BEFORE THE TENNESSEE REGULATORY AUTHORITY
NASHVILLE, TENNESSEE

JOINT PETITION OF CARTWRIGHT CREEK, LLC AND TRA STAFF (AS A PARTY) TO INCREASE RATES AND CHARGES	))))	**DOCKET NO.16-00127**

DIRECT TESTIMONY
of
BRUCE MEYER

ON BEHALF OF CARTWRIGHT CREEK, LLC

November 10, 2016

BEFORE THE TENNESSEE REGULATORY AUTHORITY
NASHVILLE, TENNESSEE

JOINT PETITION OF CARTWRIGHT CREEK, LLC AND TRA STAFF (AS A PARTY) TO INCREASE RATES AND CHARGES	))))	**DOCKET NO.16-00127**

AFFIDAVIT

I, Bruce Meyer, on behalf of Cartwright Creek, LLC hereby certify that the attached Direct Testimony represents my opinion in the above-referenced case.

BRUCE MEYER

Sworn to and subscribed before me
this 9 day of NOV, 2016.

NOTARY PUBLIC

My commission expires: _____

JASON BLACKSTOCK
STATE OF TENNESSEE NOTARY PUBLIC
WILLIAMSON COUNTY
My Commission Expires July 20, 2019

Q1. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND OCCUPATION FOR THE RECORD.

A1. My name is Bruce Meyer and my business address is 1551 Thompson's Station Road West, Thompson's Station, TN 37179.

Q2. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A2. I am employed by Sheaffer Wastewater Solutions, LLC as Operations Manager.

Q3. HOW LONG HAVE YOU BEEN EMPLOYED BY SHEAFFER WASTEWATER SOLUTIONS?

A3. I have been employed by Sheaffer Wastewater Solutions ("Sheaffer") for approximately sixteen years.

Q4. WHAT IS YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE?

A4. I have a Bachelor's and Master's Degrees in Environmental Engineering from the University of Illinois, Chicago and the Illinois Institute of Technology, respectively. I have over 35 years of experience in various roles in the environmental industry. I currently hold a Professional Engineering license in Tennessee and have State of Tennessee Biological Natural Systems and Collection System II wastewater operator's licenses.

Q5. WHAT DUTIES DO YOU PERFORM AS THE OPERATIONS MANAGER FOR SHEAFFER WASTEWATER SOLUTIONS?

A5. Sheaffer's primary business is the development of wastewater treatment and reuse systems for municipal and commercial clients. I am responsible for permitting, operational, engineering, construction, financial and business development on new and existing Sheaffer and Cartwright Creek projects and facilities here in Tennessee.

Q6. WHAT ARE YOUR RESPONSIBILITIES FOR CARTWRIGHT CREEK, LLC?

A6. I am responsible for the day-to-day operation, engineering and permitting for Cartwright Creek, LLC ("Cartwright Creek"). Among other things, this includes supervision and daily contact with the operators at the treatment systems; review and approval of expenditures; reviewing and resolving customer issues; scoping and obtaining proposals for maintenance work; establishment of contracts; contact with regulatory personnel on existing and future permit requirements and issues; preparation of portions of and review of tariff documents; engineering, including the investigation of physical and operational conditions of the Cartwright Creek collection and treatment systems; and evaluation of proposals for plant upgrades and replacement.

Q7. PLEASE DESCRIBE THE CARTWRIGHT CREEK SERVICE AREA.

A7. Cartwright Creek currently provides service to the Grassland's area in Williamson County, along with the Arrington Retreat and Hideaway subdivisions also in Williamson County. The Grassland facility was originally constructed sometime

in the 1970's and is need of extensive plant replacement. The Arrington Retreat and Hideaway subdivisions are relatively new. Arrington Retreat began operation in 2010 and Hideaway began operation in 2016.

Q8. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A8. My testimony will support and address the Joint Petition of Cartwright Creek and the TRA Staff (as a Party) to increase rates and charges ("the Joint Petition"). As shown on the TRA Staff Exhibits and Workpapers to the Joint Petition, the increase to base rates is approximately $45,000 with a separate increase for capital replacement of approximately $69,000. The $45,000 increase in base rates is necessary for Cartwright Creek to adequately cover its operating expenses and is addressed in more detail in the TRA Staff's testimony. The $69,000 increase for capital replacement is necessary for Cartwright Creek to establish a funding mechanism to maintain the existing systems and is the primary focus of my testimony.

