was obtained from the analysis of a sample The target analyte exceeded the calibration curve of the The analysis was conducted The reported result is an estimated value. The target analyte was detected in the sample above the current method detection limit (MDL), however the result is below the established minimum reportable level (MRL). The target analyte was not detected in the sample at or above the Lab's current method detection limit (MDL). One or more quality control criteria were not met during the analysis of the sample. See the Data Notes section for details. Recollection of the sample may be necessary per the client's discretion or the laboratory's request. III. Project: 0521042 Data Notes No notes for this project.

### **DMR Entry**

 If the customer has requested the results of this report be	entered into NetDMR, the results were entered under the
Permit #:	Date of data entry:

ite ID: TB001	WKU		Ma trix: q	ueous	Time Collected:	021 0848	05/27/2	Time Received	21 1233	05/27/20
sis	Analy	esult	nit	RL DL	g Flo	d	Metho	Time Analyzed	ab ID	nalyst
	E.		MP				Colilert-	05/27/2021		0
coli		1	N/100mL	/A		18®		1529	5272183	G

ite ID: PB001	WKU		Ma trix: qu	ueous	Tim Collected:	021 100	05/27/2	Time Received	: 21 1233	05/27/20
sis	Analy	esult	nit	RL DL	g F	la d	Metho	Time Analyzed	ab ID	nalyst
coli	E.	19	MP N/100mL	/A		18®	Colilert-	05/27/2021	5272184	0 G

ite ID: UT001	WKU		Ma trix:	queous		Collected:	Time	021 1028	05/27/2	Tim	e Received:	21 1233	05/27/20
sis	Analy	esult	nit	RL	DL	g	Fla	d	Metho	Analyzed	Time	ab ID	nalyst
coli	E.	0	MP N/100mL		/A			18®	Colilert-	1529	5/27/2021	5272185	0 G

ite ID: UT002	WKU		Ma trix:	queous	Time Collected:	021 1029	05/27/2	Time Received	21 1233	05/27/20
sis	Analy	esult	nit	RL DL	Flo g	d	Metho	Time Analyzed	ab ID	nalyst
coli	E.		MP N/100mL			18®	Colilert-	05/27/2021		0

				Collected:	021 1048			21 1233	
Analy	esult	nit	RL DL	Fla g	d	Metho	Time Analyzed	ab ID	nalyst
E.		MP	470			Colilert-			0
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ite ID: CC002	WKU		Ma trix:	queous		Collected:	Time	021 1103	05/27/2	Time Received	d: 21 1233	05/27/20
sis	Analy	esult	nit	RL	DL	g	Fla	d	Metho	Time Analyzed	ab ID	nalyst
coli	E.	27	MP N/100mL		/A			18®	Colilert-	05/27/202	1 5272188	0 G

ite ID: CC003	WKU		Ma trix:	queous		Collected:	fime 02	21 1105	05/27/2	Time Received	l: 21 1233	05/27/20
sis	Analy	esult	nit	RL I	DL	g	Fla	d	Metho	Time Analyzed	ab ID	nalyst
coli	E.	1	MP N/100mL		/A		18	3®	Colilert-	05/27/202	5272189	0 G

ite ID: CC004	WKU		Ma trix:	queou	ıs	Collected:	7ime 021 1	05/27/2	Time Received	: 21 1233	05/27/20
sis	Analy	esult	nit	RL	DL	g	Fla d	Metho	Time Analyzed	ab ID	nalyst
coli	E.	97	MP N/100mL		/A		18®	Colilert-	05/27/2021	5272190	0 G

HydroAnalytical Lab aims to provide innovative, high quality water resource and hydrologic analytical services to ensure clean and safe water for public health and support research on water quality and quantity. Our facility offers progressive, customizable services in general chemistry, metals, microbiology through field sampling and laboratory analyses for wastewater, stormwater, groundwater, and industrial testing.

HydroAnalytical also takes pride in offering EPA-certified microbiological testing for drinking water and wastewater. We are proud to serve south- central Kentucky and the surrounding region's water analysis needs. If you have questions or would like a quote for laboratory analyses or field sources and the lab at HydroAnalytical@yeles.

We are also able to offer additional analytical and field based services beyond those listed below upon request.

General Chemistry	Certified Method
Alkalinity (Bicarbonate, Total)	SM 2320 B-2011
Ammonia - Nitrogen	Hach 10205
Atrazine (Non-Certified)	EPA <b>4</b> 670
BOD/CBOD (5-Day)	SM 5210 B-2011
Bromid <del>e</del>	SM 4110 B-2011
Chloride	SM 4110 B-2011
Chlorine, Free (Non-Certified)	SM 4500 CI G-2011
Chlorine, Total Residual	SM 4500 CI G-2011
Chlorophyll a (Non-Certified)	EPA 445.0
COD	Hach 8000
Dissolved Oxygen	SM 4500 O G-2011
Fluoride	SM 4110 B-2011
Hardness, Total	SM 2340 C-2011
Hardness, Total (Calculated, Non-Certified)	EPA 200.7 Rev 4.4
Hexavalent Chromium	Hach 8023
Nitrate / Nitrate (as N)	SM 4110 B-2011
Nitrate + Nitrite (as N)	SM 4110 B-2011 or Hach 10206
Nitrite / Nitrite (as N)	SM 4110 B-2011
Nitrogen, Total	Calculation
Nitrogen, Total Kjeldahl (TKN)	Hach 102 <b>4</b> 2
Oil and Grease, Total	EPA 1664 A Stepsaver
Ortho-Phosphate / Ortho-Phosphate (as P)	SM 4110 B-2011
рН	SM 4500 H+B-2011
Phosphorus, Total	Hach 10210
Settleable Solids	SM 2540 F-2011
Specific Conductance	SM 2510 B-2011
Specific Gravity	SM 2710 F-2011
Sulfate	SM 4110 B-2011
Temperature	\$M 2550 B-2011
Total Carbon (Non-Certified)	SM 5310 B-2011
Total Dissolved Salids	SM 2540 C-2011
Total Inorganic Carbon (Non-Certified)	SM 5310 B-2011
Total Organic Carbon	SM 5310 B-2011
Total Solids	SM 2540 B-201↑
Total Suspended Solids	SM 2540 D-2011
Turbidity (Non-Certified)	SM 2130 B-2011

