

**AGENDA**  
**LOUDON COUNTY SOLID WASTE DISPOSAL COMMISSION**  
**December 10, 2019**  
**6:30 p.m.**  
**LOUDON COUNTY BUILDING**  
**Loudon, Tennessee**

1. Opening of Meeting, Pledge of Allegiance, Invocation
2. Approval of Minutes – November 12, 2019
3. Items of Public Concern
4. Poplar Springs Discussion
5. Cash Activity Report
6. Operations Report
7. Contract Modification Update
8. Attorney's Report
9. Chairman's Report
10. Other Items of Commission's Consideration
11. Adjourn

## **Minutes**

### **Loudon County Solid Waste Disposal Commission**

**November 12th, 2019**

The Loudon County Solid Waste Disposal Commission met on November 12th, 2019 at 6:30 p.m. at the Loudon County Courthouse Annex. The Commission was represented by Steve Field, Art Stewart, John Watkins, Bruce Hamilton, Kelly Littleton-Brewster, Larry Jameson, and Tammi Bivens. Other attendees included Attorney Kevin Stevens, Mayor Bradshaw, Mayor Aikens, and Mayor Harris; Santek representatives Ben Johnston, Kaitlyn Hampton, and Justin Givens; and residents JJ Cox and Ty Ross.

Mr. Steve Field called the meeting to order at 6:30 p.m.

Ms. Kelly Littleton-Brewster led the Commission in the Pledge of Allegiance and the invocation.

**MOTION:** Ms. Kelly Littleton-Brewster made a motion to approve the minutes of October 15th, 2019.

Mr. Art Stewart seconded the motion. The minutes were approved unanimously.

There were not any items of public concern.

There was extensive discussion regarding the status of the Poplar Springs landfill repairs and approval of future expenditures for future maintenance of the landfill. The Commission and the Stakeholder representatives addressed the process for approving Poplar Springs expenditures and reiterated that the Commission would require signatures from all 3 Stakeholders in order to approve expenditures.

Mayor Aikens suggested the implementation of a small tipping fee at the landfill for which the funds would be allocated to the Poplar Springs subfund for potential future expenditures for maintenance and repairs. It was determined that a document would be distributed in a future meeting which would provide a comparison of potential tipping fee rate adjustments.

Mr. Steve Field inquired about appointing a Solid Waste Director for Loudon County. It was discussed that each stakeholder would contribute to funding and managing the position.

Ms. Kaitlyn Hampton presented the Cash Activity Report and the Operations Report for October 2019.

Mr. Justin Givens provided an update regarding the Module E cell construction at the landfill. He stated that the landfill has started to accept waste into the new cell and the initial layer of waste is almost fully established. Mr. Ben Johnston confirmed that the airspace utilization schedule would reflect the addition of the new cell in next month's meeting packet.

Mr. Steve Field updated that the TDEC approval letter for Module E has been included in the meeting packet.

Mr. Larry Jameson spoke about the mud on the highway outside of the landfill. He stated that the problem of debris and mud leaving the landfill has persisted and that he has witnessed trucks exiting the landfill with mud on their tires. Mr. Givens updated about the measures he and his crew have taken to alleviate those issues such as the following: stationing employees to wash the highway, scales, undercarriage, and tires of the trucks as they exit the wheel wash; stationing an employee to ensure that all trucks are utilizing the wheel wash; laying additional rock; and using a street sweeper to collect dirt and debris from the highway.

Mr. Kevin Stevens provided an update regarding the Contract Modification process. He stated that he has been working with both Dr. Bachus and Mr. Steve Field to produce a phased closure plan that will obligate Santek to close each module of the expansion within 180 days of opening a new module.

Mr. Ben Johnston provided an updated contract document draft with Santek's proposed amendments. Mr. Johnston spoke specifically of the closure and post closure schedule for which Santek has proposed the obligation to close each module of expansion within 180 days of receiving TDEC's written certification letter of completion of a new cell. Mr. Johnston also updated that Santek has requested 270 days or until December 31, 2038 following the end of the term of the proposed contract to complete final closure of the amended footprint of the landfill. Santek has also requested a two-year notice from the LCSWDC if the Board does not plan to construct the 14.7 acres of unconstructed area that is not currently included in the amended footprint of the landfill. Santek has also requested to either remove the language regarding the 14.2 acres of unconstructed footprint or insert language that the acreage be designated for the purposes of LCSWDC to allow for TDEC's review. Santek has also proposed their ability to utilize any TDEC approved financial assurance mechanism in regards to the closure bond.

The LCSWDC agreed to review the proposed contract amendment and submit their remarks to Mr. Kevin Stevens. Mr. Stevens indicated that he would be consulting with the LCSWDC auditor for input on the financial assurance bond and how it would be reflected in the annual audit.

Mayor Bradshaw provided a Poplar Springs repair update. He informed that soil testing has been conducted, lime has been spread at four tons per acre, and grass seed was reseeded. TDEC has requested water testing to be completed that could cost up to \$1,300; however, Mayor Bradshaw has opposed it.

Mr. Kevin Stevens presented the invoice for the lime treatment at Poplar Springs totaling \$697.

**MOTION:** Mr. Bruce Hamilton made a motion to pay the invoice from the Poplar Springs subfund. Mr. Art Stewart seconded the motion. It passed unanimously.

Mr. Steve Field presented the invoice for legal fees from Lenoir City's Attorney Harrison totaling \$5,000.

**MOTION:** Mr. Larry Jameson made a motion to pay the invoice from Attorney Harrison. Mr. Bruce Hamilton seconded the motion. Ms. Kelly Littleton-Brewster opposed the motion. Ms. Tammi Bivens chose to abstain. The motion was approved 5-2.

Mr. Steve Field presented the Chairman's report and the following invoices for payment: monthly legal fees from Kennerly Montgomery totaling \$2,500; fees for posting the meeting notice totaling \$53; and employee payroll taxes totaling \$53.83.

**MOTION:** Mr. Bruce Hamilton made a motion to adjourn the meeting at 8:06 p.m. and Ms. Kelly Littleton-Brewster seconded the motion. It passed unanimously.

The Commission's next scheduled meeting is December 10th, 2019 at 6:30 p.m. at the Loudon County Courthouse Annex.

Respectfully submitted,

Steve Field, Chairman

Loudon County Solid Waste Disposal Commission

**Loudon County Department of Accounts and Budgets**  
**Solid Waste Disposal Fund 207**  
**Monthly Cash Report**  
**November 2019**

October 2019 Combined Ending Cash Balance per Monthly Report	3,942,209.13
Adjustments:	
	0.00
	<u>0.00</u>
Total Adjustments	<u>0.00</u>
Adjusted October 2019 Combined Ending Balance per Loudon Co Trustee	<u><u>3,942,209.13</u></u>

**Solid Waste Disposal Commission Operating Fund**

Operating Fund Ending Balance October 2019	3,878,772.55
Cash Receipts:	
Trustee's Collections - Prior Year	0
Surcharge - Host Fees (October 2019)	11,379.86
Surcharge - security Fees (October 2019)	14,368.51
Investment Income	<u>8,763.04</u>
Total Monthly Revenue	34,511.41
Cash Disbursements:	
Board & Committee Members Fees	(350.00)
Social Security	(3.10)
Medicare	(0.72)
Audit Services (Mitchell Emert & Hill)	
Contracts with Private Agencies (Santek)	
Engineering Services (Santek)	
Contributions (Loudon Utilities - Quarterly)	
Legal Services ( Oct 2019)	(2,500.00)
Legal Notices	(53.00)
Other Contracted Services (Mowing)	
Building & Content Insurance	
In-Service/Staff Development (Refund)	
Trustee's Commission	<u>0.00</u>
Total Cash Disbursements	(2,906.82)
Reconciling Item	
Check Voided & Re-issued	<u>0.00</u>
<b><u>Operating Fund Ending Balance November 2019</u></b>	<b><u><u>3,910,377.14</u></u></b>

**Poplar Springs Subfund**

Poplar Springs Subfund Balance October 2019	63,436.58
Cash Receipts:	
	<u>0.00</u>
Total Monthly Revenue	0.00
Cash Disbursements:	
Legal Fees - Gregory H. Harrison	(5,000.00)
BB&T Financial (Soil Analysis)	(45.00)
Co-op (Lime & Grass Seed)	(695.45)
Total Cash Disbursements	<u>(5,740.45)</u>
<b><u>Poplar Springs Subfund Balance November 2019</u></b>	<b><u><u>57,696.13</u></u></b>

<b><u>TOTAL COMBINED OPERATING AND POPLAR SPRINGS NOVEMBER 2019 BALANCE</u></b>	<b><u><u>3,968,073.27</u></u></b>
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Combined Summary - November 2019	
Beginning Balance	3,942,209.13
Plus Operating Revenue	34,511.41
Less Operating and Poplar Springs Disbursements	(8,647.27)
<b>TOTAL COMBINED BALANCE - NOVEMBER 2019</b>	<b><u><u>3,968,073.27</u></u></b>



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**Monthly Operations Report**  
**Matlock Bend Landfill**  
**December 10, 2019**

**Presented by:**  
**Santek Environmental, Inc.**

**I. OPERATIONS**

- A. Tonnage Report
- B. Customer Report
- C. Inspection
- D. Materials Classification Report
- E. Waste Characterization Report
- F. Tire Report

**II. AIRSPACE UTILIZATION SCHEDULE**

**III. HOST & SECURITY FEES**

**IV. SECOND AMENDMENT DRAFTS**

**V. POPLAR SPRINGS INSPECTION**

**LANDFILL TONNAGE VOLUME**  
**MONTH ENDING -**  
**NOVEMBER 2019**

**MATLOCK BEND LANDFILL**

MONTH	2018	2019	2018 TO 2019
JANUARY	15,858.64	13,578.63	(2,280.01)
FEBRUARY	13,865.56	11,770.32	(2,095.24)
MARCH	15,779.17	13,291.24	(2,487.93)
APRIL	15,147.53	14,140.50	(1,007.03)
MAY	13,276.58	14,366.28	1,089.70
JUNE	12,717.37	9,827.56	(2,889.81)
JULY	12,353.95	10,975.46	(1,378.49)
AUGUST	13,665.82	10,202.83	(3,462.99)
SEPTEMBER	11,142.60	10,883.70	(258.90)
OCTOBER	12,551.31	11,554.37	(996.94)
NOVEMBER	12,488.68	8,883.28	(3,605.40)
DECEMBER			0.00
TOTAL	148,847.21	129,474.17	(19,373.04)

**DAILY AVG FOR ANY  
 RUNNING 30 DAY  
 PERIOD**      **296.11**

**LOUDON COUNTY**

MONTH	2018	2019	2018 TO 2019
JANUARY	471.26	489.09	17.83
FEBRUARY	419.40	437.25	17.85
MARCH	496.17	527.14	30.97
APRIL	524.80	523.08	(1.72)
MAY	515.70	520.19	4.49
JUNE	506.85	527.77	20.92
JULY	551.73	581.24	29.51
AUGUST	525.59	505.05	(20.54)
SEPTEMBER	456.20	468.00	11.80
OCTOBER	537.94	494.52	(43.42)
NOVEMBER	470.26	460.56	(9.70)
DECEMBER			0.00
TOTAL	5,475.90	5,533.89	57.99

**DAILY AVG FOR 22.5  
 DAY PERIOD**      **394.81**

**LENOIR CITY**

MONTH	2018	2019	2018 TO 2019
JANUARY	311.92	359.51	47.59
FEBRUARY	294.51	310.75	16.24
MARCH	353.46	364.95	11.49
APRIL	368.49	399.46	30.97
MAY	410.46	421.45	10.99
JUNE	348.15	376.08	27.93
JULY	391.93	464.25	72.32
AUGUST	390.42	423.47	33.05
SEPTEMBER	338.04	362.91	24.87
OCTOBER	401.95	400.49	(1.46)
NOVEMBER	380.85	360.62	(20.23)
DECEMBER			0.00
TOTAL	3,990.18	4,243.94	253.76

**CITY OF LOUDON**

MONTH	2018	2019	2018 TO 2019
JANUARY	363.15	434.56	71.41
FEBRUARY	344.19	367.36	23.17
MARCH	371.66	434.95	63.29
APRIL	427.07	450.53	23.46
MAY	442.51	481.49	38.98
JUNE	412.21	464.46	52.25
JULY	431.11	549.23	118.12
AUGUST	432.46	461.07	28.61
SEPTEMBER	381.35	419.83	38.48
OCTOBER	429.98	452.47	22.49
NOVEMBER	397.88	398.85	0.97
DECEMBER			0.00
TOTAL	4,433.57	4,914.80	481.23

**WASTE SERVICES OF TN**

MONTH	2018	2019	2018 TO 2019
JANUARY	2,437.61	2,912.60	474.99
FEBRUARY	2,331.36	2,545.03	213.67
MARCH	2,635.18	2,954.94	319.76
APRIL	2,721.66	3,275.88	554.22
MAY	2,902.00	3,419.31	517.31
JUNE	2,707.31	3,100.54	393.23
JULY	2,822.88	3,406.12	583.24
AUGUST	2,816.39	3,323.31	506.92
SEPTEMBER	2,389.80	3,047.17	657.37
OCTOBER	2,814.76	3,448.07	633.31
NOVEMBER	2,560.73	3,335.03	774.30
DECEMBER			0.00
TOTAL	29,139.68	34,768.00	5,628.32

**TENNESSEE TRASH**

MONTH	2018	2019	2018 TO 2019
JANUARY	3,854.46	5,184.96	1,330.50
FEBRUARY	3,518.63	4,252.39	733.76
MARCH	4,121.81	5,009.22	887.41
APRIL	4,469.98	5,315.21	845.23
MAY	4,912.76	5,341.05	428.29
JUNE	4,503.72	0.00	(4,503.72)
JULY	4,825.80	0.00	(4,825.80)
AUGUST	5,062.65	3.31	(5,059.34)
SEPTEMBER	4,170.33	4.72	(4,165.61)
OCTOBER	4,675.17	52.03	(4,623.14)
NOVEMBER	4,872.03	77.20	(4,794.83)
DECEMBER			0.00
TOTAL	48,987.34	25,240.09	(23,747.25)



**LANDFILL TONNAGE VOLUME**  
**MONTH ENDING -**  
**NOVEMBER 2019**

**KIMBERLY CLARK - PAPER WASTE**

MONTH	2018	2019	2018 TO 2019
JANUARY	5,057.39	0.00	(5,057.39)
FEBRUARY	3,563.87	0.00	(3,563.87)
MARCH	4,234.12	0.00	(4,234.12)
APRIL	3,071.82	0.00	(3,071.82)
MAY	0.00	0.00	0.00
JUNE	0.00	0.00	0.00
JULY	0.00	0.00	0.00
AUGUST	0.00	0.00	0.00
SEPTEMBER	0.00	0.00	0.00
OCTOBER	0.00	0.00	0.00
NOVEMBER	0.00	0.00	0.00
DECEMBER			0.00
TOTAL	15,927.20	0.00	(15,927.20)



Choose Inspection Type...