Q9. MR. MEYER, WHY IS A SURCHARGE FOR CAPITAL REPLACEMENT NECESSARY?

A9. As I previously mentioned, the wastewater plant at the Company's Grassland facility was constructed in the 1970's and is in need of significant plant upgrades and replacement. Neither Sheaffer nor Cartwright Creek has access to the capital necessary to fund these plant upgrades and replacements. Therefore, the Joint

Petition is proposing a $7.50 per month surcharge to all customers to begin providing a funding mechanism for capital improvements.

Q10. DIDN'T THE TRA INCLUDE A PLANT REPLACEMENT FUNDING MECHANISM IN THE COMPANY'S LAST RATE CASE?

A10. No specific surcharge was provided in the last rate case. However, in Docket 09-00056, the TRA approved a tap fee of $5,000 for new customers and directed that "...these funds should be set aside in an escrow account dedicated to the necessary system repairs and upgrades and that the Company shall be required to file a request for preapproval by the Authority before funds can be expended from the escrow account."[1] Cartwright Creek subsequently created this escrow account and deposited the funds received from tap fees into it. Unfortunately, Cartwright Creek has only received two tap fees at Grasslands since the Company's last rate case.

Q11. PLEASE DESCRIBE THE MECHANISM THAT THE JOINT PETITION IS PROPOSING TO FUND PLANT REPLACEMENT AND UPGRADES.

A11. As shown on TRA Staff Exhibit, Schedule 7, Cartwright Creek is proposing a monthly Capital Replacement surcharge of $7.50 per month that would be applied to all customers. This charge will produce approximately $69,000 annually in funds for capital replacement. Cartwright Creek proposes that these funds be deposited as received on a monthly basis into a separate FDIC insured state

[1] TRA Order in Docket 09-00056, dated March 2, 2010, Page 8.

authorized interest-bearing bank account. Cartwright Creek would then file a request for preapproval by the Authority before any of the Capital Replacement funds could be expended from the account.

Q12. WILL THE $7.50 PER MONTH SURCHARGE BE ENOUGH TO FULLY FUND THE CAPITAL NECESSARY FOR PLANT REPLACEMENT AND UPGRADES?

A12. No. Cartwright Creek needs approximately $4 million to fully fund all the plant replacement and upgrade projects needed to provide continuing service and comply with permit requirements at the Grassland's plant. However, the initial Capital Replacement charge of $7.50 will begin to provide funds for projects that will keep the existing facility operating, provide cost savings, and refine the scope and costs for the future Grassland's upgrades. Ultimately, the Capital Replacement surcharge will likely need to be increased.

Q13. PLEASE DESCRIBE SOME OF THE PLANT REPLACEMENT AND UPGRADE PROJECTS NEEDED BY CARTWRIGHT CREEK.

A13. A full description of both the immediate and long-term capital replacement projects needed in the Grassland area are included in Exhibit 1 to my testimony. As shown on Exhibit 1 for Projects #1 through #21, Cartwright Creek has an immediate need for capital replacement of $448,000 over the next three years as follows:

Year	Amount
2017	$157,000
2018	180,500
2019	110,500
Total	**$448,000**

In addition to these immediate projects, Cartwright Creek also needs to fund another $3 to $4 million for long-term projects as shown on Exhibit #1 for Projects #22 and 23.

Q14. PLEASE SUMMARIZE THE COMPANY'S REQUESTED RELIEF FROM THE AUTHORITY.

A14. Cartwright Creek requests that the TRA approve the Joint Petition rate design for both base rates and capital replacement surcharges. Cartwright Creek affirms that all funds received from the capital replacement surcharge will be placed in its existing escrow account on a monthly basis. Cartwright Creek further affirms that it will seek preapproval from the TRA before any of the capital replacement funds are expended from the escrow account.

Q15. DOES THIS COMPLETE YOUR TESTIMONY?

A15. Yes, it does.