Metals by ICP-OES	Certified Method
Aluminum	EPA 200.7 Rev 4.4 1994
Antimony	EPA 200.7 Rev 4.4 1994
Arsenic	EPA 200.7 Rev 4.4 1994
Barium	EPA 200.7 Rev 4.4 1994
Beryllium	EPA 200.7 Rev 4.4 1994
Cadmium	EPA 200,7 Rev 4.4 1994
Calcium	EPA 200.7 Rev 4.4 1994
Chromium	EPA 200.7 Rev 4.4 1994
Cobalt	EPA 200.7 Rev 4.4 1994
Copper	EPA 200.7 Rev 4,4 1994
Iron	EPA 200.7 Rev 4.4 1994
Lead	EPA 200.7 Rev 4.4 1994
Lithium (Non-Certified)	EPA 200.7 Rev 4.4 1994
Magnesium	EPA 200.7 Rev 4.4 1994
Manganese	EPA 200.7 Rev 4.4 1994
Mercury (Non-Certified)	EPA 200.7 Rev 4.4 1994
Molybdenum	EPA 200.7 Rev 4.4 1994
Nickel	EPA 200.7 Rev 4.4 1994
Potassium	EPA 200.7 Rev 4.4 1994
Selenium	EPA 200.7 Rev 4.4 1994
Silver	EPA 200.7 Rev 4.4 1994
Sodium	EPA 200.7 Rev 4.4 1994
Strontium (Non-Certified)	EPA 200.7 Rev 4.4 1994
Sulfur (Non-Certified)	EPA 200.7 Rev 4.4 1994
Thallium	EPA 200.7 Rev 4.4 1994
Tin (Non-Certified)	EPA 200.7 Rev 4.4 1994
Titanium (Non-Certified)	EPA 200.7 Rev 4.4 1994
Vanadium	EPA 200.7 Rev 4.4 1994
Zinc	EPA 200.7 Rev 4.4 1994
Microbiological	Certified Method
Total Coliform/E. coli @ 35 °C (Presence/Absence)	SM 9223 B (Colilert-18) - 2011
Total Coliform/E. coli @ 35°C (MPN)	SM 9223 B (Colilert-18) - 2011
Fecal Coliform @ 44.5°C (Non-Certified)	SM 9223 B (Colilert-18) - 2011
Heterotrophic Plate Count	SM 9215 B-2011
Field Services	Certified Method
рН	SM 4500 H+B-2011
Temperature	\$M 2550 B-2011
Dissolved Oxygen	SM 4500 O G-2011
Specific Conductance	SM 2510 B-2011
Flow (field measurement)	USGS 3-A8
Flow (calculated)	USDA TR-55
Silt Density Index	Meter
Turbidity (Non-Certified)	SM 2130 B-2011

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HydroAnalytical - Chain of Custody Record

	Y Date Bernard to	Proc. Garantin	Representing TA O Tree	14ths and 12th Mar 14ths 1/the 15 1/the 1	N. 30 1212 1213	people to the S-27-21 monared by Com	Print Name of Samples: 1 Jacque We							A P I ST	5/27/411:05 C WKUCCCO3 A P ST E.coli	Time Method '	- E	Af containing par Table 2 of 40 CFF Part 13 unless never untersunt products	C - Componen A - Against C - Casa CA - Gass. Anther N - 1900 pt - 2 (81 - 562500) kg - Codes - 650	B. Sultiud	ethics	Lagend for Sample Data Entry	Special Institutions	POR CRY CTERROLLESS SHAW ZA COMM POR	DKU FOTS Ends VITCHIE TOYLOR DULKER Address	
☐ After-Hours Charge ☐ Rinth Charge	Proceed	Analysis Report Seri	Cleri Coriad Nothalian	DOW STER Mrs Neithburdoon	PWS Notified	DOW-BORO Notification		- steels	+	100mm A	**************************************	- 100m. U	+ 606wei		O 10000 O	K-reported, realizate a reservoir Code Values A / U	Sample Hotes Samples Samples (4) (mermat ii)	Sample Temp, at Recept (*C) (0 rl	Lab Project #: 0521042	Sections Below for Lab the Only		broadquites Moracry (ron-confidence)			□ Rhath (5-7 working days) □ 24 Hours Contex and rise of - Context Let and re sampling	

at www.hydroanalytical.cx



### **Analysis Report**

Project: 0621002

ATTN: Ritchie Taylor WKU EOHS 1906 College Bowling Green, Kentucky 42101

Dear Ritchie Taylor,

The enclosed report includes the analytical results for the samples received by our Laboratory on 06/01/2021.

HydroAnalyticalisastate certified commercial stormwater, was tewater and drinking water laboratory (KYLab#:00035). All KPDES compliance sample analyses are performed in accordance with the methodology provisions of 40 CFR 136 and the Kentucky Division of Water, Energy and Environment Cabinet (unless otherwise stated).

To view our scope of work, research capabilities and past projects, education and outreach, sampling instructions, and additional forms and documents, please visit our website at www. Hydro Analytical.com.

If you have any questions regarding the content of this report or would like information on additional services we can provide you, please call us at (270) 745-5287 or email us at HydroAnalytical@wku.edu.

#### This report includes:

- I. Definitions
- II. Data Flags
- III. Project Notes
- IV. Analytical Results
- V. Laboratory Field Services and Analytical Methods
- VI. Chain of Custody

ort Generated Marier Mariller, Laboratory Analyst 06/09/2021

Date

Ethan Givan, Laboratory

06/10/2021 Date

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ł. Laboratory Quality Control Standard Unit Laboratory Millions of Gallons Too Numerous to Count Method Milligrams per Liter Instrument Performance Check Minimum Most Probable Less than Not Applicable Micrograms per Greater than /A g/L Liter II. Data See Data Notes Reported result is Reported result was obtained from the analysis of a sample The target analyte exceeded the calibration curve of the The analysis was conducted The reported result is an estimated value. The target analyte was detected in the sample above the current method detection limit (MDL), however the result is below the established minimum reportable level (MRL). The target analyte was not detected in the sample at or above the Lab's current method detection limit (MDL). One or more quality control criteria were not met during the analysis of the sample. See the Data Notes section for details. Recollection of the sample may be necessary per the client's discretion or the laboratory's request. III. Project: 0621002 Data Notes No notes for this project. **DMR Entry** If the customer has requested the results of this report be entered into NetDMR, the results were entered under the Permit #: Date of data entry: \_\_\_\_

ite ID: Blank	Trip		Ma trix:	queous	Coll	Time ected:	021 0854	06/01/2	Time Received	d: 21 1209	06/01/20
sis	Analy	esult	nit	RL D	L g	Fla	d	Metho	Time Analyzed	ab ID	nalyst
coli	E.	1	MP N/100mL		Α		18®	Colilert-	06/01/202	1 6012182	0 G

ite ID: PB001	WKU		Ma trix:	queous		Collected:	Time	021 0953	06/01/2	Time Received	d: 21 1209	06/01/20
sis	Analy	esult	nit	RL	DL	g	Fla	d	Metho	Time Analyzed	ab ID	nalyst
coli	E.	42	MP N/100mL		/A			18®	Colilert-	06/01/202	1 6012183	0 G

ite ID: PB002	WKU		Ma trix:	queous		Collected:	ime 02	21 0954	06/01/2	Time Receiv	red: 21 1209	06/01/20
sis	Analy	esult	nit	RL	DL	g	Fla	d	Metho	Time Analyzed	ab ID	nalyst
coli	E.	08	MP N/100mL		/A		202	(B)	Colilert-	06/01/20	6012184	0

ite ID: UT001	WKU		Ma trix:	queous	Collecte	Time d: 021 101	06/01/2	Time Received	21 1209	06/01/20
sis	Analy	esult	nit	RL D	L g	Fla d	Metho	Time Analyzed	ab ID	nalyst
coli	E.	9	MP N/100mL	/	Α	18®	Colilert-	06/01/2021	6012185	0 G

ite ID: CC001	WKU		Ma trix: q	ueous	Time Collected:	021 103	06/01/2 35	Time Received	1: 21 1209	06/01/20
sis	Analy	esult	nit	RL DL	Flo g	d	Metho	Time Analyzed	ab ID	nalyst
	E.		MP				Colilert-	06/01/202	1	0
coli	E.	45	MP N/100mL	/A		18®	Colilert-	06/01/202	6012186	0

				la	Metho	Time		
esult	nit	RL DL	g	d	Mellio	Analyzed	ab ID	nalyst
	MP				Colilert-	06/01/202	21	0
	76							

ite ID: CC003	WKU		Ma trix:	queou	s	Collected:	021 105	06/01/2	Time Receive	d: 21 1209	06/01/20
sis	Analy	esult	nit	RL	DL	g	Fla d	Metho	Time Analyzed	ab ID	nalyst
	E.		MP					Colilert-	06/01/202	21	0
coli		91	N/100mL		/A		18®		1546	6012188	G

ite ID: CC004	WKU		Ma trix:	queous		Collected:	ime	021 1100	06/01/2	Time Receive	d: 21 1209	06/01/20
sis	Analy	esult	nit	RL	DL	g	Fla	d	Metho	Time Analyzed	ab ID	nalyst
	E.		MP						Colilert-	06/01/202	:1	0
coli		1	N/100mL		/A			18®		1546	6012189	G

HydroAnalytical Lab aims to provide innovative, high quality water resource and hydrologic analytical services to ensure clean and safe water for public health and support research on water quality and quantity. Our facility offers progressive, customizable services in general chemistry, metals, microbiology through field sampling and laboratory analyses for wastewater, stormwater, groundwater, and industrial testing.