**TENNESSEE DIVISION OF SOLID WASTE MANAGEMENT**  
**CLASS I FACILITY INSPECTION CHECKLIST\***

**CLASS I  
FACILITY**

SITE		DATE 20191114	TIME 01:35	WEATHER 49, sun
Loudon County Landfill SNL530000203 21712 Highway 72 North Loudon				EFO KNOX
*SEE DISCLAIMER ON LAST PAGE				
VIOLATION		REGULATION		OBSERVATION NVO AOC V1 V2
BUFFER ZONE STANDARDS FOR SITING LANDFILLS				
8310	BUFFER ZONE STANDARD VIOLATED	0400-11-01-.04(3)(a)		<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
COLLECTED LEACHATE				
8330	LEACHATE IMPROPERLY MANAGED	0400-11-01-.04(4)(a)8(i-iii) ?		<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
8340	INADEQUATE LEACHATE COLLECTION SYSTEM	0400-11-01-.04(4)(a)7 ?		<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
COMMUNICATIONS				
8130	NO COMMUNICATION DEVICES	0400-11-01-.04(2)(f) ?		<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
COVER MATERIAL				
8160	UNAVAILABILITY OF COVER MATERIAL.	0400-11-01-.04(2)(h) ?		<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
DEAD ANIMALS				
8250	DEAD ANIMALS IMPROPERLY HANDLED	0400-11-01-.04(2)(k)5.(ii) (I-III) ?		<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
DUST CONTROL				
8190	INADEQUATE DUST CONTROL	0400-11-01-.04(2)(j) ?		<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
DUTY TO PROVIDE INFORMATION				

\*SEE DISCLAIMER ON LAST PAGE

VIOLATION		REGULATION	OBSERVATION			
			NVO	AOC	V1	V2
<b>DUTY TO PROVIDE INFORMATION</b>						
<b>8530</b>	UNSATISFACTORY RECORDS OR REPORTS	0400-11-01-.02(5)(a)7 TCA 68-211-862(a)	?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						
<b>8590</b>	PERMITS, PLANS, OPERATING MANUAL NOT AVAILABLE	0400-11-01-.02(5)(a)(7)	?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						
<b>FIRE SAFETY</b>						
<b>8080</b>	EVIDENCE OF OPEN BURNING	0400-11-01-.04(2)(c)1	?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						
<b>8090</b>	INADEQUATE FIRE PROTECTION	0400-11-01-.04(2)(c)2	?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						
<b>GAS MIGRATION CONTROL STANDARDS</b>						
<b>8380</b>	INADEQUATE GAS MIGRATION CONTROL SYSTEM	0400-11-01-.04(5)(a)	?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						
<b>8390</b>	INADEQUATE MAINTENANCE OF GAS MIGRATION CONTROL SYSTEM	0400-11-01-.04(5)(a)	?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						
<b>GENERAL FACILITY STANDARDS</b>						
<b>8010</b>	INADEQUATE VECTOR CONTROL	0400-11-01-.04(2)(a)1	?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						
<b>8020</b>	ACCESS NOT LIMITED TO OPERATING HOURS	0400-11-01-.04(2)(a)4	?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						
<b>8030</b>	INADEQUATE ARTIFICIAL OR NATURAL BARRIER	0400-11-01-.04(2)(b)1	?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						

*SEE DISCLAIMER ON LAST PAGE				
VIOLATION		REGULATION	OBSERVATION	
			NVO	AOC V1 V2
<b>GENERAL FACILITY STANDARDS</b>				
<b>8040</b>	INADEQUATE INFORMATION SIGNS	0400-11-01-.04(2)(b)2 TCA 68-211-703(h)	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8050</b>	UNSATISFACTORY ACCESS ROAD(S)/PARKING AREA(S)	0400-11-01-.04(2)(b)3	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8060</b>	CERTIFIED PERSONNEL NOT PRESENT DURING OPERATING HOURS	0400-11-01-.04(2)(b)5	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8070</b>	UNAPPROVED SALVAGING OF WASTE	0400-11-01-.04(2)(b)6	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>LITTER CONTROL</b>				
<b>8110</b>	UNSATISFACTORY LITTER CONTROL	0400-11-01-.04(2)(d)	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>OPERATING EQUIPMENT</b>				
<b>8140</b>	INADEQUATE OPERATING EQUIPMENT	0400-11-01-.04(2)(g)	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8150</b>	UNAVAILABILITY OF BACKUP EQUIPMENT	0400-11-01-.04(2)(g)	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>OVERALL PERFORMANCE STANDARD</b>				
<b>8270</b>	EXPOSED SOLID WASTE	0400-11-01-.04(2)(a)(3)	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8320</b>	INADEQUATE MAINTENANCE OF LEACHATE MANAGEMENT SYSTEM (INSPECTOR TO CHECK AND RECORD LEACHATE LEVELS AT EVERY LANDFILL SUMP)	0400-11-01-.04(2)(a)(3) 0400-11-01-.04(4)(a)7	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				

*SEE DISCLAIMER ON LAST PAGE				
VIOLATION		REGULATION	OBSERVATION NVO AOC V1 V2	
<b>OVERALL PERFORMANCE STANDARD</b>				
<b>8350</b>	LEACHATE OBSERVED AT THE SITE	0400-11-01-.04(2)(a)(3) 0400-11-01-.04(4)(a)6,	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8360</b>	LEACHATE ENTERING RUN-OFF	0400-11-01-.04(2)(a)(3) 0400-11-01-.04(4)(a)6	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8370</b>	LEACHATE ENTERING A WATER COURSE	0400-11-01-.04(2)(a)(3) 0400-11-01-.04(4)(a)6	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8420</b>	POTENTIAL FOR EXPLOSIONS OR UNCONTROLLED FIRES	0400-11-01-.04(2)(a)2 0400-11-01-.04(5)(a)	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8490</b>	EXCESSIVE POOLING OF WATER	0400-11-01-.04 (2)(a)3 0400-11-01-.04(8)(c)4(iii)	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8520</b>	DUMPING OF WASTE INTO WATER	0400-11-01-.04 (2)(a)3	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>PERMANENT BENCHMARK</b>				
<b>8280</b>	NO PERMANENT BENCHMARK	0400-11-01-.04(2)(o)	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>PERSONNEL SERVICES</b>				
<b>8120</b>	INADEQUATE EMPLOYEE FACILITIES	0400-11-01-.04(2)(e)	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>PROPER OPERATION AND MAINTENANCE</b>				
<b>8540</b>	GROUNDWATER MONITORING SYSTEM IMPROPERLY MAINTAINED	0400-11-01-.02(5)(a)4	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				

\*SEE DISCLAIMER ON LAST PAGE

VIOLATION		REGULATION	OBSERVATION			
			NVO	AOC	V1	V2
<b>RANDOM INSPECTION PROGRAM</b>						
<b>8290</b>	INADEQUATE RANDOM INSPECTION PROGRAM	0400-11-01-.04(2)(s) ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						
<b>RECORDS OF ORIGIN AND AMOUNT OF SOLID WASTE</b>						
<b>8610</b>	NO OPERATING SCALES AND/OR FAILURE TO MAINTAIN WASTE RECORDS	TCA 68-211-862(a)(b)(1)(2) ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						
<b>RUN-ON, RUN-OFF, AND EROSION CONTROL</b>						
<b>8170</b>	INADEQUATE MAINTENANCE OF RUN-ON/RUN-OFF SYSTEM(S)	0400-11-01-.04(2)(i)1-5 ? 0400-11-01-.04(8)(c)4(i)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						
<b>8180</b>	INADEQUATE EROSION CONTROL	0400-11-01-.04(2)(i)6 ? 0400-11-01-.04(8)(c)4(ii)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						
<b>SPECIAL WASTE APPROVAL PROCESS</b>						
<b>8300</b>	MISHANDLING OF SPECIAL WASTE	0400-11-01-.01(4)(d)1 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						
<b>UNLAWFUL METHODS OF DISPOSAL</b>						
<b>8570</b>	OPERATION DOES NOT CORRESPOND WITH ENGINEERING PLANS (EVALUATE AND RECORD THE APPROXIMATE INTERIOR AND EXTERIOR SLOPE OF THE LANDFILL)	TCA 68-211-104(3) ? TCA 68-211-105(b)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						
<b>8580</b>	OPERATION DOES NOT CORRESPOND WITH PERMIT CONDITIONS	TCA 68-211-104(3) ? 0400-11-01-.02(5)(a)(1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						
<b>WASTE HANDLING AND COVER STANDARDS</b>						
<b>8430</b>	WASTE NOT CONFINED TO A MANAGEABLE AREA	0400-11-01-.04(6)(a)1 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS						

*SEE DISCLAIMER ON LAST PAGE				
VIOLATION		REGULATION	OBSERVATION NVO AOC V1 V2	
<b>WASTE HANDLING AND COVER STANDARDS</b>				
<b>8440</b>	IMPROPER SPREADING OF WASTE	0400-11-01-.04(6)(a)2	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8450</b>	IMPROPER COMPACTING OF WASTE	0400-11-01-.04(6)(a)2	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8460</b>	UNSATISFACTORY INITIAL COVER	0400-11-01-.04(6)(a)3 0400-11-01-.04(6)(a)5	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8470</b>	UNSATISFACTORY INTERMEDIATE COVER	0400-11-01-.04(6)(a)4 0400-11-01-.04(6)(a)5	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8480</b>	UNSATISFACTORY FINAL COVER	0400-11-01-.04(6)(a)6 0400-11-01-.04(8)(c)4	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8510</b>	UNSATISFACTORY STABILIZATION OF COVER	0400-11-01-.04(6)(a)5,6	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>WASTE RESTRICTIONS</b>				
<b>8210</b>	UNAUTHORIZED WASTE ACCEPTED	0400-11-01-.04(2)(k)1 0400-11-01-.04(2)(k)6	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				
<b>8220</b>	UNAPPROVED SPECIAL WASTE ACCEPTED	0400-11-01-.01(4)(b) 0400-11-01-.01(4)(c)5	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS				



*SEE DISCLAIMER ON LAST PAGE				
VIOLATION		REGULATION	OBSERVATION	
			NVO	AOC V1 V2
<b>WASTE RESTRICTIONS</b>				
<b>8230</b>	TIRES IMPROPERLY HANDLED	0400-11-01-.04(2)(k)3.(i)	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>COMMENTS</b>				
<b>8240</b>	MEDICAL WASTE IMPROPERLY HANDLED	0400-11-01-.04(2)(k)4.(i-iv)	?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>COMMENTS</b>				

LEACHATE LEVELS

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*\*Disclaimer: The information contained in these documents (checklists/notes, etc.) is not intended to be all inclusive and is subject to change. These documents are intended solely for use by DSWM staff. These documents are not a substitute for evaluation of compliance in accordance with applicable laws and regulations. These documents are not intended for, nor can they be relied upon, to create any rights, substantive or procedural, enforceable or useable by any party in litigation with the State of Tennessee or its employees.*

**SAVE FORM**

Follow-Up Inspection Date

Inspector Name



**Materials Classification Report**  
**Matlock Bend Landfill**  
**Monthly Tonnage Summary November 2019**

Material	Tonnage	2016 Sludge %		2017 Sludge %	
<b>MSW</b>					
MSW	<b>7,087</b>	January	4%	January	5%
		February	3%	February	8%
		March	4%	March	8%
		April	3%	April	7%
		May	4%	May	4%
		June	2%	June	2%
		July	2%	July	3%
		August	3%	August	4%
		September	2%	September	7%
		October	3%	October	8%
		November	3%	November	6%
		December	3%	December	5%
<b>Special Waste</b>					
Other	1,459				
Ash	0				
Sludge	338				
<b>Total Special Waste</b>	<b>1,797</b>				
<b>Total MSW &amp; SW</b>	<b>8,884</b>				
Tires	30				
<b>Total Material</b>	<b>8,914</b>				
<b>% MSW</b>	<b>80%</b>				
<b>% Special Waste</b>	<b>20%</b>				
<b>% Sludge</b>	<b>4%</b>				

2018 Sludge %		2019 Sludge %	
January	4%	January	5%
February	4%	February	5%
March	5%	March	4%
April	6%	April	4%
May	8%	May	3%
June	9%	June	6%
July	6%	July	5%
August	4%	August	4%
September	2%	September	4%
October	2%	October	3%
November	5%	November	4%
December	5%	December	

## 2019 Loudon MSW and Special Waste Analysis

[illegible]

**2019-2020 Matlock Bend  
Landfill Tire Report**

<b>Month</b>	<b>Tonnage</b>
Jul-19	18.69
Aug-19	48.10
Sep-19	49.21
Oct-19	19.57
Nov-19	41.03
Dec-19	
Jan-20	
Feb-20	
Mar-20	
Apr-20	
May-20	
Jun-20	
<b>Total (tons)</b>	<b>176.6</b>

## Matlock Bend Landfill - Module E

### 2019 Airspace Projection / Construction Schedule

		MONTHLY TONNAGE			UTILIZATION FACTOR		
		10,476			1.28		
DATE	REMAINING AIRSPACE <sup>1</sup> (CY)	TONNAGE	ACTUAL / PROJECTED <sup>2</sup>	UTILIZATION FACTOR (CY/TON) <sup>3</sup>	MONTHLY VOLUME CONSUMED (CY)	ENDING MONTHLY REMAINING AIRSPACE (CY)	
May 6, 2019	785,212	-	-	-	-	-	
May 7 - 31, 2019	-	11,657	A	1.28	14,920	770,292	
June	-	9,863	A	1.28	12,625	757,667	
July	-	11,013	A	1.28	14,097	743,570	
August	-	10,239	A	1.28	13,105	730,465	
September	-	10,916	A	1.28	13,972	716,492	
October	-	11,599	A	1.28	14,847	701,646	
November	-	8,914	A	1.28	11,410	690,236	
December	-	10,476	P	1.28	13,410	676,826	
January '20	-	10,476	P	1.28	13,410	663,416	
February	-	10,476	P	1.28	13,410	650,007	
March	-	10,476	P	1.28	13,410	636,597	
April	-	10,476	P	1.28	13,410	623,187	
May	-	10,476	P	1.28	13,410	609,778	
June	-	10,476	P	1.28	13,410	596,368	
July	-	10,476	P	1.28	13,410	582,958	
August	-	10,476	P	1.28	13,410	569,548	
September	-	10,476	P	1.28	13,410	556,139	
October	-	10,476	P	1.28	13,410	542,729	
November	-	10,476	P	1.28	13,410	529,319	
December	-	10,476	P	1.28	13,410	515,910	

<sup>1</sup> = Remaining airspace based on May 6, 2019 aerial survey.

Full Date

March-2024

<sup>2</sup> = Projected tonnages are based on a 3 month average.

<sup>3</sup> = Utilization rate based on the annual utilization rate per October 27, 2008 construction meeting (Avg. Utilization = 1.22 cy/ton)

#### Tonnage for Past 3 Months

September	10,916
October	11,599
November	8,914
<b>Average</b>	<b>10,476</b>

cc: Tim  
Matt  
Ben  
Ron  
Justin  
Jason  
Mark



650 25<sup>th</sup> Street NW, Ste 100  
Cleveland, TN 37311

Phone: (423) 303-7101  
Toll Free: (800) 467-9160  
www.santekenviro.com

December 9, 2019

Loudon County Solid Waste Disposal Commission  
100 River Road  
P.O. Box 351  
Loudon, TN 37774

Dear Steve:

Pursuant to Section 10.6 and 10.7 of the Sanitary Landfill Operation Agreement between Loudon and Santek as of July 1, 2007, Santek agreed to pay the Commission a host fee and security fee as defined in the Agreement. The following recap reflects the calculation for the period November 1, 2019 to November 30, 2019:

Host Fees (Greater of below) –	
Total Tip Fees Billed	\$218,856.80
Host Fee Percentage	<u>3.96%</u>
	\$ 8,666.73
Minimum Fee	<u>\$ 10,560.00</u>
Security Fees (Greater of below) –	
Total Tonnage Received	8,883.28
Rate per ton	<u>\$ 1.00</u>
Total	\$ 8,883.28
Total Tip Fees Billed	\$218,856.80
Security Fee Percentage	<u>5.00%</u>
	<u>\$ 10,942.84</u>

Our checks in payment of the above fees have been remitted to the above address for the Commission. Should you have any questions or need additional information, please let me know.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mark C. Mathys", with a long horizontal line extending to the right.