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EXHIBIT
of
BRUCE MEYER

ON BEHALF OF CARTWRIGHT CREEK, LLC

November 10, 2016

Cartwright Creek, LLC - Projects List 10/26/16

#	Site	Project	Estimated Cost	Year			Comments
				2017	2018	2019	
1	GL	Repairs to Wastewater System Tank	$10,000	$10,000			The main tank of the Grasslands treatment system has a small opening just above the water level at one place. A curved steel plate needs to be fabricated and welded.
2	GL	Entrance Road Repair	$35,000	$25,000	$10,000		The entrance to the Grasslands facility is on a road that passes by the River Rest HOA n Clubhouse, pool and tennis courts. The road just beyond the clubhouse is used only by Cartwright Creek. Portions of the road have been extremely worn and sunken in by sludge hauling trucks from Cartwright Creek The Homeowners Association is asking Cartwright Creek to repair it. We received a quotation for partial repair of the most severely damaged section for $25,000. The other portions of the road also need repair.
3	GL	Sludge Handling Improvements	$75,000	$25,000	$50,000		In January 2016 the Town of Thompsons Station stopped allowing disposal of outside septage and sludge in their wastewater treatment system. As a result, Grasslands sludge is being hauled a longer distance and with a higher end disposal cost. Costs went from $400 per truckload in 2015 to $750 per truckload in 2016. Approximately 8 truckloads per month are hauled, for an annual total of $72,000. These costs will continue to go up because the places to haul this material (without further processing at the Grasslands plant) are disappearing and, when available, are farther away. If Cartwright Creek could install a dewatering box system, which would reduce the water content in the sludge and allow landfill disposal, the cost for hauling and disposal would be cut in half.

4	GL	Collection System Infiltration Investig.	$75,000	$35,000	$40,000		The Grasslands collection system is 20 to 40+ years old and suffers from large amounts of rainwater and groundwater infiltration. The quantity of infiltration is a potential source of system overflows and hurts the performance of the existing system. Any long term solution to improving the Cartwright Creek treatment system will require elimination of a majority of the infiltration. The infiltration sources need to be identified so a cost effective repair plan can be developed. Cartwright Creek has contacted firms that do the investigations consisting of multiple steps, including mapping, visual inspections, smoke testing, video inspection, and flow monitoring. We have received an estimate of $100,000 for the study from a qualified testing firm. The study costs could be higher depending upon what the initial phases reveal. The first phase of the work, consisting of mapping and visually inspecting manholes was completed for $25,000 in September 2016. The next phases of the study are being identified and the work needs to continue.
5	GL	Plant Replacement/Upgrade Study	$50,000	$30,000	$20,000		The existing Grasslands wastewater treatment system is over 40 years old and needs significant refurbishing. The existing system cannot meet the permitted discharge standard for Total Nitrogen, which is expected to be more stringent in the next permit reissuance (already overdue). There are multiple potential options for processes that might be added to the existing plant or replace the existing plant. There needs to be a concept level engineering study that evaluates the performance and costs of the various options and come up with recommended options for Cartwright Creek.
6	GL	Main Pump Station Control Refurbishing	$25,000		$5,000	$20,000	The electrical panels and controls for the Main Grasslands Pump Station that pumps all the wastewater to the Grasslands treatment plant are 40+ years old. The panels are in need of replacement due to the damp environment 30' below ground. The

							level control system is a technology outdated about 20 years ago and has failed causing alarms and occasional overflows.
7	GL	Rerouting of Sample Lines	$10,000		$10,000		The influent and effluent samples are taken via individual pumps that pump to two wastewater samplers in the building. The samplers are flow through on a continuous basis and they flow back into the main pump station and are monitored twice by the influent flow meter. We believe this is a main reason that the influent and effluent flow readings for Grasslands never match. This will eventually be a permit issue. Rerouting the discharge of the sampler lines to the wastewater process tank will eliminate the double reading.
8	AR	Irrigation Pump Station Improvements	$7,500		$7,500		The irrigation pump, which is suspended at the bottom of a 20' deep manhole, stops working frequently during irrigation periods due to debris (plastics, snails, algae) carryover to the manhole. A screening device that is easily cleanable from the surface needs to be designed and installed.
9	GL	Old Natchez Pump Station 2 Refurbishing	$25,000			$25,000	The pump station, serving about 75 homes, is over 20 years old. The control panel is outside and weathered and with worn interior electrical parts. The tops of the wet well and valve vault are rusted and need replacing. The pump control and electrical feed wiring need to be replaced due to age. The wooden fence needs to be painted with some repairs to slats. The pumps need to be pulled, inspected, reworked, and/or replaced.
10	GL	Remote Monitoring at Old Natchez Pump Stations	$21,000		$10,000	$11,000	The two Old Natchez pump stations have no remote notifications of a pending or immediate problem. Cartwright Creek staff visually inspect each station once a day. The cellular based dialers available now would link these pump stations to a remote server that would be custom programmed by Cartwright Creek for