Hydro Analytical also takes pride in offering EPA-certified microbiological testing for drinking water and wastewater. We are proud to serve south-central Kentucky and the surrounding region's water analysis needs. If you have questions or would like a quote for laboratory analysis and the surrounding region's water analysis needs. If you have questions or would like a quote

We are also able to offer additional analytical and field based services beyond those listed below upon request.

General Chemistry	$\label{eq:continuous_problem} \psi_{ij} = \frac{1}{2} \left( \frac{d^2}{d^2} \psi_{ij} \right)^2 \cdot \psi_{ij}^2 + \frac{1}{2} \left( \frac{d^2}{d^2} \psi_{ij} \right)^2 \cdot $	Certified Method
Alkalinity (Bicarbonate, Total)		SM 2320 B-2011
Ammonia - Nitrogen		Hach 10205
Atrazine (Non-Certified)		EPA <b>4</b> 670
BOD/CBOD (5-Day)		SM 5210 B-2011
Bromide		SM 4110 B-2011
Chloride		SM 4110 B-2011
Chlorine, Free (Non-Certified)		SM 4500 CI G-2011
Chlorine, Total Residual		SM 4500 CFG-2011
Chlorophyll a (Non-Certified)		EPA 445.0
COD		Hach 8000
Dissolved Oxygen		SM 4500 O G-2011
Fluoride		SM 4110 B-2011
Hardness, Total		SM 2340 C-2011
Hardness, Total (Calculated, Non-Certified)		EPA 200.7 Rev 4.4
Hexavalent Chromium		Hach 8023
Nitrate / Nitrate (as N)		SM 4110 B-2011
Nitrate + Nitrite (as N)		SM 4110 B-2011 or Hach 10206
Nitrite / Nitrite (as N)		SM 4110 B-2011
Nitrogen, Total		Calculation
Nitrogen, Total Kjeldahl (TKN)		Hach 10242
Oil and Grease, Total		EPA 1664 A Stepsaver
Ortho-Phosphate / Ortho-Phosphate (as P)		SM 4110 B-2011
рН		SM 4500 H+B-2011
Phosphorus, Total		Hach 10210
Settleable Solids		SM 2540 F-2011
Specific Conductance		SM 2510 B-2011
Specific Gravity		SM 2710 F-2011
Sulfate		SM 4110 B-2011
Temperature		SM 2550 B-2011
Total Carbon (Non-Certified)		SM 5310 B-2011
Total Dissolved Solids		SM 2540 C-2011
Total Inorganic Carbon (Non-Certified)		SM 5310 B-2011
Total Organic Carbon		SM 5310 B-2011
Total Salids		SM 2540 B-2011
Total Suspended Solids		SM 2540 D-2011
Turbidity (Non-Certified)		SM 2130 B-2011

Metals by ICP-OES	Certified Method
Aluminum	EPA 200.7 Rev 4.4 1994
Antimony	EPA 200.7 Rev 4.4 1994
Arsenic	EPA 200.7 Rev 4.4 1994
Barium	EPA 200.7 Rev 4.4 1994
Beryllium	EPA 200.7 Rev 4.4 1994
Cadmium	EPA 200.7 Rev 4.4 1994
Calcium	EPA 200.7 Rev 4.4 1994
Chromium	EPA 200.7 Rev 4.4 1994
Cobalt	EPA 200.7 Rev 4.4 1994
Copper	EPA 200.7 Rev 4.4 1994
Iron	EPA 200.7 Rev 4.4 1994
Lead	EPA 200.7 Rev 4.4 1994
Lithium (Non-Certified)	EPA 200.7 Rev 4.4 1994
Magnesium	EPA 200.7 Rev 4.4 1994
Manganese	EPA 200.7 Rev 4.4 1994
Mercury (Non-Certified)	EPA 200.7 Rev 4.4 1994
Molybdenum	EPA 200.7 Rev 4.4 1994
Nickel	EPA 200.7 Rev 4.4 1994
Potassium	EPA 200.7 Rev 4.4 1994
Selenium	EPA 200.7 Rev 4.4 1994
Silver	EPA 200.7 Rev 4.4 1994
Sodium	EPA 200.7 Rev 4.4 1994
Strontium (Non-Certified)	EPA 200.7 Rev 4.4 1994
Sulfur (Non-Certified)	EPA 200,7 Rev 4.4 1994
Thallium	EPA 200.7 Rev 4.4 1994
Tin (Non-Certified)	EPA 200.7 Rev 4.4 1994
Titanium (Non-Certified)	EPA 200.7 Rev 4.4 1994
Vanadium	EPA 200.7 Rev 4.4 1994
Zinc	EPA 200.7 Rev 4.4 1994
Microbiological	Certified Method
Total Coliform/E. coli @ 35 °C (Presence/Absence)	SM 9223 B (Colilert-18) - 2011
Total Coliform/E. coli @ 35°C (MPN)	SM 9223 B (Colilert-18) - 2011
Fecal Coliform @ 44.5°C (Non-Certified)	SM 9223 B (Colilert-18) - 2011
Heterotrophic Plate Count	SM 9215 B-2011
Field Services	Certified Method
 рН	SM 4500 H+B-2011
Temperature	SM 2550 8-2011
Dissolved Oxygen	SM 4500 O G-2011
Specific Conductance	SM 2510 B-2011
Flow (field measurement)	USGS 3-A8
Flow (calculated)	USDA TR-55
Silt Density Index	Meter
Turbidity (Non-Certified)	SM 2130 B-2011

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Continues   Lapard for flowing first flowing f	Companies   Depart   Companies   Compani	Designation	Time 12.07 Responsesting LAS Date 12.02 Prescribed by LAS Date (2.02)							

HydroAnalytical - Chain of Custody Record

HydroAnalytical - Chain of Custody Record

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Sample Temp, at Macayl (*C) T = Sacter/strogic of Semples		abid off-syrwise	Caph I of 40 CHI Fact 136 (eriess on	All conference per Table 8 of		Sample Collection
Non- Contain CEC 21003	( BT - NaZSIO)	#- 19403 pri -2	GA - Glass, Amber	1	A: Assessa	C - Contente
SH - NacOH (H+ > 9) Sections Below for Lab Use Only	# HODE O	8 - H2504 pH - G	WDM - VOA val with septia	(P. Pleste VO	S - SodiSodi	G. CHID
_	Presurvatives *		· Type <sup>1</sup>	1-1	Market 1	Collection Method 1
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it us at www.hydroanalyticat

### **Analysis Report**

Project: 0621026

ATTN: Ritchie Taylor WKU EOHS

1906 College Bowling Green, Kentucky 42101

Dear Ritchie Taylor,

The enclosed report includes the analytical results for the samples received by our Laboratory on 06/08/2021.