Mark C. Mathys  
Vice President of Finance & Corporate Controller

## SECOND AMENDMENT TO SANITARY LANDFILL OPERATION AGREEMENT

THIS SECOND AMENDMENT TO SANITARY LANDFILL OPERATION AGREEMENT (this "Second Amendment") is entered into as of the \_\_\_\_ day of ~~September~~November, 2019, by and between the **Loudon County Solid Waste Disposal Commission** ("Commission"), a public entity created by an Intergovernmental Agreement among the City of Lenoir City, the City of Loudon and Loudon County, Tennessee dated March 1, 1993, and **Santek Environmental, Inc.**LLC ("Contractor"), a Tennessee ~~corporation~~limited liability company (formerly Santek Environmental, Inc.) with its principal place of business at 650 25th Street N.W., Cleveland, Tennessee 37311.

### RECITALS

A. The parties have previously entered into a certain Sanitary Landfill Operation Agreement dated as of July 1, 2007, as amended by that certain First Amendment to Sanitary Operation Agreement dated as of March 1, 2015 (collectively, the "Agreement"), which concerns the operation of the Commission's Subtitle D sanitary landfill known as the Matlock Bend Sanitary Landfill located on Highway 72 in Loudon, Tennessee (the "Landfill").

B. The parties desire to modify and amend the terms of the Agreement pursuant to the following provisions.

NOW, THEREFORE, based upon the mutual promises of the parties and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. The Agreement is amended by adding Exhibit B and Exhibit C to this Second Amendment as Exhibit B and Exhibit C, respectively, to the Agreement, and Section 3.1 of the Agreement is amended by adding the following provision to the end of ~~this~~the Section:

In addition to the foregoing, Contractor agrees to submit to TDEC an application for a major permit modification to the Landfill Permit (the "Major Permit Modification"), and the Commission agrees to timely support and cooperate with the Contractor's efforts to obtain TDEC approval for the Major Permit Modification. The Major Permit Modification ~~shall~~must include the following permit modifications:

- (a) The permitted airspace will include a lateral expansion of approximately 26.6 acres, which brings the revised total footprint of the permitted landfill area to approximately 67.2 acres. However, Contractor shall only be authorized to fill the 53 acre portion of the Landfill shown in Exhibit B during the term of the Agreement (the "Amended Footprint"). The remaining permitted airspace of

approximately 14.2 acres will not be constructed for waste disposal during the term of the Agreement (the "Unconstructed Footprint").

- (b) The maximum permitted elevation will be shown as 1,125 ft. msl.
- (c) A cell construction and grading plan ~~will be developed that is~~ substantially consistent with the plan prepared by the Contractor and shown in Exhibit B attached to this Agreement, which achieves a maximum constructed elevation of 1,093 ft. msl. At no time during the term of this Agreement shall the constructed landfill grades exceed elevation of 1,093 ft. msl, unless authorized in writing by the Commission.
- (d) A phased Closure plan and implementation timeline will be developed by Contractor and approved by the Commission before submittal to TDEC as part of the Major Permit Modification; provided, that the Commission shall promptly review and approve the phased Closure plan within thirty (30) days of receipt from Contractor. TDEC's approval of the phased Closure plan will be considered a requirement of the Major Permit Modification during the term of this Agreement and will be implemented prior to final Closure of the Landfill. The phased Closure plan submitted by Contractor to TDEC for approval will be substantially consistent with the plan prepared by the Contractor and shown in Exhibit D attached to this Agreement; ~~(the attached phased Closure plan or the later developed plan pursuant to this section, whichever is submitted to TDEC, is referred to hereinafter as the "Phased Closure Plan").~~

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~~Contractor shall not be required to pursue such Major Permit Modification if it does not include the above modifications to the Landfill Permit.~~

Commission shall cooperate with and support Contractor's efforts to obtain the Major Permit Modification as long as TDEC materially incorporates the foregoing modification items in subsection (a)-(d) above. Contractor shall withdraw the application for the Major Permit Modification and discontinue pursuit of such modification if TDEC does not agree to materially incorporate the above modifications in the Major Permit Modification, unless both the Contractor and the Commission mutually agree in writing to waive any of the foregoing modifications or portions thereof.

- 2. Section 3.5 of the Agreement is amended herein by deleting the entirety of clauses (a) and (b) and substituting the following clause (a):

### **3.5 Agreement Period.**

- (a) This Agreement shall be effective upon execution by the parties hereto. The Contractor shall commence the Work on or before the Commencement Date, and this Agreement shall be for a term ending on June 30, 2027; provided, that upon the issuance of the Major Permit Modification by TDEC, the term of this Agreement is automatically



extended for an additional period ending on the date that all permitted waste disposal airspace contained within the Amended Footprint of the Landfill shown in Exhibit B reaches full permitted waste capacity; provided further, that in no event shall the extended term of this Agreement go beyond December 31, 2038, unless mutually agreed upon in writing by the Commission and Contractor.

Existing clause (c) shall remain as written in Section 3.5 but is re-designated to be referenced as clause (b).

3. The Agreement is hereby amended by attaching Exhibit ~~C~~ and Exhibit E to this Second Amendment as Exhibit D and Exhibit E respectively, to the Agreement, and Section 5.6 of the Agreement is amended by inserting a new sentence to subsection (a) immediately after the existing first sentence as follows:

Commission shall take any and all actions necessary to provide Contractor access to and the right to use soils from the real property adjacent to the Landfill (the "Adjacent Property") and more particularly identified on Exhibit ~~C~~ to this Second Amendment D. The soils from the Adjacent Property will be provided by the Commission to the Contractor without charge or other cost or assessment. However, soils from the Adjacent Property shall be used only for cover and Landfill operations by the Contractor at the Landfill. Prior to obtaining any soils from any portion of the Adjacent Property, the Contractor shall submit a grading plan to show the location and sequence of proposed excavation and also submit an Erosion and Sediment Control (the "ES&C") Plan for this area. The Contractor shall submit the proposed final grading topography, the ES&C Plan, and the interim and final vegetation plan to the Commission and TDEC for their; (a) the Commission for its written approval, which approval shall not be unreasonably withheld or untimely given, and (b) to the extent TDEC is willing to provide approval, TDEC for its written approval, before any grading and excavation commences on the Adjacent Property. The Contractor shall be responsible for obtaining all permits and for all costs related to operation and stabilization of the Adjacent Property.

Section 5.7 of the Agreement is amended herein by deleting the entirety of Section 5.7 and substituting in lieu thereof the following

- (a) The Contractor shall maintain and keep free of litter, runoff, dirt, mud, debris, and other foreign material all areas within the Landfill and on all Access Roads thereto within one-quarter mile of the gate to the Landfill. Contractor shall be solely responsible for maintaining the Landfill and all Access Roads thereto within one-quarter mile of the gate to the Landfill thereto in a clean, vector-free, and sanitary condition. Contractor shall further be solely responsible for compliance with all TDEC Rules and Regulations regarding controlling litter, runoff, debris, and other foreign material within the Landfill and on all Access Roads thereto within one-

quarter mile of the gate to the Landfill. The Contractor shall furnish, maintain, and use dust control equipment.

- (b) In addition to the foregoing efforts to eliminate litter, runoff, debris, and other foreign material from the Landfill roads and Access Roads thereto within one-quarter mile of the gate to the Landfill and to reduce the generation of dust in the operation of the Landfill, Contractor shall construct and implement, at its sole expense, a pressurized wheel wash system that is approved by TDEC and which meets all applicable TDEC regulations on or before the end of 2020-. Such wheel wash system shall be substantially similar in form, quality, and performance specifications to the engineered wheel wash system depicted on Exhibit D to this Second Amendment-E. Contractor shall make reasonable efforts to ensure that all traffic existing the Landfill fully utilizes the wheel wash system before accessing any Landfill Access Roads. Contractor shall visually inspect the landfill, the soil borrow area, and Access Road monthly, and verify, by brief monthly written reports submitted to the Commission, satisfactory maintenance of environmental conditions as specified.

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5. The Agreement is hereby amended by attaching Exhibit F to this Second Amendment as Exhibit F to the Agreement. Section 8.2 of the Agreement is amended herein by deleting the entirety of Section 8.2 of the Agreement and substituting in lieu thereof the following:

## **8.2 Closure/Post-Closure Care of Existing Landfill**

- (a) During the term of this Agreement, and provided, that the Major Permit Modification is issued by TDEC, the Contractor shall be responsible, at its sole expense, for compliance with the ~~phased~~ Phased Closure plan required by TDEC in the Major Permit Modification. As part of the phased ~~Unless otherwise agreed to in writing by contractor and the Commission, the Phased Closure plan required by TDEC in the Major Permit Modification, Plan shall obligate~~ Contractor ~~shall close a portion of~~ cells identified as Module(s) C, D, and G within one hundred eighty (180) days after receiving the TDEC certification letter for the new cell construction of Module 2. Module(s) A, F, and portions of Module E shall be closed within one hundred eighty (180) days after ~~the commencement of~~ receiving the TDEC certification letter for the new cell construction of Module 4. Module(s) B, portions of Module E, and portions of Modules 1 and 2 shall be closed within one hundred eighty (180) days after ~~receiving the commencement of~~ TDEC certification letter for the new cell construction of Module 5. Module(s) H, and portions of Modules 3 and 4 shall be closed within one hundred eighty (180) days after ~~the commencement of~~ receiving the TDEC certification letter for the new cell construction of Module 6. Assuming proper closure of all cells in the Landfill filled prior to the Commencement Date, the Contractor shall

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also be responsible, at its sole expense, for compliance with Post-Closure Care for all closed portions of the Landfill and the Closed Landfill during the term of this Agreement.

(b) The Contractor shall be responsible for completing, at its sole expense, final Closure of all portions of the Amended Footprint of the Landfill shown in Exhibit B within ~~one~~two hundred ~~eighty (180)~~seventy (270) days following the end of the term of this Agreement due to the occurrence of the natural expiration of the operational life of the Amended Footprint of the Landfill (i.e., utilization of all permitted airspace) or December 31, 2038, whichever occurs first—provided, that in the event that the Commission shall give Contractor at least two (2) years written notice, in writing, that the Commission plans to continue operation of the Landfill after such occurrence and develop the Unconstructed Footprint, the Contractor shall not be obligated to perform Closure on a portion of the Amended Footprint adjacent to the Unconstructed Footprint, which is approximately 10.7 acres more or less, as more particularly shown on Exhibit F to this Agreement.

(c) During the term of this Agreement, the Contractor shall be responsible, at its sole expense, for compliance with Post-Closure Care for the Phase I portion of the Landfill and all portions of the Landfill closed during the term of this Agreement pursuant to the TDEC-approved ~~phased~~Phased Closure ~~plan~~Plan required by the Major Permit Modification. After the term of this Agreement, the Commission shall assume any and all remaining responsibility for Post-Closure Care of the Landfill. Notwithstanding the foregoing, except as may be provided by Subsection 12.3(a), in no event shall Contractor be responsible for the investigation and/or remediation under any federal, state or local law, including without limitation the federal and state "superfund," hazardous waste, air pollution or water pollution laws.  
(e)

6. Section 8.3 of the Agreement is amended herein by deleting the entirety of Section 8.3 of the Agreement and substituting in lieu thereof the following:

**8.3 Financial Assurances.** The Commission acknowledges that the financial assurance obligations under the Solid Waste Laws for Closure and Post-Closure Care of the Landfill are the responsibility of the Commission, and shall remain, in compliance with the state requirements relating to closure and Post-Closure Care security. Notwithstanding the Contractor's obligations under Section 8.2 of this Agreement, the Commission shall continue to meet its annual financial assurance obligations with the State during the term of this Agreement. ~~However, pursuant to TDEC Solid Waste Management Rules 0400-11-01-.03(2) and (3), the Commission shall not have any financial assurance obligations to TDEC relative to the 14.2 acres of the Unconstructed~~

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~~Footprint during the term of the Agreement. In accordance with TDEC regulations, financial assurance obligations for the Unconstructed Footprint shall not commence until the Commission notifies TDEC in writing that a new cell for solid waste disposal located therein is constructed and ready to accept waste.~~

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In consideration of such Commission obligations, the Contractor will provide the Commission directly with financial assurance for the performance by the Contractor of its final Closure obligations under Subsection 8.2(b) hereinabove (the "Closure Assurance") ~~in a manner and form approved by the Commission.~~ Such Closure Assurance amount shall be determined by utilizing the TDEC approved closure costs (excluding Post-Closure Care costs). ~~Contractor shall~~Contractor shall be entitled to select in its sole discretion the methods and/or instruments of financial assurance to be provided to the Commission to satisfy such financial assurance obligations, and Contractor may from time to time change and/or substitute such methods and/or instruments; provided, that the Contractor notifies the Commission in writing 90 days prior to a change in the financial assurance method and/or instrument, for the Commission to review. The Commission shall promptly review the financial assurance changes within 60 days of receipt from Contractor. (The form of any financial assurance instrument provided from time to time by the Contractor to the Commission pursuant to this section shall be reasonably acceptable to the TDEC. Notwithstanding the foregoing, the Commission agrees that the

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~~Contractor shall~~may meet its financial assurance requirements under this provision by providing the Commission with a performance bond, at its sole expense, from an insurance company authorized to transact business in the State of Tennessee, ~~and~~ approved by TDEC, ~~and which maintains a bond rating of at least AA.~~ The performance bond provided by Contractor will be issued in lieu of the County's pledge of its share of State taxes to TDEC and, to the extent acceptable to TDEC, the Commission will be the named primary beneficiary of such performance bond, along with the State of Tennessee named as secondary beneficiary, in the event that the Contractor defaults on its obligation to complete all required Closure of the Landfill. This performance bond shall be issued by an authorized insurance company in compliance with TDEC Solid Waste Management Rule 0400-11-01-.03. The performance bond shall be renewed annually, and in an amount equal to the TDEC approved Closure costs (excluding Post-Closure Care costs) provided, that Contractor may renew such performance bond more frequently than annually to reflect a reduction in such Closure costs as a result of any phased Closure activities performed by Contractor. In this case, the Contractor's ongoing Closure financial assurance obligation would be to maintain such performance bond in the amount of the TDEC approved Closure cost (excluding Post-Closure Care

costs) for the actual number of acres remaining in the Amended Footprint of the Landfill to be closed. After the Contractor has performed all of its final Closure obligations for the Landfill under this Agreement, as verified in writing by both the Commission and TDEC, Contractor may immediately cancel or terminate any and all bonds, letters of credit or other similar instruments provided to the Commission by Contractor.

