

DIVISION OF LABORATORY SERVICES

Jackson Regional Laboratory 295 Summar Drive Jackson, TN 38301 731-426-0686

Shelby County Laboratory 814 Jefferson Avenue Memphis, TN 38105 901-544-7555

Sent To:

Patrick Mulligan

TDEC-SWM

CHATTANOOGA FIELD

OFFICE

540 McCALLIE AVE. SUITE

550

CHATTANOOGA, TN 37402

Sampling Agency: TDEC: Division of Solid Waste Management

J - Estimated value between MDL and MQL MDL - Method Detection Limit MQL - Method Quantitation Limit U - Undetected Knoxville Regional Laboratory 2101 Medical Center Way Knoxville, TN 37920 865-549-5201

Nashville Central Laboratory 630 Hart Lane Nashville, TN 37243 615-262-6300

> Lab ID: K00008198 Knoxville Regional Laboratory



TDEC-SWM.K00008198.I

This is to certify that the following results were determined using good laboratory practices and in accordance with federal or state approved methodologies.

Analytical Supervisor

K00008198002

Field Determinations

pH:

Project Name:

Sample Description:

Landfill Sediment Pond

Chlorine, residual:

Conductivity: Temperature:

Dissolved Oxygen:

CFS

Project Site No.:

Sampler Project Name: Poplar Springs Landfill SNL53-1062

Other:

Station No.:

S-2 Pond

Flow:

Date/Time Collected:

11/21/2014 10:00

Sampler's Name:

P. Mulligan & T. Hill

County: Sample Matrix: LOUDON - 53

EFO:

Water Knoxville

Sampling Agency: Billing Code:

TDEC-SWM

Agency Invoiced: EN00004176

TDEC-SWM

Send Report To:

Priority Date: Date/Time Received:

11/21/2014

TDEC-SWM

15:30

J Liu

TEST: Ammonia

METHOD: SM 4500-NH3 G

Received By:

PERFORMING LAB: Nashville

ANALYTE RESULT MQL DATE UNITS MDL ANALYZED BY: 99 mg/L 3.400 10.00 M Chen 12/2/2014 Ammonia

TEST: Total Organic Nitrogen METHOD: EPA 351.2 PERFORMING LAB: Nashville ANALYTE RESULT UNITS MDL MQL ANALYZED BY: DATE U mg/L 0.17 0.50 L Satterwhite 12/8/2014 Total Organic Nitrogen

K00008198003

Field Determinations

pH:

Project Name:

Sample Description:

Leachate from seeps on landfill

Chlorine, residual:

Conductivity: Temperature:

Dissolved Oxygen: Other:

Flow:

Sampler Project Name: Poplar Springs Landfill

Project Site No.: Station No.:

SNL53-1062

S-1 Leachate

Date/Time Collected:

11/21/2014 10:26

Sampler's Name:

P. Mulligan & T. Hill

County: Sample Matrix: LOUDON - 53

EFO:

Water Knoxville

Sampling Agency: Billing Code:

TDEC-SWM EN00004176

TDEC-SWM

Agency Invoiced:

TDEC-SWM

CFS

Send Report To: **Priority Date:**

Date/Time Received:

11/21/2014

Received By:

J Liu

TEST: Ammonia

METHOD: SM 4500-NH3 G PERFORMING LAB: Nashville

15:30

ANALYTE RESULT UNITS MDL MQL ANALYZED BY: DATE 710 mg/L 17.000 50.00 M Chen 12/2/2014 Ammonia

TEST: Total Organic Nitrogen METHOD: EPA 351.2 PERFORMING LAB: Nashville ANALYTE RESULT UNITS MDL MQL ANALYZED BY: DATE 120 mg/L 34 100 L Satterwhite 12/4/2014 Total Organic Nitrogen

K00008198004

Field Determinations

:Hq

Project Name: Sample Description:

Residential Well

Chlorine, residual:

Conductivity: Temperature:

Sampler Project Name: Poplar Springs Landfill

Dissolved Oxygen: Other:

Project Site No.: Station No.:

SNL53-1062 R-1 Johnson

Flow:

Date/Time Collected:

11/21/2014 11:32 P. Mulligan & T. Hill

Sampler's Name: County:

LOUDON - 53

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-SWM EN00004176 TDEC-SWM

Agency Invoiced:

TDEC-SWM

CFS

Send Report To: **Priority Date:**

Date/Time Received:

11/21/2014 15:30 Received By:

J Liu

TEST: Ammonia

PERFORMING LAB: Nashville

METHOD: SM 4500-NH3 G

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Ammonia	0.15	mg/L	0.034	0.10	M Chen	12/2/2014

TEST: Total Organic Nitrogen PERFORMING LAB: Nashville	ME.	THOD: EPA 35					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Organic Nitrogen	U	mg/L	0.17	0.50	L Satterwhite	12/4/2014	

Sample Description:

K00008198005

pH:

Project Name:

Chlorine, residual: Residential well

> Conductivity: Temperature:

Field Determinations

Dissolved Oxygen: Sampler Project Name: Poplar Springs Landfill

Project Site No.: Station No.:

SNL53-1062 R-2 Hines

Other: Flow:

Date/Time Collected:

11/21/2014 12:06

Sampler's Name: County:

P. Mulligan & T. Hill

Sample Matrix:

LOUDON - 53 Water

EFO: Sampling Agency: Knoxville TDEC-SWM

EN00004176

Agency Invoiced:

TDEC-SWM

CFS

Send Report To:

TDEC-SWM

Priority Date:

Billing Code:

Date/Time Received:

11/21/2014 15:30 Received By:

J Liu

TEST: Ammonia PERFORMING LAB: Nashville	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Ammonia	0.12	mg/L	0.034	0.10	M Chen	12/2/2014

TEST: Total Organic Nitrogen PERFORMING LAB: Nashville	ME	THOD: EPA 35					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE 12/4/2014	
Total Organic Nitrogen	U	mg/L	0.17	0.50	L Satterwhite		

K00008198006

pH:

Field Determinations

CFS

Project Name: Sample Description:

Residential Well

Chlorine, residual:

Conductivity: Temperature:

Sampler Project Name: Poplar Springs Landfill

Dissolved Oxygen: Other: Flow:

Project Site No.: Station No.:

SNL53-1062 R-3 Hembree

Date/Time Collected:

11/21/2014 13:03

Sampler's Name:

P. Mulligan & T. Hill

County: Sample Matrix: LOUDON - 53

EFO:

Water Knoxville

Sampling Agency: Billing Code:

TDEC-SWM

EN00004176 TDEC-SWM

TDEC-SWM Agency Invoiced:

Send Report To: **Priority Date:**

Date/Time Received:

11/21/2014 15:30 Received By:

J Liu

TEST: Ammonia METHOD: SM 4500-NH3 G PERFORMING LAB: Nashville

ANALYTE RESULT UNITS MQL ANALYZED BY: DATE MDL 0.15 mg/L 0.034 0.10 M Chen 12/2/2014 Ammonia

TEST: Total Organic Nitrogen METHOD: EPA 351.2 PERFORMING LAB: Nashville ANALYTE RESULT UNITS MDL MQL ANALYZED BY: DATE 0.29 mg/L 0.17 0.50 L Satterwhite 12/4/2014 Total Organic Nitrogen

K00008198007

Field Determinations

pH:

Project Name: Sample Description:

Residential Well

Chlorine, residual:

Conductivity: Temperature:

Sampler Project Name: Poplar Springs Landfill

Dissolved Oxygen: Other:

Station No.:

Project Site No.:

SNL53-1062 R-4 Humphreys

Flow:

Date/Time Collected:

11/21/2014 13:35 P. Mulligan & T. Hill

Sampler's Name: County:

LOUDON - 53

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-SWM EN00004176 TDEC-SWM

Agency Invoiced:

TDEC-SWM

CFS

Send Report To: **Priority Date:**

Date/Time Received:

11/21/2014 15:30

Received By:

J Liu

TEST: Ammonia METHOD: SM 4500-NH3 G PERFORMING LAB: Nashville RESULT ANALYTE UNITS MDL MQL ANALYZED BY: DATE U 0.034 M Chen mg/L 0.10 12/2/2014 Ammonia

TEST: Total Organic Nitrogen PERFORMING LAB: Nashville	MET	THOD: EPA 35					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE 12/4/2014	
Total Organic Nitrogen	U	mg/L	0.17	0.50	L Satterwhite		

K00008198008

Field Determinations

Project Name:

Sample Description:

Residential Well - duplicate sample

Chlorine, residual:

Conductivity:

Temperature: Dissolved Oxygen:

CFS

Sampler Project Name: Poplar Springs Landfill

SNL53-1062

Other: Flow:

:Hq

Station No.:

Project Site No.:

R-4 Duplicate Humphreys 11/21/2014 13:40

Date/Time Collected: Sampler's Name:

P. Mulligan & T. Hill

County:

LOUDON - 53

Sample Matrix: EFO:

Water Knoxville

Sampling Agency: Billing Code:

Send Report To:

TDEC-SWM

EN00004176

TDEC-SWM

Priority Date:

Date/Time Received:

11/21/2014

15:30

Received By:

Agency Invoiced:

METHOD: SM 4500-NH3 G

J Liu

TDEC-SWM

TEST: Ammonia

PERFORMING LAB: Nashville

ANALYTE RESULT UNITS MDL MQL ANALYZED BY: DATE U 0.034 0.10 M Chen Ammonia mg/L 12/2/2014

TEST: Total Organic Nitrogen METHOD: EPA 351.2 PERFORMING LAB: Nashville ANALYTE RESULT UNITS MQL MDL ANALYZED BY: DATE Total Organic Nitrogen U mg/L 0.17 0.50 L Satterwhite 12/4/2014