HydroAnalyticalis a state certified commercial stormwater, was tewater and drinking water laboratory (KYLab#:00035). All KPDES compliance sample analyses are performed in accordance with the methodology provisions of 40 CFR 136 and the Kentucky Division of Water, Energy and Environment Cabinet (unless otherwise stated).

To view our scope of work, research capabilities and past projects, education and outreach, sampling instructions, and additional forms and documents, please visit our website at www. Hydro Analytical.com.

If you have any questions regarding the content of this report or would like information on additional services we can pro you, please call us at

1270) 745 - 5287 or email us at HydroAnalytical@wku.edu

This report includes:

- I. Definitions
- II. Data Flags
- III. Project Notes
- IV. Analytical Results
- V. Laboratory Field Services and Analytical Methods
- VI. Chain of Custody

Morgan Miller, Laboratory Analyst

06/15/2021

Date

Report Approved

Ethan Givan, Laboratory

06/16/2021

Date

Manager

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This report may not be reproduced, altered, or modified without the written consent of Hydro Analytical. The report and data contained in the document must include all pages of the permanent record. All results and data contained herein are subject to client interpretation and are in no way representative of the views, interpretations, or otherwise of

١. Laboratory Fortified **Quality Control** Standard Unit Laboratory Millions of Gallons Too Numerous to Count Method Detection Milligrams per Liter Instrument Performance Check Minimum Most Probable Less than Greater than Not Applicable Micrograms per g/L Liter /A II. Data See Data Notes Reported result is Reported result was obtained from the analysis of a sample The target analyte exceeded the calibration curve of the The analysis was conducted in The reported result is an estimated value. The target analyte was detected in the sample above the current method detection limit (MDL), however the result is below the established minimum reportable level (MRL). The target analyte was not detected in the sample at or above the Lab's current method detection limit (MDL). One or more quality control criteria were not met during the analysis of the sample. See the Data Notes section for details. Recollection of the sample may be necessary per the client's discretion or the laboratory's request. III. Project: 0621026 Data Notes No notes for this project. **DMR Entry** If the customer has requested the results of this report be entered into NetDMR, the results were entered under the

Permit #:

Date of data entry:

ite ID: PB001	WKU		Mat rix: c	queous		Collected:	Time	021 0952	06/08/2	Time Receive	d: 21 1300	06/08/20
sis	Analy	esult	nit	RL	DL	g	Fla	d	Metho	Time Analyzed	ab ID	nalyst
coli	E.	57	M PN/100mL		/A			18®	Colilert-	06/08/2021	6082187	0 M

ite ID: UT001	WKU			Mat rix: q	ueous		Collected:	Time	021 1018	06/08/2	Time Received	21 1300	06/08/20
sis	Analy	esult	nit		RL	DL	g	Fla	d	Metho	Time Analyzed	ab ID	nalyst
coli	E.	8	PN/100n	M		/A			18®	Colilert-	06/08/2021	6082188	0 M

ite ID: UT002	WKU		Mat rix: q	ueous	Collected:	Time	021 102	06/08/2	Time Rece	elved: 21 1300	06/08/20
sis	Analy	esult	nit	RL DL	g	Fla	d	Metho	Time Analyzed	ab ID	nalys
coli	E.	1	M PN/100mL	/A			18®	Colilert-	06/08/2	6082189	0 M

ite ID: CC001	WKU		Mat rix: qu	eous	Time Collected:	021 10	06/08/2	Time Received	d: 21 1300	06/08/20
sis	Analy	esult	nit j	RL DL	g Flo	ı d	Metho	Time Analyzed	ab ID	nalys
coli	E.	65	M PN/100mL	/A		18®	Colilert-	06/08/2021	6082190	0 M

ite ID: C002	WKU		Mat rix:	queous		Collected:	Time	021 1043	06/08/2	Time Received	: 21 1300	06/08/20
sis	Analy	esult	nit	RL	DL	g	Fla	d	Metho	Time Analyzed	ab ID	nalyst
coli	E.	65	M PN/100mL		/A			18®	Colilert-	06/08/2021	6082191	0 M

ite ID: CC003	WKU		Mat rix:	queous	Collected:	7ime 021 1	06/08/2	Time Received:	21 1300	06/08/2
sis	Analy	esult	nit	RL DL	g	Fla d	Metho	Time Analyzed	ab ID	nalysi
coli	E.	27	M PN/100mL	/A		18®	Colilert-	06/08/2021	6082192	0

ite ID: TBOO1	WKU		Mat rix:	queous		Collected:	Time O	21 0851	06/08/2	Time Receive	ed: 21 1300	06/08/20
sis	Analy	esult	nit	RL	DL	g	Fla	d	Metho	Time Analyzed	ab ID	nalyst
coli	E.	1	M PN/100mL		/A		18	3®	Colilert-	06/08/202	1 6082193	0 M

ite ID: CC004	WKU		Mat rix: c	queous	Time Collected:	021 112	06/08/2	Time Received	l: 21 1300	06/08/20
sis	Analy	esult	nit	RL DL	g Fid	d d	Metho	Time Analyzed	ab ID	nalysi
coli	E.	11	M PN/100mL	/A		18®	Colilert-	06/08/2021	6082194	0 M

HydroAnalytical Lab aims to provide innovative, high quality water resource and hydrologic analytical services to ensure clean and safe water for public health and support research on water quality and quantity. Our facility offers progressive, customizable services in general chemistry, metals, microbiology through field sampling and laboratory analyses for wastewater, stormwater, groundwater, and industrial testing.

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We are also able to offer additional analytical and field based services beyond those listed below upon request.

1	General Chemistry	. jáir	4-1	- (	Certified Method
	Alkalinity (Bicarbonate, Total)				SM 2320 B-2011
	Ammonia - Nitrogen				Hach 10205
	Atrazine (Non-Certified)				EPA 4670
	BOD/CBOD (5-Day)				SM 5210 B-2011
	Bromide				SM 4110 B-2011
	Chloride				SM 4110 B-2011
	Chlorine, Free (Non-Certified)				SM 4500 CI G-2011
	Chlorine, Total Residual				SM 4500 CI G-2011
	Chlorophyll a (Non-Certified)				EPA 445.0
	COD				Hach 8000
	Dissolved Oxygen				SM 4500 O G-2011
	Fluoride				SM 4110 B-2011
	Hardness, Total				SM 2340 C-2011
	Hardness, Total (Calculated, Non-Certified)				EPA 200.7 Rev 4.4
	Hexavalent Chromium				Hach 8023
	Nitrate / Nitrate (as N)				SM 4110 B-2011
	Nitrate + Nitrite (as N)				SM 4110 B-2011 or Hach 10206
	Nitrite / Nitrite (as N)				SM 4110 B-2011
	Nitrogen, Total				Calculation
	Nitrogen, Total Kjeldahl (TKN)				Hach 10242
	Oil and Grease, Total				EPA 1664 A Stepsaver
	Ortho-Phosphate / Ortho-Phosphate (as P)				SM 4110 B-2011
	рН				SM 4500 H+B-2011
	Phosphorus, Total				Hach 10210
	Settleable Solids				SM 2540 F-2011
	Specific Conductance				SM 2510 B-2011
	Specific Gravity				SM 2710 F-2011
	Sulfate				SM 4110 B-2011
	Temperature				SM 2550 B-2011
	Total Carbon (Non-Certified)				SM 5310 B-2011
	Total Dissolved Solids				SM 2540 C-2011
	Total Inorganic Carbon (Non-Certified)				SM 5310 B-2011
	Total Organic Carbon				SM 5310 B-2011
	Total Solids				SM 2540 B-2011
	Total Suspended Solids				SM 2540 D-2011
	Turbidity (Non-Certified)				SM 2130 B-2011