Notwithstanding the foregoing, Contractor may from time to time request in writing permission from the Commission to substitute the methods and/or instruments of financial assurance; provided that such methods and/or instruments shall not be altered or modified by Contractor without the Commission's written permission. The Commission shall respond in writing to any request from Contractor to substitute the methods and/or instruments of financial assurance within 60 days of receipt from Contractor. The form of any financial assurance instrument provided by Contractor to the Commission must be acceptable to and approved in writing by the TDEC.

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7. Section 10.6 of the Agreement is amended herein by deleting the entirety of this Section and substituting in lieu thereof the following:

**10.6 Host Fees.** On and after the first day of the month following the execution of this Second Amendment throughout the term of the Agreement, the Contractor shall pay the Commission a per ton host fee (the "Host Fee") for all Solid Waste disposed of at the Landfill in a fixed-percentage amount equal to five and one-half percent (5.5%) of the tipping fees received by Contractor, provided, that the aggregate amount of each monthly payment to the Commission for Host Fees shall not be less than \$10,560.00. Host Fees shall be paid to the Commission on or before the 20<sup>th</sup> day of the following month for which they are due. Notwithstanding the foregoing, the Contractor shall not pay a Host Fee for waste disposed of at the Landfill pursuant to the Commission's Reserved Rights unless specifically provided for by a subsequent written agreement between the Commission and Contractor.

8. Except as amended herein, all other terms, covenants and conditions of the Agreement shall remain in full force and effect and are hereby reaffirmed by the parties.

IN WITNESS WHEREOF, the parties have caused this Amendment to be executed as of the date first written above.

**LOUDON COUNTY SOLID WASTE  
DISPOSAL COMMISSION**

By: \_\_\_\_\_  
Steve M. Field, Chair

**SANTEK ENVIRONMENTAL, INC.**

By: \_\_\_\_\_  
Joseph T. Watts, President

**EXHIBIT B**




**[Attach Contractor's cell construction and grading plan]**



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LEGEND

-  MAJOR PERMIT MODIFICATION FOOTPRINT ~ 67.2 ACRES
-  AMENDED FOOTPRINT AREA ~ 53 ACRES
-  UNCONSTRUCTED FOOTPRINT ~ 14.2 ACRES

MAJOR PERMIT MODIFICATION FOOTPRINT		
MATLOCK BEND LANDFILL LOUDON COUNTY, TENNESSEE		
DRAWN BY: JW	SCALE: NTS	DATE: 9/6/19
CHECKED BY: RV	APPROVED BY: RV	



650 25TH STREET NW  
SUITE 100  
CLEVELAND,  
TENNESSEE  
(423) 303-7101

200-1914.1  
file dwg. no.

**B**  
EXHIBIT

EXHIBIT B revised  
job no.

**EXHIBIT C**

**[Attach Contractor's Phased Closure Plan]**

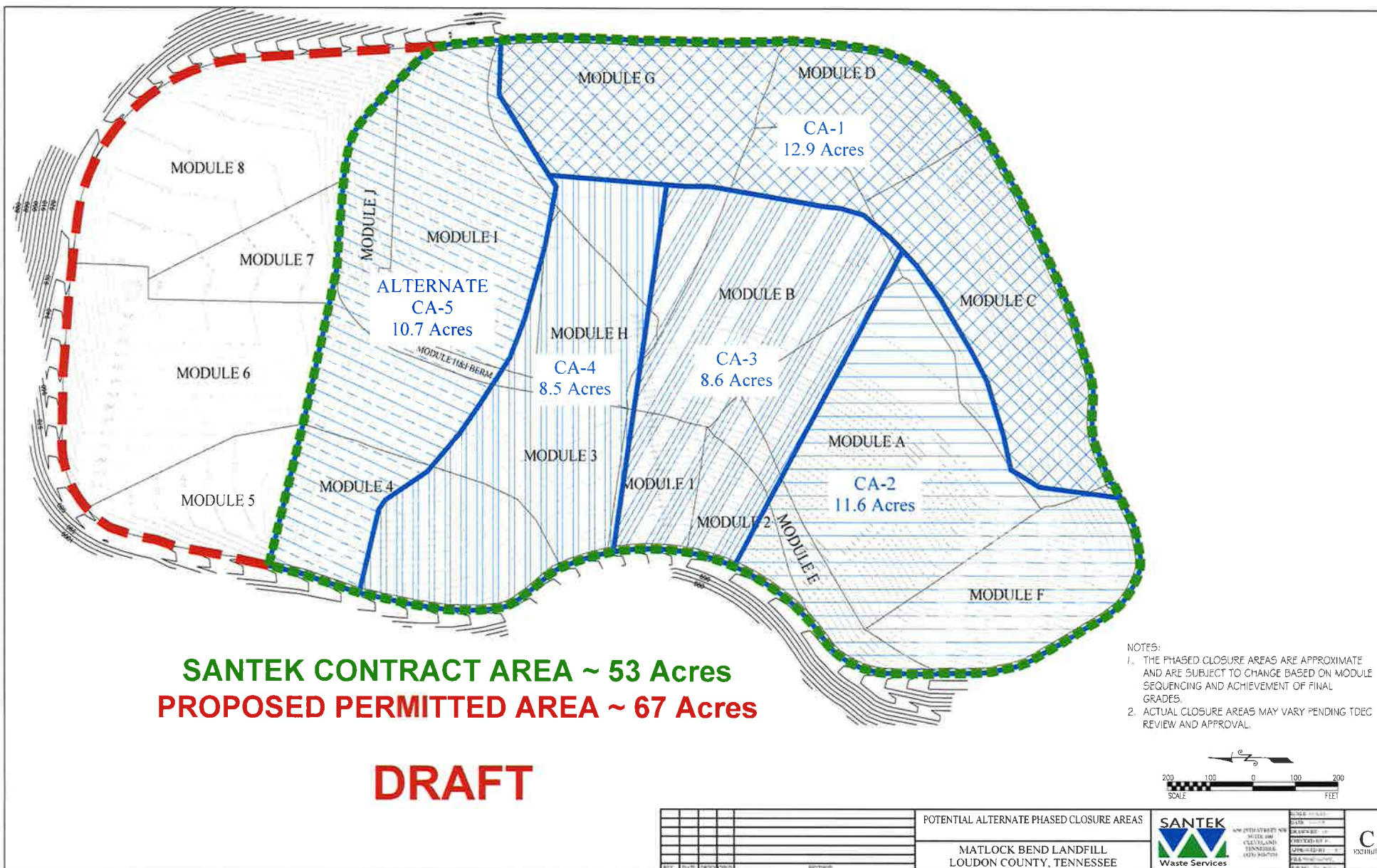
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C  
EXHIBIT®



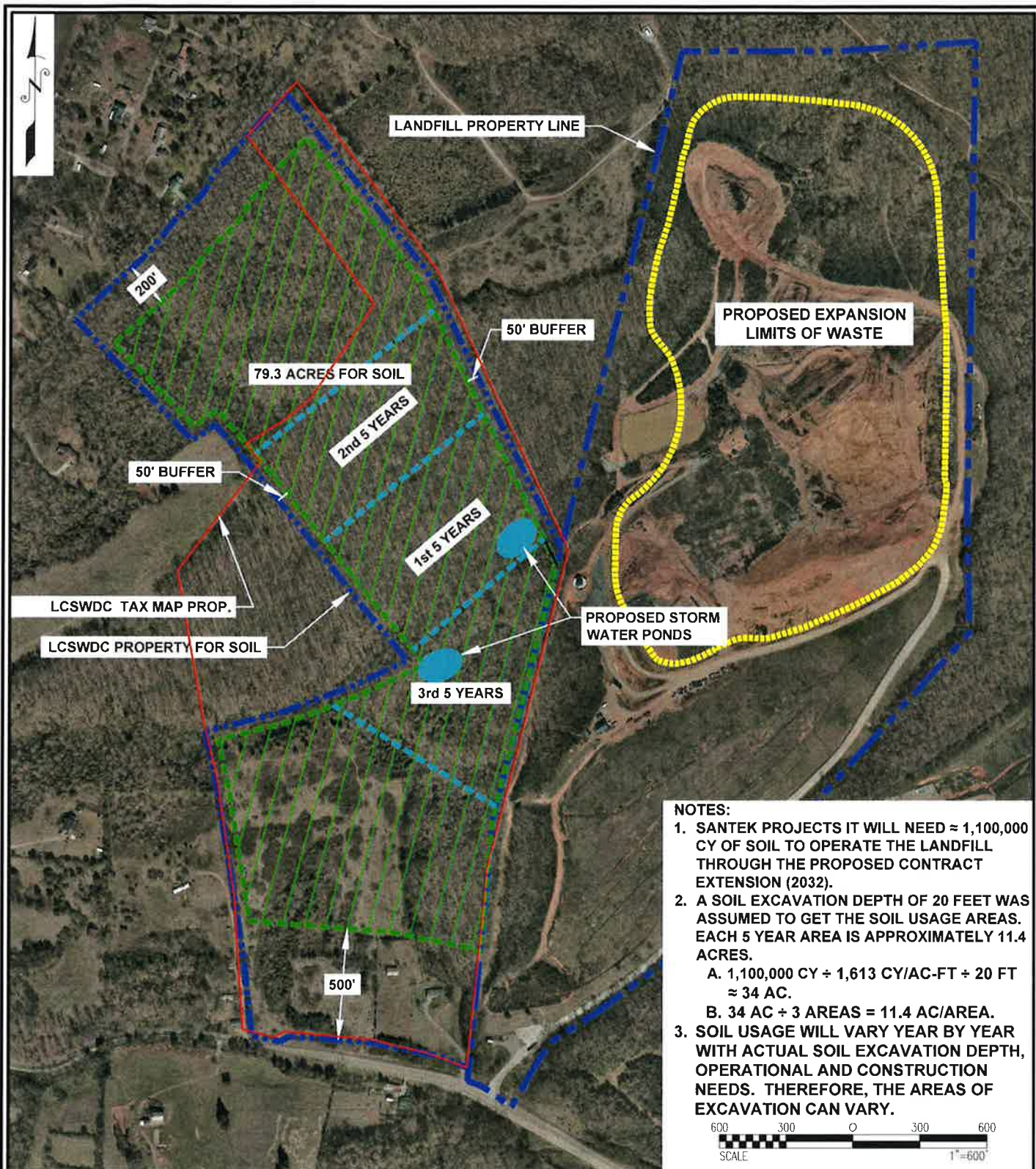


**EXHIBIT D**

**[Description of Commission Soil Property]**

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LCSWDC SOIL PROPERTY

MATLOCK BEND LANDFILL  
LOUDON COUNTY, TENNESSEE

DRAWN BY: JW	SCALE: AS NOTED	DATE: 6/12/18
CHECKED BY: RV	APPROVED BY: RV	



650 25TH STREET NW  
SUITE 100  
CLEVELAND,  
TENNESSEE  
(423) 303-7101

**D**  
**EXHIBIT**



~~EXHIBIT D~~

EXHIBIT E

[Attach Contractor's phased Wheel Wash System Specs]

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FRUTIGER Company AG | Steuackstrasse 25 | D-54460 Wittlich

Ron E. Vail, P.E.,  
**Santek Waste Services, LLC**  
**650 25th Street N.W. Suite 100,**  
**Cleveland, TN 37311**  
**United States**

July 22<sup>nd</sup>, 2019

**Offer Nr. 20190611-TH**  
**Project: Loudon - Matlock Bend Wheel Wash**

Dear Ron,

Thank you, Paul and Justin for taking the time to meet with me on May 29<sup>th</sup>, 2019 and more recently with Trey Hansen at your Matlock Bend Facility in Loudon.

- Your seeking a solution to manage the site soiling "track out" and dirty water "walk off" at your landfill site.
- Trucks using the facility are on highway vehicles.
- Our estimate confirmed by you of the site conditions worst case could be:
  - # 5 amount on tires (scale 1=low to 10 = high)
  - # 2 stickiness on tires (scale 1=low to 5 = high)
  - 200 trucks per day - usual work day 10 hours

Frutiger Company is confident we can accomplish a cleaning goal improvement of 80% or more clean tires with heaviest soiling during your typical traffic loads with a One and a half tire rotation 20' platform MobyDick KitPlus 600C – 50P Wheelwashing system.

We are pleased to submit the following proposal for your review:

- MobyDick Model ConLine Kit Plus 600C – 50P (1 ½ tire revolution wash platform 20' long) with Inground 13,000 Gallon (50 Cubic Meter) water recycling tank with solids removal being achieved through the use of a scraper conveyor and an additional 5,000 Gallon (20 Cubic Meter) tank for Pump compartment / water supply.

With this proposal we have included detailed equipment descriptions with specifications, concept drawings and brochures.

We look forward to a successful partnership and are always available to answer your questions.

Thank you once again for the opportunity to provide you this proposal.

Sincerely,,  
FRUTIGER Company AG

**Tim Holmes B.A., M.B.A.**  
Sales Director, North America  
**MobyDick North America**  
Cell: 519-589-3377  
[tholmes@us.mobydick.com](mailto:tholmes@us.mobydick.com)

**c.c. Paul Marks, Trey Hansen**

**Attachments:**

- Brochure – ConLine KITPlus Brochure
- Brochure – ConLine Kit Option Brochure
- Layout: Wheel Washing System ConLine KitPlus 600C – 50 P

This offer is based on the general terms and conditions (GTC) of FRUTIGER Company AG which are available on the company website [www.mobydick.com/fileadmin/user\\_upload/shared/GTC.pdf](http://www.mobydick.com/fileadmin/user_upload/shared/GTC.pdf)



Y/Customer No.	-	O/Reference	Tim Holmes
Y/Inquiry	20190628	Delivery type	Truck
Y/Reference	Jon Peterson	Incoterms	DDU
Remark	MobyDick ConLine Kit Plus 600C – 50P & Kit Plus 400C – 50P		

Pos	Article No. / Designation	Qty.	Unit
1	<p>Article: <b>MDC-100-015</b> Wheel Washing System MobyDick Model: <b>ConLine KIT Plus 600 C-50P</b></p> <p>Hot-dip galvanized, water-carrying wash unit with splash protection walls on both sides.</p>	1	pce.
2	<p>Article: <b>MDCO-EXCW-400</b> / Opt.-Code: <b>[-EXCW-]</b> Increased Width Model: ConLine KIT Plus</p> <p>Sidewall offset to 110 inch clear width to reduce risk of damage.</p>	1	pce.
3	<p>Article: <b>MDCO-DOSY-0001</b> / Opt.-Code: <b>[-DOSY-]</b> Flocculent Dosing System (MobyDos Compact) Model: ConLine KIT Flex and ConLine KIT Plus</p> <p>Compact dosing system for the automatic addition of flocculent for effective and rapid treatment of the dirt-water.</p>	1	pce.
4	<p>Article: <b>MDCO-SIWA-600</b> / Opt.-Code: <b>[-SIWA-]</b> Hot dip galvanised side walls Model: ConLine KIT Plus</p> <p>Splash protection side walls and double nozzle bars on both sides made out of hot-dip galvanised steel.</p>	1	pce.
5	<p>Article: <b>MDCO-RAIL-600C</b> / Opt.-Code: <b>[-RAIL-]</b> Safety Railing Model: ConLine KIT Plus</p> <p>Galvanised safety railing for the recycling tank(s).</p>	1	pce.
6	<p>Article: <b>MDCO-TANK-0001</b> / Opt.-Code: <b>[-TANK-]</b> Separate Water Tank Model: ConLine KIT Flex und ConLine KIT Plus</p> <p>Separate water tank to regulate the water level in case of an absent water supply.</p>	1	pce.