							alarm monitoring. It would also monitor pump run times and starts to anticipate and early warn of potential problems. It would also eliminate the need for a daily visual inspection by staff.
11	GL	Chemical Room Scales and Monitor	$8,000		$8,000		The scales for the chlorine gas and sulfur dioxide gas cylinders (to monitor gas usage and required to be reported monthly TDEC) need to be replaced because they are each over 20 years old. Chlorine gas monitoring and alarm equipment needs to be purchased and installed.
12	GL	Confined Space Entry Equipment	$10,000		$10,000		Electric hoist, boom, winch, concrete mounting pad, harness. It could also be used to remove the pumps.
13	GL	Lowering of Manhole Top	$5,000	$5,000			Need to lower the top of a manhole in an isolated area near the Cartwright Creek plant to create a collection system low point.
14	GL	Building Interior Refurbishing	$10,000			$10,000	The 40+ year old treatment building, consisting of a lab, chemical room, blower room, and washroom needs repair due to the age. Some of the refurbishing: Washroom: Drywall repair, floor repair, hot and cold piping repair, sink and toilet replacement, interior door replacement, light and switch repair. Laboratory: Lighting replacement, fixing and painting cabinets, repair and replacement of windows. Chemical and Blower room: Similar structural repairs.
15	GL	External Storage Building	$7,500			$7,500	The Grasslands building has no interior storage for large tools, supplies, mowers, etc. A separate storage building (Lowes, Home Depot) would provide this and allow better organization of the lab and blower room as well as the outside area.
16	GL	Wastewater Samplers Replacement	$20,000		$10,000	$10,000	The influent and effluent wastewater automatic samplers are no longer manufactured. Key electronic and mechanical parts are unobtainable.

17	AR	Water Service to Plant and Safety Shower	$12,000			$12,000	Potable water was not run to the treatment plant. For operator safety and general cleanup, potable water is needed. We will eventually need to start using sodium hypochlorite (high strength bleach) for disinfection. The site needs an emergency shower for worker safety.
18	AR	Influent Flow Meter	$10,000			$10,000	The flow meter installation was postponed during initial plant construction until there were sufficient homes to give a wastewater flow that could be measured. The cost includes not only the meter but influent piping modifications to ensure a full pipe at the measurement point.
19	AR	Building Refurbishing	$5,000			$5,000	The site building is a small frame structure that needs repairs due to insects and rodents.
20	AR HA	ATV For Irrigation Area inspection and Maintenance	$12,000	$12,000			Between Arrington Retreat and Hideaway Cartwright Creek now owns and maintains about 20 acres of drip and spray wastewater application areas. These need to be visually inspected for leaks and other problems on a regular basis, which is time prohibitive on foot. The fields are natural and difficult to walk and possible snakes during the right weather conditions. When a repair is required, tools must be brought into the field. This is a personnel safety concern in wet and hot weather. A two seat ATV such as a Deere Gator or equivalent with tool carrying capacity and trailer is needed.
21	HA	Commercial Zero Turn for Hideaway Irrigation Mowing	$15,000	$15,000			The Hideaway treatment system has approximately 10 acres of drip irrigation field that need to be mowed 2x per month.
		Totals Items 1 through 21	$448,000	$157,000	$180,500	$110,500	

22	GL	Collection System Infiltration Reduction	$0.5 million+	Schedule to be determined 2-3 years once funds are available			The scope and cost of collection system repairs will be identified 4 above. Work will include interior lining of manholes and pipe and pipe replacement.
23	GL	Treatment System Replacement	$3 -$4 million	Schedule to be determined 2-3 years once funds are available			The Grasslands system is 40+ years old and doesn't meet the Total Nitrogen limit on its Harpeth River discharge permit. The scope and cost will be identified 5 above. Work may include replacement of the entire treatment system, or construction of additional treatment steps, or refurbishing the existing system or a combination thereof. The main pump station will need to be replaced regardless of treatment upgrades.