	Metals by ICP-OES		as of Sharming Co. Calonia.		Certified Method
	Aluminum		1,00		EPA 200.7 Rev 4.4 1994
	Antimony				EPA 200.7 Rev 4.4 1994
	Arsenic				EPA 200.7 Rev 4.4 1994
	Barium				EPA 200.7 Rev 4.4 1994
	Beryllium				EPA 200.7 Rev 4,4 1994
	Cadmium				EPA 200.7 Rev 4.4 1994
	Calcium				EPA 200.7 Rev 4.4 1994
	Chromium				EPA 200.7 Rev 4.4 1994
	Cobalt				EPA 200.7 Rev 4.4 1994
	Copper				EPA 200.7 Rev 4.4 1994
	Iron				EPA 200.7 Rev 4.4 1994
	Lead				EPA 200.7 Rev 4.4 1994
	Lithium (Non-Certifie	ed)			EPA 200.7 Rev 4.4 1994
	Magnesium	•			EPA 200.7 Rev 4.4 1994
	Manganese				EPA 200.7 Rev 4.4 1994
	Mercury (Non-Certif	ied)			EPA 200.7 Rev 4.4 1994
	Molybdenum	,			EPA 200.7 Rev 4.4 1994
	Nickel				EPA 200.7 Rev 4.4 1994
	Potassium				EPA 200.7 Rev 4.4 1994
	Selenium				EPA 200.7 Rev 4.4 1994
	Silver				EPA 200.7 Rev 4.4 1994
	Sodium				EPA 200.7 Rev 4.4 1994
	Strontium (Non-Cert	iified)			EPA 200.7 Rev 4.4 1994
	Sulfur (Non-Certified)				EPA 200.7 Rev 4.4 1994
	Thallium				EPA 200.7 Rev 4.4 1994
	Tin (Non-Certified)				EPA 200.7 Rev 4.4 1994
	Titanium (Non-Certific	ed)			EPA 200.7 Rev 4.4 1994
	Vanadium	•			EPA 200.7 Rev 4.4 1994
	Zinc				EPA 200.7 Rev 4.4 1994
				_	
	Microbiological	William Pages			Certified Method
	Total Coliform/E. coli	@ 35 °C (Presenc	e/Absence)		SM 9223 B (Colilert-18) - 2011
	Total Coliform/E. col				SM 9223 B (Colilert-18) - 2011
	Fecal Coliform @ 44.5		d)		SM 9223 B (Colilert-18) - 2011
	Heterotrophic Plate	Count			SM 9215 B-2011
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	Temperature				SM 4500 H+B-2011
	Dissolved Oxygen				SM 2550 B-2011 SM 4500 O G-2011
	Specific Conductance	ie.			SM 2510 B-2011
	Flow (field measurer				USGS 3-A8
	Flow (calculated)				USDA TR-55
	Silf Density Index				
	Turbidity (Non-Certifi	ied)			Meter
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HydroAnalytical - Chain of Custody Record



# HydroAnalytical - Chain of Custody Record

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Visit us at www.hydroanalytical.com

P

## **Analysis Report**

Project: 0621028

ATTN: Ritchie Taylor WKU EOHS 1906 College Bowling Green, Kentucky 42101

Dear Ritchie Taylor,

The enclosed report includes the analytical results for the samples received by our Laboratory on 06/10/2021.

HydroAnalyticalisastate certified commercial stormwater, was tewater and drinking water laboratory (KYLab#:00035). All KPDES compliance sample analyses are performed in accordance with the methodology provisions of 40 CFR 136 and the Kentucky Division of Water, Energy and Environment Cabinet (unless otherwise stated).

To view our scope of work, research capabilities and past projects, education and outreach, sampling instructions, and additional forms and documents, please visit our website at www. Hydro Analytical.com.

If you have any questions regarding the content of this report or would like information on additional services we can provide you, please call us at (270) 745-5287 or email us at HydroAnalytical@wku.edu.

This report includes:

- I. Definitions
- II. Data Flags
- III. Project Notes
- IV. Analytical Results
- V. Laboratory Field Services and Analytical Methods
- VI. Chain of Custody

Report Generated

Worgan Miller, Laboratory Analyst

06/15/2021

Date

Ethan Givan, Laboratory

06/16/2021

Date

To follow us on social media for lab news and updates, click on the links below!

This report may not be reproduced, altered, or motified without the witten consent of HydroAnalytical. The report and data contained in the document must include all pages or part of the permanent record. All results and data contained herein are subject to client interpretation and are in no way representative of the views, interpretations, or otherwise

Laboratory Quality Control Standard Unit Laboratory Millions of Gallons Too Numerous to Count Method Milligrams per Liter Instrument Performance Check Most Probable Less than Minimum Not Applicable Micrograms per Greater than g/L /A Liter II. Data See Data Notes Reported result is Reported result was obtained from the analysis of a sample The target analyte exceeded the calibration curve of the The analysis was conducted The reported result is an estimated value. The target analyte was detected in the sample above the current method detection limit {MDL}, however the result is below the established minimum reportable level (MRL). The target analyte was not detected in the sample at or above the Lab's current method detection limit (MDL). One or more quality control criteria were not met during the analysis of the sample. See the Data Notes section for details. Recollection of the sample may be necessary per the client's discretion or the laboratory's request. III. Project: 0621028 Data Notes

No notes for this project.

### DMR Entry

If the customer has requested the results of this report be entered into NetDMR, the resu	Its were entered under the
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Permit #:	Date of data entry:

## IV. Analytical Results

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ite ID: CC002	WKU		Ma trix: a	ueous	Time Collected:	021 103	06/10/2	Time Received	<b>1</b> : 21 1200	06/10/2
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## IV. Analytical Results

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	E.		MP				Colilert-	06/10/202	1	0
coli		13	N/100mL	/A		18®		1534	6102187	G

ite ID: CC005	WKU		Ma trix: qued	ous	Collected:	Time 02	06/10/2	Time Received	d: 21 1200	06/10/20
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## V. Laboratory Analytical and Field Services

HydroAnalytical Labaims to provide innovative, high quality water resource and hydrologic analytical services to ensure clean and safe water for public health and support research on water quality and quantity. Our facility offers progressive, customizable services in general chemistry, metals, microbiology through field sampling and laboratory analyses for wastewater, stormwater, groundwater, and industrial testing.

HydroAnalytical also takes pride in offering EPA-certified microbiological testing for drinking water and wastewater. We are proud to serve south- central Kentucky and the surrounding region's water analysis needs. If you have questions or would like a quote for laboratory and type of fall configure and the laboratory and type of fall configure and type of fall confi

We are also able to offer additional analytical and field based services beyond those listed below upon request.