Your MobyDick Sales Engineer  
 Name: Tim Holmes  
 Phone: (519) 589-3377  
 E-mail: [tholmes@us.mobydick.com](mailto:tholmes@us.mobydick.com)



#### Options

- |   |   |           |
|---|---|-----------|
| 6 | Consulting/Supervision of equipment install, start up and training (1 trip 3 days). Installation and Start-up are quoted as one trip to the site, including labor, travel time, and expenses. Add'l trips due to reasons beyond our control to be charged to the customer, including labor, travel time & expenses. | 1    Opt. |
|---|---|-----------|

#### Construction services

- All groundwork, such as excavation, reinforcing the substrate and underground levelling and filling work.
- Laying electrical cables and water lines to the system.
- Unloading and placing the system with a suitable device
- Connection of the main power connection to the control cabinet by an electrician.
- Secure the recycling tank against unintentional falling in if no MobyDick safety railing is ordered.
- Earthing, equipotential bonding and lightning protection of the system.
- Necessary tools and fresh water filling for commissioning the system.
- Working and deliveries that go beyond the scope of our offer, unless they have been calculated specially based on cost or offered at a flat rate price.
- Additional costs of a technical or construction-based nature due to local ordinances, as long as they are not included in the specifications.

**IMPORTANT:** Providing the above services is the basic requirement for a successful installation of the MobyDick Wheel Washing System. FRUTIGER reserves the right to invoice any waiting times and/or additional journeys separately at cost due to the lack of services provided by the customer.

Your MobyDick Sales Engineer

Name: Tom Holmes  
Phone: (519) 549-3377  
Email: [tholmes@us.mobydick.com](mailto:tholmes@us.mobydick.com)



### Conditions

Price	<ul style="list-style-type: none"> <li>• Net</li> </ul>
Payment conditions upon purchase	<ul style="list-style-type: none"> <li>• 40% Downpayment with order confirmation.</li> <li>• 50% on system delivery</li> <li>• 10% net 30 days after system start up</li> <li>• <b>Optional Lease to Own available</b></li> </ul>
Retention of title	<ul style="list-style-type: none"> <li>• The goods remain the property of FRUTIGER Company AG until payment has been made in full.</li> </ul>
Delivery time EXW (Ex Works)	<ul style="list-style-type: none"> <li>• Approx. 18 weeks from written order and clarification of all technical details. 22 weeks to Loudon, TN.</li> </ul>
Warranty upon purchase	<ul style="list-style-type: none"> <li>• 24 months or 100,000 wash cycles (whichever comes first) excluding parts that have to be replaced due to normal wear.</li> </ul>
Quality Management System	<ul style="list-style-type: none"> <li>• According ISO 9001:2016 standard.</li> </ul>
Offer validity	<ul style="list-style-type: none"> <li>• Two months from the date of this offer.</li> </ul>
Note	<ul style="list-style-type: none"> <li>• FRUTIGER reserves the right to make changes due to technical progress.</li> </ul>
Terms and conditions of business	<ul style="list-style-type: none"> <li>• This offer is based on the general terms and conditions (GTC) of FRUTIGER Company AG which are available on the company website (<a href="http://www.mobydick.com/fileadmin/user_upload/shared/GTC.pdf">www.mobydick.com/fileadmin/user_upload/shared/GTC.pdf</a>)</li> </ul>

### Wheel Washing System ConLine KIT

#### Technical description

Wash unit containing two hot-dip galvanised, water conducting 38 cm high wash elements (left/right), consisting of a large steel structure with fixed welded angle sections (90 x 90 mm and 10 mm wall thickness), rectangular steel tubes (120 x 120 mm and 5 mm wall thickness), and plates (3 mm). Middle section consisting of solid, dual-sided slanted hot-dip galvanized corrugated metal sheets. Longitudinal plates integrated into the wash elements for concentrated direction of the wash water in a laterally extruding hot-dip galvanized cross channel with integrated gradient. Floor nozzles integrated into the angle sections and the rectangular steel tubes. Splash walls on both sides made of robust construction with huge lateral fenders up to high wheel flanks. Two side nozzle beams on each side with quick-lock coupling. MobyPump wastewater pumps, control cabinet, and optical sensor for start-up.

Recycling tank package consisting of a large steel structure with profile frame (5 mm) and plate including edge expansion (38 cm) to provide a finish with the ground level. Surface treatment (chemical cleaning, grounding for 60 my, top coat 60 my Ral 5017, traffic blue). Flow-optimised positioning of overflow weir and wash plate. Pump chamber equipped with pump brackets (painted) and access ladder (galvanised) and automatic fill level control and outlet cover for easy emptying of the tank. Galvanized multi-part safety guard rail (optional for KIT Flex) for simple assembly in the square frame section of the recycling tank. The tank construction also allows it to sustain all the forces generated by a passing loaded lorry when it is in an empty state.

Your MobyDick Sales Engineer  
 Name: Tim Holmes  
 Phone: (530) 582-3377  
 Email: [tholmes@us.mobydick.com](mailto:tholmes@us.mobydick.com)



### Scope of delivery:

Article: **MDC-100-015**

Model: ConLine KIT Plus 600 C-50P

- 1 Central wash unit 6 meters with nozzle configuration
- 1 Double side spray bar per side
- 1 Control cabinet
- 1 Automatic starting optical sensor
- 3 MobyPump washing pumps, 2'500 l/min each
- 1 Recycling tank package, 50 m³ parallel
- 1 Additional 20 M³ Recycling Tank
- 1 In ground recycling tank height extension
- 1 Safety railing for recycling tank
- 1 Scraper conveyor for recycling tank

### Specifications:

Length of wash unit	600	cm	19' 8"	ft.
Clear drive through width of the wash unit (lane)	320	cm	126	in
Maximum axle load	15	t	15	t
Height of splash protection side walls	136	cm	53.5	in
Nozzles (Core diameter min. 7 mm)	226	Pcs.	226	pcs.
Nozzle bars per side	2	Pcs.	2	pcs.
Recycling tank volume	50,0	m³	13,000	gal
Usable volume of operating water	30,0	m³	8,000	gal
Sedimentation area of the recycling tank	25,5	m²	275	sq ft
Discharge height of scraper conveyor above ground	105	cm	42	in
Maximum pump performance	7,5	m³/min	1981	gal/min
Connected electrical load of the entire system	17,1	kW	23	hp
Sound emission	< 75	dB	< 75	dB



KIT Plus 600 C-50P (Scraper Conveyor)

Your MobyDick Sales Engineer

Name: Sam Holmes  
 Phone: (519) 399-5177  
 Email: [tholmes@us.mobydick.com](mailto:tholmes@us.mobydick.com)



#### **EC Declaration of Conformity**

The MobyDick® tyre wash system described above conforms to the provisions of the following directives and norms, including their amendments.



- 2006/42/EC:2009, Machinery Directive
- 2004/18/EC:2004, EMC Directive
- EN 60204-1, Electrical equipment of machines
- EN 60439-1, Low-voltage switchgear assemblies

It also fulfils Directive 2014/35/EU:2014 in accordance with Annex I No. 1.5.1 MD 2006/42/EC with regard to its safety objectives.

#### **Your MobyDick Sales Engineer**

Name Tim Holmes  
Phone (519) 589-3377  
Email [tholmes@us.mobydick.com](mailto:tholmes@us.mobydick.com)



July 21, 2019

**Attn:** Ron Vail

**RE:** Project Santek MobyDick Wheel Wash Installation and Startup

Dear Mr. Vail,

MobyDick Total Solutions is pleased to submit its **budget** proposal to provide tools, equipment, labor and supervision for the above referenced project. Over the past 8 years we have installed over 50 different MobyDick wheel wash systems throughout the US and are the preferred manufacturer contractor.

Our scope of work includes the following items:

1. Inspect and inventory **Moby Dick Conline KIT Plus Series 600C-50CC/20B** to install location.
2. Demo, form and pour foundations, aprons, curbs and bollards per drawings(TBD) and incorporating existing infrastructure.
3. Assumes excavation and demo spoils disposed of onsite.
4. Assemble and commission wheel wash.
5. Install of all components including:
  - a. Wash elements
  - b. Sided walls
  - c. Pumps
  - d. Piping
  - e. Sensor and associated piping
  - f. Control panel
  - g. Install recycling tanks, safety railing, and water return channel as per drawings
6. Final connections electrical service.
7. Final plumbing connection from domestic make up water if chosen.
8. Start up and training of personnel operating wheel wash.

The following items are not included:

- All Electrical & Utilities to and from Moby Dick Conline KIT Plus Series 600C-50CC/20B unit will be by others.
- No soil borings or shoring of excavation is included.
- Site Survey and layout including identification of underground obstructions or soil conditions by others.
- Sales or use taxes, all permits.
- If Permits are required these costs will be actual amounts of fees and engineering charges.





Payment terms & conditions:

50% due prior to start of project

Balance due upon completion of installation and startup

Please contact me with any questions or concerns.

We thank you for the opportunity,

**Trey Hansen**

**MobyDick Total Solutions**

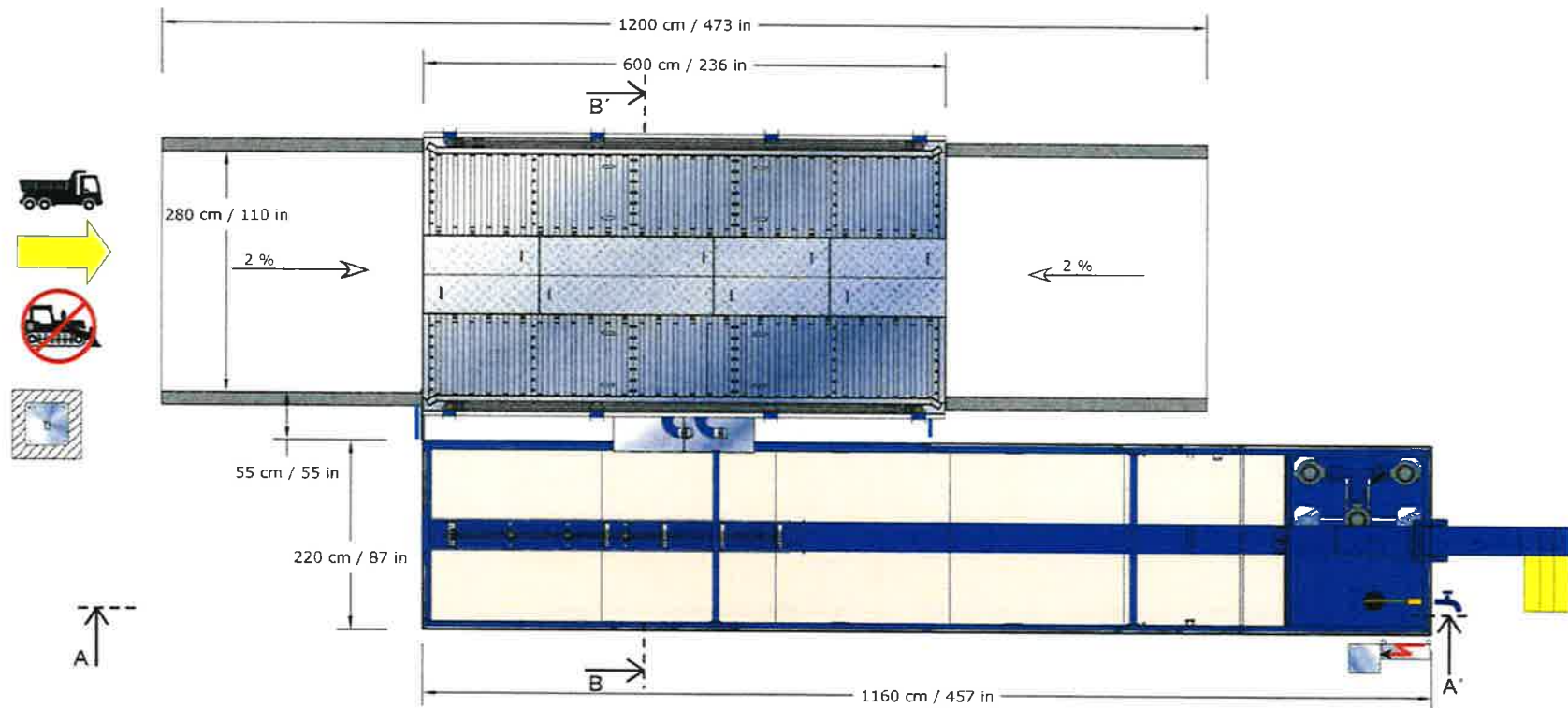
2348 South Dock

St. Palmetto, FL

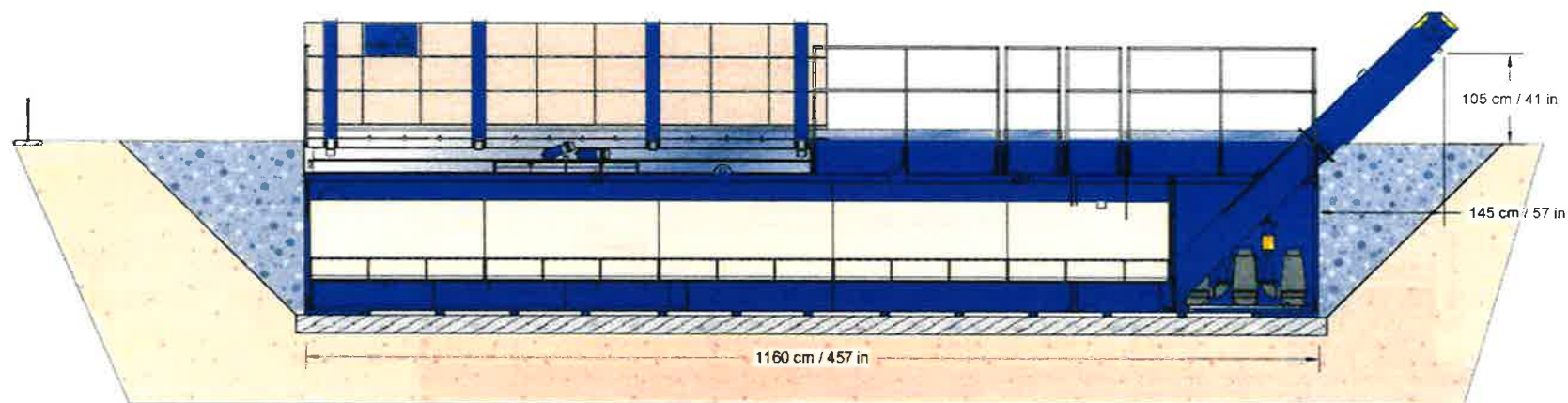
34221

Mobile : 219.707.9765

[tlhansen@us.mobydick.com](mailto:tlhansen@us.mobydick.com)



## SECTION A-A'



## SECTION B-B'

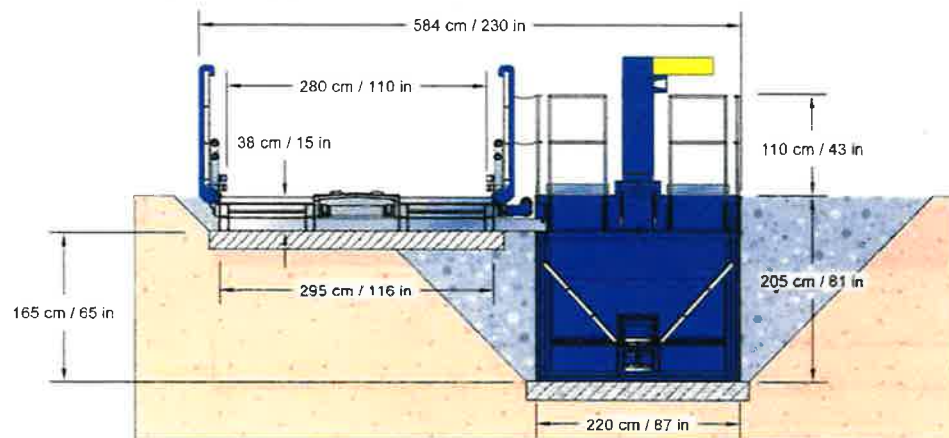
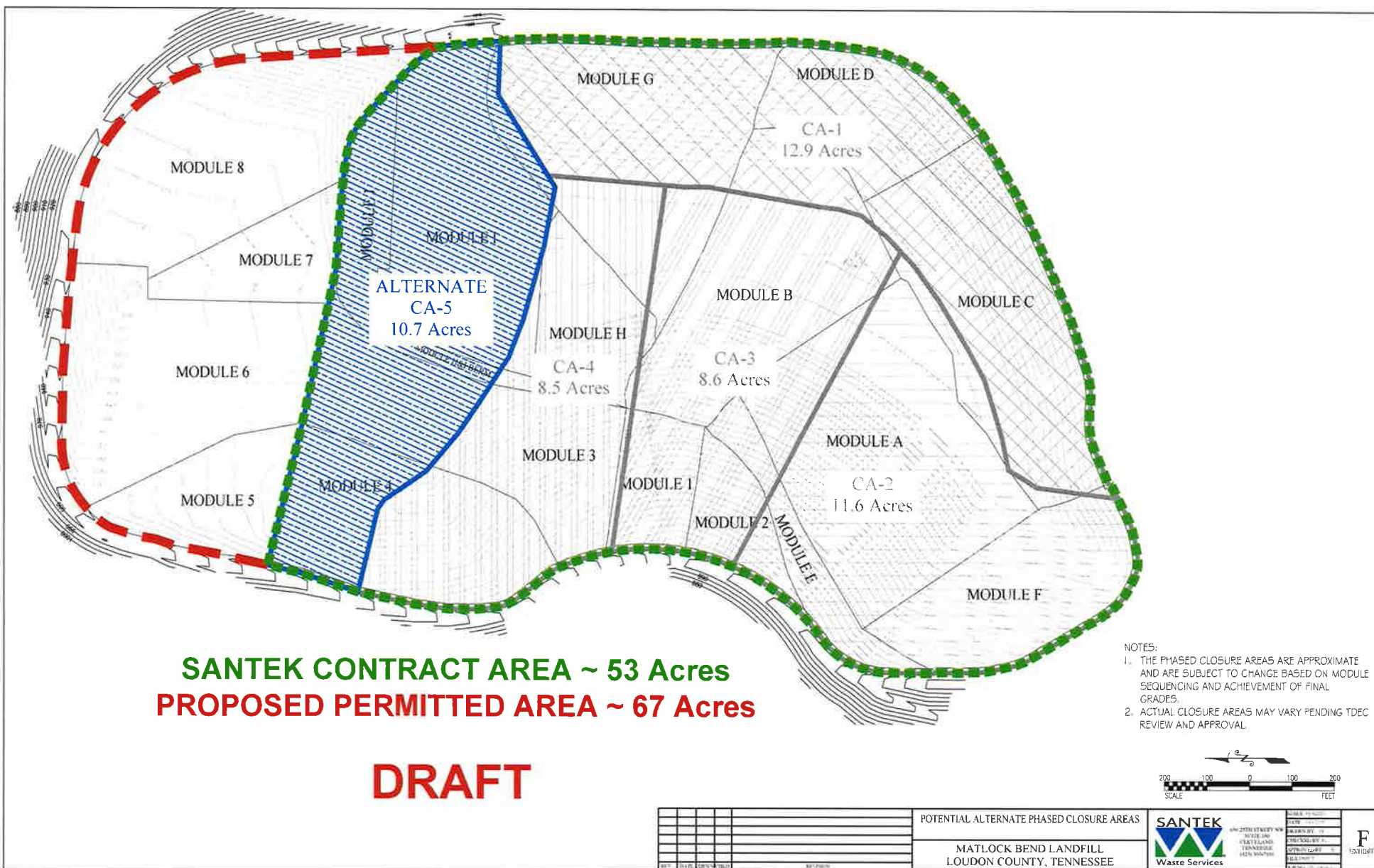


EXHIBIT F

[Description of Closure plan Excluded Amended Footprint]

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November 30, 2019

*e-mail copy only – hard copy by request*

Patrick Mulligan, P.G.  
Environmental Scientist  
**Tennessee Department of Environment & Conservation**  
**Division of Solid Waste Management**  
Knoxville Environmental Field Office  
3711 Middlebrook Pike  
Knoxville, TN 37921

**RE: Transmittal**  
**Inspection Report – November 14, 2019**  
**Final Cover/Cap Restoration & Related Improvements**  
**Former Poplar Springs Landfill (SNL 53-103-0162)**  
**Loudon County, Tennessee**

Dear Mr. Mulligan:

On behalf of Loudon County, Tennessee, the following presents the results of the **November 2019** post-construction site inspection conducted by Smith Gardner, Inc. (S+G) at the subject facility on June 6, 2019. As you are aware, this plan is focused primarily on inspection and maintenance of the restoration and improvement elements that were completed in 2018.

This report includes the following **attachments**:

- ❖ Inspection Form,
- ❖ Inspection Figure (field sketch); and,
- ❖ Selected site photographs obtained during this inspection.

This inspection was conducted by John M. Gardner, P.E. (S+G) who was accompanied by representatives from:

- ❖ Tennessee Department of Environment & Conservation, TDEC (Patrick Mulligan, P.G., Sarah Drummond, Ryan Miller)
- ❖ Loudon County (Susan Huskey, Matt Kleinschmidt, Chris Parks), and
- ❖ University of Tennessee (UT) Institute of Agriculture, Loudon County Extension (John J. Goddard)

Weather conditions were sunny and mild (about 50°F). The inspection began around 11:00 am and ended around 12:30 am.

## **GENERAL CONDITIONS**

In general, the site conditions during this inspection were as follows:

<b>SITE FEATURE(S)</b>	<b>CONDITION</b>
Gate, Access Roads	GOOD
Stormwater Management (Ditches, Channels, Culverts, Sediment Pond)	GOOD
Vegetative Cover	POOR TO GOOD
Leachate Seeps	POOR TO FAIR

## **ACTIVITIES SINCE LAST INSPECTION**

Following the last post-closure inspection in June 2019 soils from three areas of the site were sampled in September and tested by UT's soil laboratory and transmitted to Loudon County (John Goddard). Sampling, testing and reporting was also with guidance from Tom Samples, Ph.D., Turfgrass Science and Management Extension Specialist, Department of Plant Sciences, University of Tennessee, Institute of Agriculture. **A copy of the October 8, 2019 report is attached.** Dr. Samples' recommendations were as follows:

- application of 3 tons of lime per acre. This application is intended to bring the soil pH up to 6.5, which is the targeted and preferred level at which essential minerals in the soil are available for uptake by plants.
- broadcast a seed mixture of 25 lbs./Acre KY-31 tall fescue (with a high level of endophytes), 10 lbs./Acre 'Common' perennial ryegrass, 15 lbs./Acre orchard grass, 10 lbs./Acre annual ryegrass, 15 lbs./Acre wheat and 3 lbs./Acre inoculated ladino clover.
- An application of granular supplemental nitrogen + phosphorus is also recommended at, or not long after seeding. For example, 150 lbs. of 18-46-0 per acre will supply about 0.6 lbs. of nitrogen per 1,000 sq. ft. (about 27 lbs. of nitrogen per acre) and about 0.7 lb. phosphorus per 1,000 sq. ft. (about 30 lbs. of phosphorus per acre).

Based on Dr. Samples' recommendations, Loudon County employees applied lime, fertilizer and seed in late October 2019 to the south slope and open areas at the following rates (**see attached application rates, as provided by John Goddard**):

- lime at 3 tons per acre.
- A total of 78 lbs./Acre of seed mixture: 35 lbs./Acre KY-31 tall fescue, 15 lbs./Acre orchard grass, 10 lbs./Acre annual ryegrass, 15 lbs./Acre wheat and 3 lbs./Acre inoculated ladino clover.
- "DAP" fertilizer mixture: 150 lbs. of 18-46-0 per acre

## **CURRENT OBSERVATIONS**

The following summarizes the more significant site observations made during this inspection that require some form of action and/or continued monitoring and potential future action.

**Refer to the attached *inspection forms, plan sketch, and selected photographs* for additional information.**

Borrow Area – vegetation is progressing to fill in and will be monitored in the Spring 2020 for additional treatments (**Photos 1 through 3**).

Roadside Ditches – vegetation was in good condition.

Check Dams – sediment build-up and overtopping may require the dams to be breached once the downstream vegetation is stable.

Culverts – Culvert -1 outlet remained partially blocked by rip rap. This material should be cleared.

South Slope – vegetation is progressing to fill in and will be monitored in the Spring 2020 for additional treatments. A small area (about 25'x10') in the lower portion of the slope (**Photos 4 and 6**) was observed to be nearly bare, although reduced in size from the last inspection.

Lower South Channel – vegetation is progressing to fill in and will be monitored in the Spring 2020 for additional treatments (**Photo 5**).

Upper South Channel – Not inspected during this inspection. Inspect in Spring 2020.

Sedimentation Pond – was observed to have ponded water (**Photos 15 and 16**). All present observed the pond discharge point (**Photo 17**). S. Huskey informed the group that the Loudon County Board of Commissioners has approved the budget for S&ME to sample the pond discharge. C. Parks volunteered to accompany the S&ME samplers to show them where the sample should be taken. P. Mulligan stated that further action may be needed dependent on the surface water quality results.

Vertical Seep Drains/Leachate Seeps – Both new seeps and re-formed seeps were observed over most of the repaired slope areas which has impacted the vegetation resulting in large areas of the slopes bare of any vegetation.

- Former Seep 1A – location has revegetated and was dry (**Photos 7 and 8**) however a new seep has formed immediately north of 1A, was actively seeping, and has created an erosion rill (about 6 inches deep). There were four (4) small, dead pine trees on both sides of the new erosion feature. This erosion will need to be filled – rip rap was discussed as a possible repair for this area.
- Former Seep 1B - location was dry and revegetated (**Photo 9**).
- Former Seep 2 – location was bare and wet but not actively seeping (**Photos 10 and 11**). Additionally, the new seep above the Seep 2 bench (first observed in June 2019) was also bare and wet while not actively seeping during the inspection.
- Former Seeps 3A and 3B – locations were bare and wet and appeared to have moved downslope (north) of their former locations (**Photos 12 and 13**).

- Former Seep 4 - location was bare, eroded and actively flowing into the East Perimeter Channel at the time of the inspection, although not as much flow as observed during the June 2019 inspection (**Photos 14**).

## RECOMMENDATIONS

1. Vegetation – All site areas that received cover soils from the on-site borrow areas, including the Borrow Area should continue to be monitored and receive fertilizer, lime and mulch as needed to completely revegetate. Dr. Samples recommended testing the soil this coming spring (2020) to monitor the vegetation pH, phosphorus and potassium levels and if need be, apply 'Yukon' bermudagrass (a low-temperature and salt tolerant variety) seed at the rate of ½ lb. per 1,000 sq. ft. in specific full-sun areas still lacking adequate erosion control.

Areas with less than 70% coverage should be over-seeded following Dr. Samples' recommendations (following the soil sampling in Spring 2020) in terms of seed mix, fertilizer, lime, and mulch. This includes the Upper and Lower South Channels, slope areas, leachate seep areas, the Sedimentation Pond and ditches.

2. Check Dams should continue to be inspected and removed/breached if further signs of sediment build-up and overtopping are observed and downstream areas are adequately vegetated and stable.
3. Rip rap at the downstream end of Culvert -1 should be cleared so as to not block flow.
4. South Slope – The unstable slope in the upper portion of the Upper South Channel should be inspected and if needed, rip rap placed over a geotextile laid on the slope to stabilize the material from collapsing into the Upper South Channel and blocking flow.
5. Sedimentation Pond will require some minor regrading to eliminate ponding. Bare areas should be seeded, fertilized, limed, and mulched following the same procedures as other areas noted above.
6. Leachate Seeps should continue to be monitored, per the MIMP, for three consecutive periodic inspections and may require further action if these areas do not stabilize. Refer to the revegetation recommendations above.

## NEXT INSPECTION

In accordance with the approved MIMP, periodic inspections are planned semi-annually, or about every six months. In keeping with this plan, the next inspection is tentatively scheduled for **May 2020**, following the Spring 2020 testing and reapplication of nutrients and seed mentioned above.

S+G appreciates the opportunity to provide these services to Loudon County. Should you have any questions or require clarification, please call me at 919-801-5932 or by e-mail at [john@smithgardnerinc.com](mailto:john@smithgardnerinc.com).

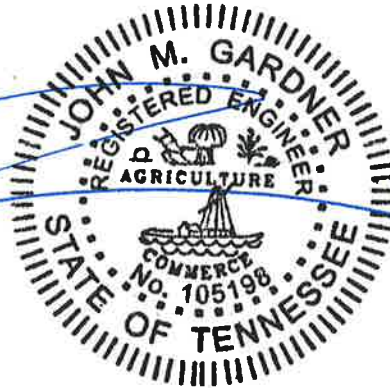
Patrick Mulligan, P.G.  
November 30, 2019  
Page 5

Cordially,  
**Smith Gardner, Inc.**

  
John M. Gardner, P.E.  
Sr. Project Manager

Encls.