F2 1	General Chemistry	Certified Method
	Alkalinity (Bicarbonate, Total)	SM 2320 B-2011
	Ammonia - Nitrogen	Hach 10205
	Atrazine (Non-Certified)	EPA 4670
	BOD/CBOD (5-Day)	SM 5210 B-2011
	Bromide	SM 4110 B-2011
	Chloride	SM 4110 B-2011
	Chlorine, Free (Non-Certified)	SM 4500 CI G-2011
	Chlorine, Total Residual	SM 4500 CI G-2011
	Chlorophyll a (Non-Certified)	EPA 445.0
	COD	Hach 8000
	Dissolved Oxygen	SM 4500 O G-2011
	Fluoride	SM 4110 B-2011
	Hardness, Total	SM 2340 C-2011
	Hardness, Total (Calculated, Non-Certified)	EPA 200.7 Rev 4.4
	Hexavalent Chromium	Hach 8023
	Nitrate / Nitrate (as N)	SM 4110 B-2011
	Nitrate + Nitrite (as N)	SM 4110 B-2011 or Hach 10206
	Nitrite / Nitrite (as N)	SM 4110 B-2011
	Nitrogen, Total	Calculation
	Nitrogen, Total Kjeldahl (TKN)	Hach 10242
	Oil and Grease, Total	EPA 1664 A Stepsaver
	Ortho-Phosphate / Ortho-Phosphate (as P)	SM 4110 B-2011
	ρΗ	SM 4500 H+B-2011
	Phosphorus, Total	Hach 10210
	Settleable Solids	SM 2540 F-2011
	Specific Conductance	SM 2510 B-2011
	Specific Gravity	SM 2710 F-2011
	Sulfate	SM 4110 B-2011
	Temperature	SM 2550 B-2011
	Total Carbon (Non-Certified)	SM 5310 B-2011
	Total Dissolved Solids	SM 2540 C-2011
	Total Inorganic Carbon (Non-Certified)	SM 5310 B-2011
	Total Organic Carbon	SM 5310 B-2011
	Total Solids	SM 2540 B-2011
	Total Suspended Solids	SM 2540 D-2011
	Turbidity (Non-Certified)	SM 2130 B-2011

## V. Laboratory Analytical and Field Services

Metals by ICP-OES	Certified Method
Aluminum	EPA 200.7 Rev 4.4 1994
Antimony	EPA 200.7 Rev 4.4 1994
Arsenic	EPA 200.7 Rev 4.4 1994
Barium	EPA 200.7 Rev 4.4 1994
Beryllium	EPA 200.7 Rev 4.4 1994
Cadmium	EPA 200.7 Rev 4.4 1994
Calcium	EPA 200.7 Rev 4.4 1994
Chromium	EPA 200.7 Rev 4.4 1994
Cobalt	EPA 200.7 Rev 4.4 1994
Copper	EPA 200.7 Rev 4.4 1994
Iron	EPA 200.7 Rev 4.4 1994
Lead	EPA 200.7 Rev 4.4 1994
Lithium (Non-Certified)	EPA 200.7 Rev 4.4 1994
Magnesium	EPA 200.7 Rev 4.4 1994
Manganese	EPA 200.7 Rev 4.4 1994
Mercury (Non-Certified)	EPA 200.7 Rev 4.4 1994
Molybdenum	EPA 200.7 Rev 4.4 1994
Nickel	EPA 200.7 Rev 4.4 1994
Potassium	EPA 200.7 Rev 4.4 1994
Selenium	EPA 200.7 Rev 4.4 1994
Silver	EPA 200.7 Rev 4.4 1994
Sodium	EPA 200.7 Rev 4.4 1994
Strontium (Non-Certified)	EPA 200.7 Rev 4.4 1994
Sulfur (Non-Certified)	EPA 200.7 Rev 4.4 1994
Thallium	EPA 200.7 Rev 4.4 1994
Tin (Non-Certified)	EPA 200.7 Rev 4.4 1994
Titanium (Non-Certified)	EPA 200.7 Rev 4.4 1994
Vanadium	EPA 200.7 Rev 4.4 1994
Zinc	EPA 200.7 Rev 4.4 1994
Microbiological	Certified Method
Total Coliform/E. coli @ 35 °C (Presence/Absence)	SM 9223 B (Colilert-18) - 2011
Total Coliform/E. coli @ 35°C (MPN)	SM 9223 B (Colilert-18) - 2011
Fecal Coliform @ 44.5°C (Non-Certified)	SM 9223 B (Colilert-18) - 2011
Heterotrophic Plate Count	SM 9215 B-2011
Field Services	Certified Method
рН	SM 4500 H+B-2011
Temperature	SM 2550 B-2011
Dissolved Oxygen	SM 4500 O G-2011
Specific Conductance	SM 2510 B-2011
Flow (field measurement)	USGS 3-A8
Flow (calculated)	USDA TR-55
Silt Density Index	Meter
Turbidity (Non-Certified)	SM 2130 B-2011
Dissolved Oxygen Specific Conductance Flow (field measurement) Flow (calculated) Silt Density Index	SM 4500 O G-2011 SM 2510 B-2011 USGS 3-A8 USDA TR-55 Meter

# VI. Chain of Custody

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HydroAnalytical - Chain of Custody Record

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isit us at www.hydroanalytical.co

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# • APPENDIX L: <u>BIOASSESSMENT OF STREAMS</u> <u>WITHIN THE CITY OF GREENBRIER, TN</u>

## **SUPPORTING MATERIALS**



Prepared by:

Photo of Carr Creek at Dorras Road (photo by R. Taylor)



1202 AT VIUL

Report for Compliance with 2016 NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems

Bioassessment of Streams within the City of Greenbrier, TN

This project was completed by

The Center for Environmental and Workplace Health at

Western Kentucky University in partnership with the

City of Greenbrier, Stormwater Management

Authors

Dr. Ritchie Taylor, PhD, MS

Jacqueline Basham, MPH, ASP



Western Kentucky University

College of Health and Human Services

Center for Environmental and Workplace Health

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## BEEERENCES ......18 ZT .....NOISNT3NOO DISCOSSION Macroinvertebrate Sorting and Taxonomic Identifications...... Vater Quality and Habitat Assessments...... RESULTS...... 01.....vmonoxeT ətsrdətrəvniorəsM Subsampling of Macroinvertebrate Samples...... Water Quality ...... Biological Monitoring and Habitat Assessment......na WELHODS.....8 INTRODUCTION ....... Zist of Figures..... tist of Tables...... Table of Contents Table of Contents

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## INTRODUCTION

As part of the mission of academic excellence through research, innovation, and community engagement, the WKU Center for Environmental and Workplace Health has assisted the City of Greenbrier, Tennessee in a project to conduct bioassessments on streams within its Small Municipal Separate Storm Sewer Systems (MS4s) jurisdiction. Specifically, the bioassessments focused on those stream segments listed for unavailable parameters for "siltation and/or habitat alteration", "habitat alteration", and/or "nutrients" (TDEC, 2016). This project was conducted in compliance with standards for analytical monitoring set forth by of the Tennessee Department of Environment and Conservation (TDEC) for Small MS4s (TDEC, 2016).