Cc: Meeting Attendees



11/30/19



FORMER POPLAR SPRINGS LANDFILL

MONITORING, INSPECTION & MAINTENANCE PLAN

BIANNUAL POST-CONSTRUCTION INSPECTION FORM

INSPECTOR: J. GARDNER; S. HUSKEY; M. KLEINSHMIDT; C. PARKS; J. GODDARD;  
P. MULLIGAN; S. DRUMMOND; R. MILLER

DATE: 11/14/19

WEATHER: SUNNY; 50°F +/-

	CONDITION	ACTION TO BE TAKEN
<b>ACCESS</b>		
a) Gate	GOOD	NONE*
b) South Access Road	GOOD	NONE
c) North Access Road	GOOD	NONE
d) North Access Road Extension	GOOD	NONE
e) Road to Pond	GOOD	NONE
<b>STORMWATER MANAGEMENT</b>		
a) Roadside Ditching	GOOD	NONE
b) Check Dams	GOOD	NONE
c) Culvert-1	GOOD	SEE ①
d) Culvert-2	GOOD	SEE ②
e) Upper South Channel (inlets, outlets, rip rap)	DID NOT INSPECT	N/A
f) Lower South Channel (inlets, outlets, rip rap)	GOOD	NONE
g) South Slope Channel	GOOD	NONE
h) Sediment Pond (riser, spillway)	GOOD	NONE
<b>VEGETATIVE COVER</b>		
a) South Slope	GOOD	NONE-SEE ③
b) Roadside Ditches	GOOD	NONE
c) Landfill Slopes	POOR TO GOOD	SEE NOTE ④
d) East Perimeter Channel	DID NOT INSPECT	N/A
e) Sediment Pond	GOOD	SEE ⑤
LEACHATE SEEPAGE	FAIR TO POOR	SEE ⑥
<b>BORROW AREA</b>		
a) Vegetative Cover	GOOD	NONE

NOTES: ① CLEAR DOWNSTREAM OUTLET OF DEBRIS; ② MONITOR INLET FOR SEDIMENT; ③ SLOPE HAS INCREASING VEG. THROUGHOUT W/ ONE BARE AREA AT TOE; ④ VEG. ON SLOPES IS GOOD EXCEPT AT ATTACHMENTS: REPORT; DWGS; PICTURES

Copy sent to TDEC on \_\_\_\_\_

\*"NONE" MEANS NO IMMEDIATE ACTION - MONITORING OF VEG. AND SEEPS MUST CONTINUE.

ALL SEEP AREAS WHICH ARE BARE AND WET. SEE INSPECTION FIGURE. ⑤ WATER PONDING IN POND WITH BARE AREA WHERE THERE WAS PREVIOUS PONDING. ⑥ ALL AREAS BUT SEEP 1B ARE BARE; SEEPS 1A, 3A, AND 4 WERE ACTIVELY SEEPING @ TIME OF INSPECTION.





Mr. John Goddard  
Extension Agent III  
100 River Road, Ste. 12  
Loudon, TN 37774

October 8, 2019

Dear John,

Thank you again for the opportunity to visit Loudon County and the former Poplar Springs Landfill. I always enjoy working with you in Loudon county, and visiting with Susan and her fine co-workers.

As we discussed, I'm very happy that we decided to sample soils from three specific areas that presently lack strong vegetative cover.

Three soil samples were submitted and based on test results (Report Date 9/25):

1. #581151 Borrow Pit soil pH = 5.15, phosphorus = 11 lbs./A Low, and potassium = 78 lbs./A Low
2. #581153 Seep sample soil pH = 5.75, phosphorus = 7 lbs./A Low, and potassium = 1492 lbs./A Very High
3. #581152 Top Base sample soil pH = 4.97, phosphorus = 15 lbs./A Low, and potassium lbs./A = 156 Medium

Results of the initial soil sample conducted by Waypoint Analytical in Memphis via TN Farmer's Cooperative (Report Date 11/03/2018) showed:

Soil pH = 5.8, phosphorus = 48 lbs./A Medium, and potassium = 128 lbs./A Low

Since our UT Soil Testing Laboratory uses the Mehlich 1 soil mineral extractant, while Waypoint Analytical Laboratory uses the Mehlich 3 extractant, it is not surprising that the actual amounts of phosphorus and potassium reported vary between the two labs. Based on results of the Waypoint Analytical soil test results, the recommendation was to apply 1,500 lbs./A lime.

In my view, due to the results of the three most recent soil tests, I'd recommend the application of 3 tons of lime per acre. This application is intended to bring the soil pH up to 6.5, which is the targeted and preferred level at which essential minerals in the soil are available for uptake by plants.

Now that we are well within the recommended planting time for seeding cool-season perennial grasses and legumes, and that the soil is moist and lime is being applied, I'd broadcast a seed mixture of 25 lbs./A KY-31 tall fescue (with a high level of endophytes), 10 lbs./A 'Common' perennial ryegrass, 15 lbs./A orchardgrass, 10 lbs./A annual ryegrass, 15 lbs./A wheat and 3 lbs./A inoculated ladino clover.

An application of granular supplemental nitrogen + phosphorus is also recommended at, or not long after seeding. For example, 150 lbs. of 18-46-0 per acre will supply about 0.6 lbs. of nitrogen per 1,000 sq. ft. (about 27 lbs. of nitrogen per acre) and about 0.7 lb. phosphorus per 1,000 sq. ft. (about 30 lbs. of phosphorus per acre).

Let's plan on testing the soil this spring to monitor the vegetation and the pH, phosphorus and potassium levels. If need be, 'Yukon' bermudagrass (a low-temperature and salt tolerant variety) seed can be broadcast at the rate of ½ lb. per 1,000 sq. ft. in specific full-sun areas still lacking erosion control.

Sincerely,



Tom Samples  
Turfgrass Science and Management Extension Specialist

# SOIL TEST REPORT

SUSAN HUSKEY  
100 RIVER ROAD SUITE 110  
LOUDON TN 37774

County: Loudon

For questions, please contact the lab at:  
SoilLab@Tennessee.edu or  
(615) 832-5850

Mehlich 1 SOIL TEST RESULTS and RATINGS* (Pounds Per Acre)														
Lab Number	Report Date	Farm ID	Sample Number	pH		Phosphorus	Potassium	Calcium	Magnesium	Zinc	Iron	Manganese	Boron	Sodium
				Soil pH	Buffer Value	P LBS/ACRE	K LBS/ACRE	CA LBS/ACRE	Mg LBS/ACRE	Zn LBS/ACRE	Fe LBS/ACRE	Mn LBS/ACRE	B LBS/ACRE	Na LBS/ACRE
581151	09/25/2019		BORROW	5.15	7.55	11 L	78 L	569 S	102 S	1.3 S	58 S	29 S	0.4	17

Lab Number	Farm ID	Sample Number	Sulfur	Nitrogen		Carbon	C/N Ratio	Organic Matter	Soluble Salts	Particle Size Analysis - Hydrometer Method			
			LBS/ACRE	NO3-N ppm	Total N %	%	%	%	ppm	% Sand	% Silt	% Clay	Soil Texture

581151 BORROW

RECOMMENDATIONS-Fertilizer/Lime Applications and Rates									
Lab Number	Farm ID	Sample Number	Crop	Nitrogen (N)	Phosphate (P2O5)	Potash (K2O)	Application Rate	Limestone	Application Rate
581151		BORROW	Lawn, Cool Season	2 to 4*	1	1	pounds per 1,000 square feet	100	pounds per 1000 square feet

Sample Number: BORROW

For Cool Season Lawn Establishment: Fall Establishment is best. Apply 1 pound of actual nitrogen per 1,000 square feet at seeding or sprigging and again six weeks later. A slow release form of nitrogen may give the best results. 1 pound of actual nitrogen per 1,000 square feet may be applied as 3.3 pounds of a 27 to 33% nitrogen fertilizer or as 10 pounds of a 8 to 12% N fertilizer. Other N sources may be used , but adjust the rate of product accordingly. Apply P and K to soil test need once a year.

For Cool season lawn Nitrogen needs: [Choose one level to apply] \_\_LOW maintenance nitrogen application: Apply 1 pound of actual N per 1,000 square feet in March or April, and again in September or October. \_\_ MEDIUM maintenance nitrogen application: Apply 1 pound of actual N per 1,000 square feet in March, and again in September and October. \_\_ HIGH maintenance (for use with turf under irrigation) nitrogen application: Apply 0.5 pound of actual nitrogen per 1,000 square feet in March and April, and 1 pound of actual nitrogen per 1,000 square feet in September , October, and November. 1 pound of actual nitrogen can be applied as 3.3 pounds of a 27 to 33% nitrogen only fertilizer or as 10 pounds of a 8 to 12% nitrogen only. Other products may be used, be sure to adjust the rate of product applied depending on the percent N in the product accordingly. If possible use a 30% slow release nitrogen fertilizer.

Phosphorus is low, and would be recommended at rate given above. This can be done with 10 lbs. of an 8 to 12% P2O5 fertilizer or 2 pounds of 45% P2O5 fertilizer per 1,000 sq. ft. Other fertilizers may be used, just adjust the rate of product accordingly depending on the percent P2O5 in the fertilizer product. Apply once per year.

Potassium is low, and would be recommended at rate given above. This can be done with 2 lbs. of 50 to 60 % K2O fertilizer or 20 lbs. of a 3 to 6% K2O fertilizer per 1,000 sq. ft. Other fertilizers may be used, just adjust the rate of product accordingly depending on the percent K2O in the fertilizer product. Apply once per year.

For information on lawn selection, establishment and care, please contact your county extension agent.

# Example Report

With Explanations of How To Read the Report

Mehlich 1 SOIL TEST RESULTS and RATINGS* (Pounds Per Acre)														
Lab Number	Report Date	Farm ID	Sample Number	pH		Phosphorus	Potassium	Calcium	Magnesium	Zinc	Iron	Manganese	Boron	Sodium
				Soil pH	Buffer Value	P LBS/ACRE	K LBS/ACRE	CA LBS/ACRE	Mg LBS/ACRE	Zn LBS/ACRE	Fe LBS/ACRE	Mn LBS/ACRE	B LBS/ACRE	Na LBS/ACRE
900010	10/18/2017		10	6.41		36 H	114 M	3014 S	707 S	5.3 S	4 S	120 S	1.4	14
900011	10/18/2017		11	6.41		36 H	114 M	3014 S	707 S	5.3 S	4 S	120 S	1.4	14
900012	10/18/2017		12	6.41		36 H	114 M	3014 S	707 S	5.3 S	4 S	120 S	1.4	14

**Soil pH** tells the pH of your soil. **Buffer pH** tells us the resistance to pH change your soil has. Lime recommendations are based off 1) soil pH 2) plant's preferred pH and 3) buffer pH

The amount of **nutrients** in pounds per acre. Indices for Phosphorus(P) and Potassium (K) are Low (L), Medium (M), High (H), and Very High (V). Indices for secondary and micronutrients are Sufficient (S) and Deficient (D). Fertilizer recommendations are based off crop and soil nutrient index level.

Lab Number	Farm ID	Sample Number	Sulfur	Nitrogen		Carbon	C/N Ratio	Organic Matter	Soluble Salts	Particle Size Analysis - Hydrometer Method			
			LBS/ACRE	NO3-N ppm	Total N %	%	%	%	ppm	% Sand	% Silt	% Clay	Soil Texture
900010		10											
900011		11											
900012		12											

**Nitrate** is measured mostly for side dressing on foot tall corn plants. Nitrate is not routinely measured for other TN crops as generally rates for specific crops can be made annually.

**Organic Matter** is the percent by weight of soil organic matter present. Organic matter helps soil physical properties, water infiltration, and releases nutrients as it mineralizes.

(If additional test are requested, results will show here)

**Soluble Salts** may be measured if salt damage is suspected. The lower the soluble salt number the better.

**Particle Size Analysis** tells one the USDA percent of Sand, Silt, and Clay present. The Soil texture is the grouping name for which the percentages fall.

RECOMMENDATIONS-Fertilizer/Lime Applications and Rates									
Lab Number	Farm ID	Sample Number	Crop	Nitrogen (N)	Phosphate (P2O5)	Potash (K2O)	Application Rate	Limestone	Application Rate
900010		10	Alfalfa Hay & Pasture	0-15	0	190	pounds per acre	0	tons per acre
900011		11	Lawn, Cool Season	-	-	-	pounds per 1,000 square feet	0	pounds per 1000 square feet
900012		12	Beans, Snap or Lima	45	30	30	pounds per acre	0	tons per acre

**Nutrients to apply** are found under Nitrogen, Phosphate, and Potash. Fertilizers are sold with their percent N – P2O5 – K2O listed on the label. The text follow up will sometimes give suggestions of product rates. You may also use these percentages to calculate the correct rate of product.

**Application Rate** shows fertilizer or lime units per given area to be applied. This can be in pounds per acre, Tons per acre, pounds per hundred square feet, or other units.

Please be sure to always read the

**Text Follow Ups** below the fertilizer recommendations **or** on the following page. **Dashes** indicate that fertilizer suggestions and rates are in text only.



# SOIL TEST REPORT

SUSAN HUSKEY  
100 RIVER ROAD SUITE 110  
LOUDON TN 37774

County: Loudon

For questions, please contact the lab at:  
SoilLab@Tennessee.edu or  
(615) 832-5850

Mehlich 1 SOIL TEST RESULTS and RATINGS* (Pounds Per Acre)														
Lab Number	Report Date	Farm ID	Sample Number	pH		Phosphorus	Potassium	Calcium	Magnesium	Zinc	Iron	Manganese	Boron	Sodium
				Soil pH	Buffer Value	P LBS/ACRE	K LBS/ACRE	CA LBS/ACRE	Mg LBS/ACRE	Zn LBS/ACRE	Fe LBS/ACRE	Mn LBS/ACRE	B LBS/ACRE	Na LBS/ACRE
581153	09/25/2019		SEEP	5.75	7.78	7 L	1492 V	854 S	222 S	1.8 S	142 S	91 S	3.4	4798

Lab Number	Farm ID	Sample Number	Sulfur	Nitrogen		Carbon	C/N Ratio	Organic Matter	Soluble Salts	Particle Size Analysis - Hydrometer Method			
			LBS/ACRE	NO3-N ppm	Total N %	%	%	%	ppm	% Sand	% Silt	% Clay	Soil Texture
581153		SEEP											

RECOMMENDATIONS-Fertilizer/Lime Applications and Rates									
Lab Number	Farm ID	Sample Number	Crop	Nitrogen (N)	Phosphate (P2O5)	Potash (K2O)	Application Rate	Limestone	Application Rate
581153		SEEP	Lawn, Cool Season	2 to 4*	1	0	pounds per 1,000 square feet	80	pounds per 1000 square feet

Sample Number: SEEP

For Cool Season Lawn Establishment: Fall Establishment is best. Apply 1 pound of actual nitrogen per 1,000 square feet at seeding or sprigging and again six weeks later. A slow release form of nitrogen may give the best results. 1 pound of actual nitrogen per 1,000 square feet may be applied as 3.3 pounds of a 27 to 33% nitrogen fertilizer or as 10 pounds of a 8 to 12% N fertilizer. Other N sources may be used , but adjust the rate of product accordingly. Apply P and K to soil test need once a year.

For Cool season lawn Nitrogen needs: [Choose one level to apply] \_\_LOW maintenance nitrogen application: Apply 1 pound of actual N per 1,000 square feet in March or April, and again in September or October. \_\_ MEDIUM maintenance nitrogen application: Apply 1 pound of actual N per 1,000 square feet in March, and again in September and October. \_\_ HIGH maintenance (for use with turf under irrigation) nitrogen application: Apply 0.5 pound of actual nitrogen per 1,000 square feet in March and April, and 1 pound of actual nitrogen per 1,000 square feet in September , October, and November. 1 pound of actual nitrogen can be applied as 3.3 pounds of a 27 to 33% nitrogen only fertilizer or as 10 pounds of a 8 to 12% nitrogen only. Other products may be used, be sure to adjust the rate of product applied depending on the percent N in the product accordingly. If possible use a 30% slow release nitrogen fertilizer.

Phosphorus is low, and would be recommended at rate given above. This can be done with 10 lbs. of an 8 to 12% P2O5 fertilizer or 2 pounds of 45% P2O5 fertilizer per 1,000 sq. ft. Other fertilizers may be used, just adjust the rate of product accordingly depending on the percent P2O5 in the fertilizer product. Apply once per year.