The purpose of the study was to assess the health of the watersheds within the City of Greenbrier's MS4, in particular Carr Creek, an Unnamed Tributary to Carr Creek at the Greenbrier WWTP, and Pole Bridge Branch. Specifically, Carr Creek has unavailable parameters for "nutrients", the Unnamed Tributary has unavailable parameters for "nutrients", and Pole Bridge Branch is not listed. Wartrace Creek was not included in the study although it is listed in the 2020 303(d) List for mot included in the study although it is listed in the 2020 303(d) List for "edimentation/altation," "flow regime alteration", "alteration in stream-side or littoral vegetative covers", and "temperature" with "Dam or Impoundment" and "Municipal High Uensity Area" indicated as the source (TDEC, 2020). Throughout the study period Wartrace Creek did not have sufficient flow to collect samples. This bioassessment study had the following objectives that met the requirements of the City's general permit (TDEC, 2016). Objectives of the study included the following:

- Completion of biological monitoring at stream sites within the City of
- Conduct biological monitoring, bioassessments, at stream sites within the City of Greenbrier's MS4 by Semi-Quantitative Single Habitat (SQSH) Method for macroinvertebrates (TDEC, 2017).
- $\circ$   $\,$   $\,$  In situ Water quality monitoring at all biological sampling sites for

Greenbrier's MS4 jurisdiction.

- $\circ~$  Evaluation of habitat at each monitoring sites (TDEC, 2017) as
- Preparation of a report of the information collected and results.

bart of the protocol.

## METHODS

Methods for the bioassessment and associated measurements were conducted in agreement with TDEC methods (TDEC, 2017) (TDEC, 2017). Biological monitoring included macroinvertebrate semi-quantitative sampling, water quality measurements, and habitat assessment. Laboratory analysis of the bioassessment samples was performed by Pennington and Associates, Inc. located in Cookeville, TN.

Biological Monitoring and Habitat Assessment
Specified requirements for biological sampling are to be performed in stream

segments where a loss of biological integrity or unavailable parameters for nutrients was identified and the MS4 has been determined to be the source of siltation and/or habitat alteration and/or nutrients (TDEC, 2020). In these stream segments, as specified in the general NPDES permit, the Semi-Quantitative Single Habitat (SQSH) Method was performed to conduct biological stream sampling (TDEC, 2017). Specifically, Semi-Quantitative Riffle Kick (SQKICK) samples were collected according to Protocol G in Streams listed as having a loss of biological integrity and impaired for siltation and/or habitat alteration in the City of Greenbrier's MS4 (TDEC, 2020). The streams sampled included two sites on Carr Creek, at Access Road and at Dorris Road (the site at Carrs Creek Blvd was not sampled for macroinvertebrates), the Unnamed Tributary to Carrs Creek Blvd was not sampled for macroinvertebrates), the Unnamed Tributary to Carr Creek upstream from the Greenbrier macroinvertebrates), the Unnamed Tributary to Carr Creek upstream from the Greenbrier macroinvertebrates), the Unnamed Tributary to Carr Creek upstream from the Greenbrier macroinvertebrates), the Unnamed Tributary to Carr Creek upstream from the Greenbrier treek was included in the study as did not have sufficient flow to collect a sample even though it is a listed stream (TDEC, 2020).

Bioassessment samples were collected on May 18, 2021. SQKICK samples were collected at the samples were evaluated in Figure 1. Collected samples were evaluated in the field to ensure that the required 160-240 organisms would be achieved after sorting. SQKICK samples were taken in appropriate riffle habitats located in each sampling reach, according to the TDEC methodology (TDEC, 2017). A kick net was used for sample collection. At each location a semi-quantitative sample for macroinvertebrates was collected with the SQKICK method (TDEC, 2017), A visual habitat assessment and field evaluation was done at each location to quantify the physical condition of each stream evaluation was done at each location to quantify the physical condition of each stream evaluation was done at each location to quantify the appropriate forms (TDEC, 2017).

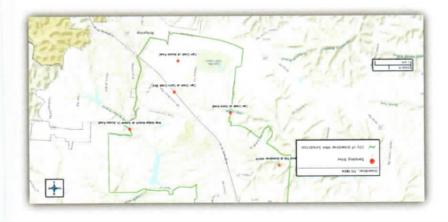


Figure 1. Location of bioassessment monitoring sites in Greenbrier MS4 jurisdiction

#### Water Quality

Water quality measurements were collected at each sample site to include dissolved oxygen (mg/L), pH (s.u.), specific conductance (µs/cm), temperature (°C), and turbidity (NTU), as per standard TDEC protocols (2011). A YSI multi-probe water quality probe and interface was used to measure water quality. Measurements taken were recorded in a bound field notebook. The meter was calibrated at the beginning and end of the sampling day pursuant to standard methods (TDEC, DWPC, 2011).

# Subsampling of Macroinvertebrate Samples All laboratory analysis of the macroinvertebrate samples was conducted by

Pennington and Associates, Inc. or Cookeville, TV. In general, sorting required that samples were cleaned of major debris and macroinvertebrates were removed from the sample. The general procedure was to reduce semi-quantitative samples to 160 – 240 organisms and produce a subsample. To begin, each sample was placed in a 500-micron sieve and rinsed. Once a sample was cleaned, it was moved to a gridded subsampler for collection of the required organisms. Each grid within the subsampler was numbered (TDEC, 2017).

Grids for sampling were determined by selecting four grids randomly. All material and organisms were removed from each randomly selected grid in sequential order until a subsample of 160-240 organisms was achieved. The subsample was then sorted to remove

organisms. If a subsample was determined to have more than the 240 organisms quota, then the sample was again subsampled until the 160-240 organisms quota was achieved.

Material from each subsample was then repeatedly transferred to a petri dish to sort organisms from the subsample. Macroinvertebrates were removed using a dissecting microscope. Organisms sorted from the subsamples were preserved and stored in vials for later taxonomic identifications.

# Macroinvertebrate Taxonomy

Macroinvertebrate identifications followed taxonomic procedures specified in the TDEC (TDEC, 2017) procedure and was completed to the genus level. Organisms were identified following the appropriate keys. Macroinvertebrates were identified to the appropriate taxonomic level and all organisms of a genus (family) were placed in a specific vial. A label indicating the sample ID, date, and organism was placed in each vial. All data for taxonomic identifications were recorded on a bench sheet and stored in a database.

Following taxonomic identifications, macrovertebrate data analysis was completed for each sampling site based on biometrics calculated from the raw benthic data (TDEC, 2017). Metrics followed those specified by TDEC (TDEC, 2017). All data were then reduced to produce a Tennessee Macroinvertebrate Index (TMI) score. In this way, results were used to compare to the standard of 32 for meeting the biocriteria requirement. Also, data reduction allows that the sites can be evaluated.

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### RESULTS

Results of the study are presented in this section and in the appendices to the report. Analysis of taxonomic identifications resulted in determination of TMI scores to compare to biocriteria for Ecoregion 71e (Western Pennyroyal Karat Plain).

#### Water Quality and Habitat Assessments

Habitat Assessment and Field Data Forms are presented in Appendix 1. Scores for habitat assessments were compiled from the visual stream assessment. These data represent information for the entire study reaches. Habitat assessments were conducted within the 100-m study reaches as well as throughout the stream corridor. Compiled data provide a more detailed representation of the habitat throughout the stream segments in the City of Greenbrier's jurisdiction and all assessments followed TDEC (TDEC, 2017).

# Macroinvertebrate Sorting and Taxonomic Identifications

Results of macroinvertebrate analysis to species level, as conducted by Pennington and Associates, Inc., are shown in Table 1 below. Each sample was sorted and identifications conducted according to TDEC procedures (TDEC, 2017).

#### Biometrics and TMI

Biometrics were calculated according to TDEC methods (TDEC, 2017). Results of these calculations are shown in Table 2. Taxa Richness values ranged from 12 to 30 and EPT Richness was 2, 11, 7, and 2, for Carr Creek, at Access Road and at Dorris, the Unnamed Tributary to Carr Creek upstream from the Greenbrier WWKP, and Pole Bridge Branch at Summit Drive Access Road (Figure 1). These values showed variation between sites and were some of the lowest metric scores for the sites. Metric values for % Clinger showed low scores for Taxa Richness and EPT Richness. Variations in metrics calculated showed low scores for Taxa Richness and EPT Richness. Variations in metrics calculated were within an acceptable range, as shown by the TMI ranks of 4 or greater.

Table 1. Species level macroinvertebrate for SQKICK Sites in the City of Greenbrier MS4 Jurisdiction

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Bioassessment of Streams within the City of Greenbrier, TN

Table 2. Genus level identifications, TMI metrics, and TMI calculation

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Scores for biometrics were used to calculate the total TMI score for each site. The target TMI score for each site in Ecoregion 71e is 32. The TMI scores calculated for the sites were 14 for Carr Creek at the Access Road, 34 for Carr Creek at Dorris Road, 20 for the Unnamed Tributary to Carr Creek, and 10 for Pole Bridge Branch. The lower scores reflect the lower ranks for Taxa Richness, EPT Richness, % EPT-CHEUM, % Clingersteflect the lower ranks for Taxa Richness, EPT Richness, % EPT-CHEUM, % Clingersteflect the lower ranks for Taxa Richness, for Carr Creek at the Access Road and Pole Bridge Branch being 0. TMI scores for all sites sampled, except Carr Creek at Dorris Road, were below the Target TMI of 32. This site had a Total TMI of 34.

#### DISCOSSION

Taxa Richness, EPT Richness, % EPT-CHEUM, % Clingers-CHEUM, and % TUUTOL., with some scores for Carr Creek at the Access Road and Pole Bridge Branch being 0. Data for Carr Creek at the Access Road and Pole Bridge Branch being 0. Bridge Branch suggest there is impairment for macroinvertebrate biodiversity. Carr Creek and the Unnamed Tributary to Carr Creek, and Pole Bridge Branch suggest there is impairment for macroinvertebrate biodiversity. Carr Creek and the Unnamed Tributary stream segments have been listed as impaired for macroinvertebrate biodiversity due to siltation and habitat alteration (TDEC, 2020). These results also suggest that Pole Bridge Branch has unavailable parameters.

According to the 2020 303(d) list for Tennessee, a source of impairment is discharges from the City of Greenbrier's MS4 (TDEC, 2020).

Scores for TMI reflect the lower values observed for Taxa Richness, EPT Richness, % EPT-CHEUM, % Clingers-CHEUM, %OC, and % TNUTOL for Carr Creek, and Pole Bridge Branch (Table 2). An influencing factor in these metrics calculated as a percentage or relative value was the fact that a proportion of samples had tolerant species. The lowest TMI score was Pole Bridge Branch followed by Carr Creek at the Access Road. Both of these sites had some metric scores of 0.

Another sensitive metric in the bioassessment evaluation, as shown in Table

2, was % Clingers (Barbour, Gerritsen, Snyder, & Stribling, 1999). Scores for % Clingers ranked lower with exception to Carr Creek at Dorris Road. All sites were compared to the TDEC scores from a reference site for Ecoregion 71e found in the TDEC scores from a reference site for Ecoregion 71e found in the TDEC species from a reference site for Ecoregion 71e found in the TDEC species from a reference site for Ecoregion 71e found in the TDEC species from a reference site for Ecoregion 71e found in the TDEC species from a specifically indicating a presence of species that construct shelters (Barbour, Gerritsen, Snyder, & Stribling, 1999). Decreased values of this habitat metric indicate that a perturbation had impacted stream habitat. It is expected that this metric will be reduced when the habitat may not be adequate to support clinger taxa. Thus, there may be a greater level of sediment and siltation. Habitat scores were not indicative of the results of the bioassessment study. More information should be reviewed to determine sensitive habitat parameters. Future bioassessments should evaluate this relationship more

closely to assess if other habitat metrics are sensitive throughout the watershed in conjunction with bioassessment results.

TMI scores did not meet target scores for Ecoregion 71e, with the exception

of Carr Creek at Dorris Road. The TMI scores calculated for the sites were 14 for Carr Creek at the Access Road, 34 for Carr Creek at Dorris Road, 20 for the Unnamed Tributary to Carr Creek, and 10 for Pole Bridge Branch. The greatest TMI score, 34, was for Carr Creek at Dorris Road. Further research is needed to distinguish the metrics that are sensitive in this watershed and should be used to direct mitigation strategies. These energing results show that seemed and should be used to attend the pitter sense and

sampling results show that research is needed to address if habitat scores and selected macroinvertebrate metrics provide a better indication of habitat perturbations, and the influence of discharges from Small MS4s, in the watersheds within the City's jurisdiction.

#### CONCENSION

In summary, the calculated biometrics that proved to be the most sensitive for indicating habitat perturbations to macroinvertebrates collected in this study via the SQKICK method were Taxa Richness, EPT Richness, % EPT-CHEUM, % Clingers-CHEUM, %OC, and % TNUTOL (TDEC, 2017). As a result of these metrics, TMI scores for sites sampled within the City's MS4 jurisdiction did not meet the biocriteria target score of 32 for Ecoregion 71e, with exception of Carr Creek at Dorris Road. The TMI scores calculated for the sites were 14 for Carr Creek at the Access Road. The TMI scores calculated for the sites were 14 for Carr Creek at the Access and 10 for Pole Bridge Branch. Thus, the influence of the City of Greenbrier's MS4 and 10 for Pole Bridge Branch. Thus, the influence of the City of Greenbrier's MS4 increase perturbations on the system.

This study indicated that research is needed within the watersheds of the City of Greenbrier's MS4 jurisdiction to further appraise habitat and biological diversity. Research will further document impacts to water quality and biological diversity, assess sources of stressors, and evaluate metrics sensitive to determining and tranking steam segments for mitigation. Specifically, research is needed to address the following:

- To evaluate habitat scores and macroinvertebrate metrics that corresponds to these scores to assess the best indication of habitat perturbations, and the influence of discharges from Small MS4s, in the watersheds within the City's jurisdiction.
- To determine the influence of upstream impacts on habitat changes and biological diversity within the City of Greenbrier's MS4 jurisdiction.
   To assess the spatial habitat conditions in stream reaches within the
- MS4 jurisdiction and assess the variability of biological diversity within individual stream reaches.
- To document water quality conditions that may cause temporal and spatial impacts to biological diversity.

# REFERENCES

- Barbour, M. T., Gerritsen, J., Snyder, B. D., & Stribling, J. B. (1999). Rapid Bioassessment
  Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic
  Macroinvertebrates, and Fish (Second ed.). Washington, D.C.: U.S. Envrionmental
  Protection Agency, Office of Wetlands, Oceans, and Watersheds.
- TDEC. (2010). NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems. Nashville, TN: Tenneessee Department of Environment and Conservation.
- TDEC. (2011). Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys. Nashville, TN: TDEC.
- TDEC. (2012), Final Version of 2012 303(d) List. Nashville, TN: Tennessee Department of Environment and Conservation.
- TDEC, DWPC, (2011). Quality System Standard Operating Procedure for Chemical and Bacteriological Sampling of Surface Water. Nashville, TN: TDEC.

# **VPPENDICES**

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