Phosphorus is very high and none would be recommended.

For information on lawn selection, establishment and care, please contact your county extension agent.

# Example Report

With Explanations of How To Read the Report

Mehlich 1 SOIL TEST RESULTS and RATINGS* (Pounds Per Acre)														
Lab Number	Report Date	Farm ID	Sample Number	pH		Phosphorus	Potassium	Calcium	Magnesium	Zinc	Iron	Manganese	Boron	Sodium
				Soil pH	Buffer Value	P LBS/ACRE	K LBS/ACRE	CA LBS/ACRE	Mg LBS/ACRE	Zn LBS/ACRE	Fe LBS/ACRE	Mn LBS/ACRE	B LBS/ACRE	Na LBS/ACRE
900010	10/18/2017		10	6.41		36 H	114 M	3014 S	707 S	5.3 S	4 S	120 S	1.4	14
900011	10/18/2017		11	6.41		36 H	114 M	3014 S	707 S	5.3 S	4 S	120 S	1.4	14
900012	10/18/2017		12	6.41		36 H	114 M	3014 S	707 S	5.3 S	4 S	120 S	1.4	14

**Soil pH** tells the pH of your soil. **Buffer pH** tells us the resistance to pH change your soil has. Lime recommendations are based off 1) soil pH 2) plant's preferred pH and 3) buffer pH

The amount of **nutrients** in pounds per acre. Indices for Phosphorus(P) and Potassium (K) are Low (L), Medium (M), High (H), and Very High (V). Indices for secondary and micronutrients are Sufficient (S) and Deficient (D). Fertilizer recommendations are based off crop and soil nutrient index level.

Lab Number	Farm ID	Sample Number	Sulfur	Nitrogen		Carbon	C/N Ratio	Organic Matter	Soluble Salts	Particle Size Analysis - Hydrometer Method			
			LBS/ACRE	NO3-N ppm	Total N %	%	%	%	ppm	% Sand	% Silt	% Clay	Soil Texture
900010		10											
900011		11											
900012		12											

**Nitrate** is measured mostly for side dressing on foot tall corn plants. Nitrate is not routinely measured for other TN crops as generally rates for specific crops can be made annually.

**Organic Matter** is the percent by weight of soil organic matter present. Organic matter helps soil physical properties, water infiltration, and releases nutrients as it mineralizes.

**Soluble Salts** may be measured if salt damage is suspected. The lower the soluble salt number the better.

**Particle Size Analysis** tells one the USDA percent of Sand, Silt, and Clay present. The Soil texture is the grouping name for which the percentages fall.

RECOMMENDATIONS-Fertilizer/Lime Applications and Rates									
Lab Number	Farm ID	Sample Number	Crop	Nitrogen (N)	Phosphate (P2O5)	Potash (K2O)	Application Rate	Limestone	Application Rate
900010		10	Alfalfa Hay & Pasture	0-15	0	190	pounds per acre	0	tons per acre
900011		11	Lawn, Cool Season	-	-	-	pounds per 1,000 square feet	0	pounds per 1000 square feet
900012		12	Beans, Snap or Lima	45	30	30	pounds per acre	0	tons per acre

**Nutrients to apply** are found under Nitrogen, Phosphate, and Potash. Fertilizers are sold with their percent N – P2O5 – K2O listed on the label. The text follow up will sometimes give suggestions of product rates. You may also use these percentages to calculate the correct rate of product.

**Application Rate** shows fertilizer or lime units per given area to be applied. This can be in pounds per acre, Tons per acre, pounds per hundred square feet, or other units.

Please be sure to always read the

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# SOIL TEST REPORT

SUSAN HUSKEY  
100 RIVER ROAD SUITE 110  
LOUDON TN 37774

County: Loudon

For questions, please contact the lab at:  
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(615) 832-5850

Mehlich 1 SOIL TEST RESULTS and RATINGS* (Pounds Per Acre)														
Lab Number	Report Date	Farm ID	Sample Number	pH		Phosphorus	Potassium	Calcium	Magnesium	Zinc	Iron	Manganese	Boron	Sodium
				Soil pH	Buffer Value	P LBS/ACRE	K LBS/ACRE	CA LBS/ACRE	Mg LBS/ACRE	Zn LBS/ACRE	Fe LBS/ACRE	Mn LBS/ACRE	B LBS/ACRE	Na LBS/ACRE
581152	09/25/2019		TOP BSE	4.97	7.56	15 L	156 M	1089 S	154 S	1.4 S	99 S	82 S	0.7	749

Lab Number	Farm ID	Sample Number	Sulfur	Nitrogen		Carbon	C/N Ratio	Organic Matter	Soluble Salts	Particle Size Analysis - Hydrometer Method			
			LBS/ACRE	NO3-N ppm	Total N %	%	%	%	ppm	% Sand	% Silt	% Clay	Soil Texture
581152		TOP BSE											

RECOMMENDATIONS-Fertilizer/Lime Applications and Rates									
Lab Number	Farm ID	Sample Number	Crop	Nitrogen (N)	Phosphate (P2O5)	Potash (K2O)	Application Rate	Limestone	Application Rate
581152		TOP BSE	Lawn, Cool Season	2 to 4*	1	0.5	pounds per 1,000 square feet	100	pounds per 1000 square feet

Sample Number: TOP BSE

For Cool Season Lawn Establishment: Fall Establishment is best. Apply 1 pound of actual nitrogen per 1,000 square feet at seeding or sprigging and again six weeks later. A slow release form of nitrogen may give the best results. 1 pound of actual nitrogen per 1,000 square feet may be applied as 3.3 pounds of a 27 to 33% nitrogen fertilizer or as 10 pounds of a 8 to 12% N fertilizer. Other N sources may be used , but adjust the rate of product accordingly. Apply P and K to soil test need once a year.

For Cool season lawn Nitrogen needs: [Choose one level to apply] \_\_LOW maintenance nitrogen application: Apply 1 pound of actual N per 1,000 square feet in March or April, and again in September or October. \_\_ MEDIUM maintenance nitrogen application: Apply 1 pound of actual N per 1,000 square feet in March, and again in September and October. \_\_ HIGH maintenance (for use with turf under irrigation) nitrogen application: Apply 0.5 pound of actual nitrogen per 1,000 square feet in March and April, and 1 pound of actual nitrogen per 1,000 square feet in September , October, and November. 1 pound of actual nitrogen can be applied as 3.3 pounds of a 27 to 33% nitrogen only fertilizer or as 10 pounds of a 8 to 12% nitrogen only. Other products may be used, be sure to adjust the rate of product applied depending on the percent N in the product accordingly. If possible use a 30% slow release nitrogen fertilizer.

Phosphorus is low, and would be recommended at rate given above. This can be done with 10 lbs. of an 8 to 12% P<sub>2</sub>O<sub>5</sub> fertilizer or 2 pounds of 45% P<sub>2</sub>O<sub>5</sub> fertilizer per 1,000 sq. ft. Other fertilizers may be used, just adjust the rate of product accordingly depending on the percent P<sub>2</sub>O<sub>5</sub> in the fertilizer product. Apply once per year.

Potassium is medium, and would be recommended at rate given above. This can be done with 1 lbs. of 50 to 60 % K<sub>2</sub>O fertilizer or 10 lbs. of a 3 to 6% K<sub>2</sub>O fertilizer per 1,000 sq. ft. Other fertilizers may be used, just adjust the rate of product accordingly depending on the percent K<sub>2</sub>O in the fertilizer product. Apply once per year.

For information on lawn selection, establishment and care, please contact your county extension agent.

# Example Report

With Explanations of How To Read the Report

Mehlich 1 SOIL TEST RESULTS and RATINGS* (Pounds Per Acre)														
Lab Number	Report Date	Farm ID	Sample Number	pH		Phosphorus	Potassium	Calcium	Magnesium	Zinc	Iron	Manganese	Boron	Sodium
				Soil pH	Buffer Value	P LBS/ACRE	K LBS/ACRE	CA LBS/ACRE	Mg LBS/ACRE	Zn LBS/ACRE	Fe LBS/ACRE	Mn LBS/ACRE	B LBS/ACRE	Na LBS/ACRE
900010	10/18/2017		10	6.41		36 H	114 M	3014 S	707 S	5.3 S	4 S	120 S	1.4	14
900011	10/18/2017		11	6.41		36 H	114 M	3014 S	707 S	5.3 S	4 S	120 S	1.4	14
900012	10/18/2017		12	6.41		36 H	114 M	3014 S	707 S	5.3 S	4 S	120 S	1.4	14

**Soil pH** tells the pH of your soil. **Buffer pH** tells us the resistance to pH change your soil has. Lime recommendations are based off 1) soil pH 2) plant's preferred pH and 3) buffer pH

The amount of **nutrients** in pounds per acre. Indices for Phosphorus(P) and Potassium (K) are Low (L), Medium (M), High (H), and Very High (V). Indices for secondary and micronutrients are Sufficient (S) and Deficient (D). Fertilizer recommendations are based off crop and soil nutrient index level.

Lab Number	Farm ID	Sample Number	Sulfur	Nitrogen		Carbon	C/N Ratio	Organic Matter	Soluble Salts	Particle Size Analysis - Hydrometer Method			
			LBS/ACRE	NO3-N ppm	Total N %	%	%	%	ppm	% Sand	% Silt	% Clay	Soil Texture
900010		10											
900011		11											
900012		12											

**Nitrate** is measured mostly for side dressing on foot tall corn plants. Nitrate is not routinely measured for other TN crops as generally rates for specific crops can be made annually.

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RECOMMENDATIONS-Fertilizer/Lime Applications and Rates									
Lab Number	Farm ID	Sample Number	Crop	Nitrogen (N)	Phosphate (P2O5)	Potash (K2O)	Application Rate	Limestone	Application Rate
900010		10	Alfalfa Hay & Pasture	0-15	0	190	pounds per acre	0	tons per acre
900011		11	Lawn, Cool Season	-	-	-	pounds per 1,000 square feet	0	pounds per 1000 square feet
900012		12	Beans, Snap or Lima	45	30	30	pounds per acre	0	tons per acre

**Nutrients to apply** are found under Nitrogen, Phosphate, and Potash. Fertilizers are sold with their percent N – P2O5 – K2O listed on the label. The text follow up will sometimes give suggestions of product rates. You may also use these percentages to calculate the correct rate of product.

**Application Rate** shows fertilizer or lime units per given area to be applied. This can be in pounds per acre, Tons per acre, pounds per hundred square feet, or other units.

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**Text Follow Ups** below the fertilizer recommendations **or** on the following page. **Dashes** indicate that fertilizer suggestions and rates are in text only.




Client Name: Loudon County, Tennessee		Site Location: Former Poplar Springs Landfill – Final Cover/Cap Restoration & Related Improvements	Project No. Loudon 19-1
Photo No. 1	Date: 11/14/19	 A photograph showing a person wearing a hat and dark clothing standing in a grassy field. The field is covered with fallen leaves, and a dense forest with trees showing autumn foliage is in the background.	
Direction Photo Taken:  SW			
Description:  Borrow Area			

Photo No. 2	Date: 11/14/19	 A photograph showing a grassy field with a dense forest in the background. The trees have autumn foliage, and the field is covered with fallen leaves.
Direction Photo Taken:  E		
Description:  Borrow Area		




Client Name: Loudon County, Tennessee		Site Location: Former Poplar Springs Landfill – Final Cover/Cap Restoration & Related Improvements	Project No. Loudon 19-1
Photo No. 3	Date: 11/14/19		
Direction Photo Taken:  SW			
Description:  Borrow Area			

Photo No. 4	Date: 11/14/19	
Direction Photo Taken:  SE		
Description:  (Bare) area near toe of South Slope		



Client Name: Loudon County, Tennessee		Site Location: Former Poplar Springs Landfill – Final Cover/Cap Restoration & Related Improvements	Project No. Loudon 19-1
Photo No. <b>5</b>	Date: 11/14/19		
Direction Photo Taken:  NE			
Description:  Lower South Channel			

Photo No. <b>6</b>	Date: 11/14/19	
Direction Photo Taken:  SE		
Description:  South Slope		




Client Name: Loudon County, Tennessee		Site Location: Former Poplar Springs Landfill – Final Cover/Cap Restoration & Related Improvements	Project No. Loudon 19-1
Photo No. <b>7</b>	Date: 11/14/19		
Direction Photo Taken:  NW			
Description:  New Seep; just downslope of Former Seep 1A location; note erosion/bare rill; four dead pine trees along rill; no active seep			

Photo No. <b>8</b>	Date: 11/14/19	
Direction Photo Taken:  S		
Description:  New seep area near Former Seep 1A		




Client Name: Loudon County, Tennessee		Site Location: Former Poplar Springs Landfill – Final Cover/Cap Restoration & Related Improvements	Project No. Loudon 19-1
Photo No. <b>9</b>	Date: 11/14/19		
Direction Photo Taken:  E			
Description:  Former Seep 1B/1B Ext area; dry and revegetated.			

Photo No. <b>10</b>	Date: 11/14/19	
Direction Photo Taken:  SW		
Description:  New seep east (above) former Seep 2 location and onto bench		




Client Name: Loudon County, Tennessee		Site Location: Former Poplar Springs Landfill – Final Cover/Cap Restoration & Related Improvements	Project No. Loudon 19-1
Photo No. <b>11</b>	Date: 11/14/19		
Direction Photo Taken:  NW			
Description:  New seep east (above) former Seep 2 area and onto bench; some erosion rills formed.			

Photo No. <b>12</b>	Date: 11/14/19	
Direction Photo Taken:  W		
Description:  New seeps near Former Seeps 3A and 3B below bench; Easternmost new seep actively flowing during inspection (in foreground)		




Client Name: Loudon County, Tennessee		Site Location: Former Poplar Springs Landfill – Final Cover/Cap Restoration & Related Improvements	Project No. Loudon 19-1
Photo No. <b>13</b>	Date: 11/14/19		
Direction Photo Taken:  SE			
Description:  New seeps near Former Seeps 3A and 3B below Seep 2 bench; Easternmost new seep actively flowing during inspection			

Photo No. <b>14</b>	Date: 11/14/19	
Direction Photo Taken:  N		
Description:  Active (re-formed) Seep 4; flowing into East Perimeter Channel; bare; no vegetation. Less flow than in June 2019.		




Client Name: Loudon County, Tennessee		Site Location: Former Poplar Springs Landfill – Final Cover/Cap Restoration & Related Improvements	Project No. Loudon 19-1
Photo No. <b>15</b>	Date: 11/14/19		
Direction Photo Taken:  E			
Description:  Sediment Pond riser outlet area; some ponding adjacent and just North of repaired riser. Bare areas around former ponded water location.			

Photo No. <b>16</b>	Date: 11/14/19	
Direction Photo Taken:  SE		
Description:  Sediment Pond (showing riser with surrounding rip rap)  John Goddard		



Client Name:  
Loudon County, Tennessee

Site Location:  
Former Poplar Springs Landfill – Final Cover/Cap  
Restoration & Related Improvements

Project No.  
Loudon 19-1

Photo No.  
**17**

Date:  
11/14/19

Direction Photo Taken:

S

Description:

Discharge pipe from  
Sediment Pond in  
stream north of pond  
(arrow points to  
approximate top of  
discharge pipe)