PLEASE PRINT LEGIBLY
PROJECT/SITE NO. SNL 53-1062

K00008198-001

Organic Analysis
Volatiles and Petroleum Hydrocarbons

	OJECT/SITE NO. SNL 53-10	62	PROJECT	NAM	IE Poplar Springs Landfill	Laboratory Number						
ST	ATION NUMBER Blank		COUNTY	Loud	lon							
	SCRIPTION Trip Blank			PO.		Chain of Custody and Supplemental Information						
	REAM MILE		DEPTH	rys S	MATRIX Water	Only one chain of custody form is required per sample						
CO	LLECTED: DATE 11/21/14	TENNET.		10/(-5)	TIME 8:54	set or point (if all collected at the same time)						
	MPLER'S NAME (printed)	Patric	k Mulligan and Timothy Hill	(Charles		1. Collected by PJP/TNH						
	MPLING AGENCY TDEC-DS		KEFO B	ILLIN	G CODE EN00004176	Date 11/21/14 > Time 8:59						
	PRIORITY, DATE NEEDED		是是1870年第二次的1975年	Market Market		Delivered to Luck Les Cab						
SE	ND REPORT TO: Patrick Me	ulligar	i desemble de la completa de la comp			Date 11-21-14 Time 1530 1/11/1						
			ok Pike, Knoxville, TN 37921	035		2. Received by						
CO	NTACT HAZARD	Mark P				Date 11/21914 Time 1630						
*	NPDES Volatiles - 624		TCL Volatiles - 6260A	*	TCLP Volatiles	Delivered to FE/D E Y						
	Bromoform	×	Chloromethane	BILLING CODE ENOC 37921		Date 11/24/14 Time (5-30						
	Bromodichloromethane	X	Bromomethane		Carbon tetrachloride	3. Received by						
-	Carbon Tetrachloride	×	Vinyl chloride	+		Date Time						
	Chlorobenzene	×	Chloroethane			Delivered to						
	Chloroethane	X	Methylene chloride		1,2-Dichloroethane	Date Time						
-	2-Chloroethylvinyl ether	X	Acetone		1,1-Dichloroethane	4. Received in Lab by						
	Chloroform	X	Carbon disulfide		Methyl ethylketone	Date 11 / 2/11 / Time / CZ C						
	Chloromethane	X	1,1-Dichloroethene		Tetrachloroethene	Logged in by						
	Dibromochloromethane	X	A STATE OF		Trichloroethene	Date il 2 1 1 1 Time 1 1 0 X						
X	1,2-Dichlorobenzene	X	Cis-1,2-dichloroethene		Vinyl chloride	100						
-	1.3-Dichlorobenzene	×	Trans-1,2-dichloroethene	1.0	BTEX - 8260A - UST	Additional Information						
X	1,4-Dichlorobenzene	X	1,2-Dichloroethane			Approximate volume of sample						
	Dichlorodifluoromethane	X	Chloroform		Toluene	40 ml						
	1,1-Dichloroethane	X	2-Butanone		Ethyl benzene							
×	1,2-Dichloroethane	X	1,1,1-Trichloroethane		o-Xylene	2. Nearest town or city Loudon, TN						
	1,1-Dichloroethene	X	Carbon tetrachloride			3. Others present at collection JTC, RA, RAB						
	Cis-1,2-dichloroethene	X	Vinyl acetate									
	Trans-1,2-dichloroethene	X	Bromodichloromethane		Methyl t-butyl ether	Number of other samples collected at same time at						
	1,2-Dichloropropane	X			Diisopropyl ether	this point 🐉						
	Cis-1,3-dichloropropene	X	Cis-1,3-dichloropropene	100								
	Trans-1,2-dichloroethene	X	Trichloroethene		Gasoline RangeOrganics							
	Methylene chloride	X	Dibromochloromethane		Diesel RangeOrganics	5. Field collection procedure, handling and/or						
-	1,1,2,2-Tetrachloroethane	X	1,1,2-Trichloroethane	_	Oil Range Organics	preservation of this sample "Potable Water Supply Sampling Proceedure" (EPA Region 4						
	Tetrachloroethene	X	Benzene	*	Other	Science and Ecosystem Support Division, Athens, GA, 5/28/2013)						
	1,1,1-Trichloroethane	X	Trans-1,3-dichloropropene	X	Acrylonitrile							
	1,1,2-Trichloroethane	X	Bromoform	X	Bromochloromethane							
	Trichloroethene	X	4-Methyl-2-pentanone	X		6. Mode of transportation to lab Car						
X	Trichlorofluoromethane	X	2-Hexanone	X	1,2-Dibromoethane							
	Vinyl chloride	X	Tetrachloroethene	X	trans-1,4-Dichloro-2-butene							
	Benzene	X	Toluene	X	Methylene bromide	7. Sample sealed by PJM and TNH						
	Ethylbenzene	X	1,1,2,2-Tetrachloroethane	X	Methyl iodide	8. Date sample sealed 11/21/14						
	Toluene	X	Chlorobenzene	X	1,1,1,2-Tetrachloroethane	9. Remarks						
	o-Xylene	X	Ethyl benzene	X	1,2,3-Trichloropropane							
	m-Xylene	X	Styrene									
	p-Xylene	X	o-Xylene									
		X	m-Xylene									
		X	p-Xylene									
H-3	013 (rev 11/97)			-		RDA 1						



		pring	s Landfill SN	NL 53-1062				*	Metals	Laboratory Number	
STA	ATION NUMBER: S-2			WATE	RBODY N	NAME:				aluminum, Al	1/ 000 00
STI	REAM MILE:			COUNTY:	Loudon				*	antimony, Sb	K00008198-00
DE	SCRIPTION: Landfill Por	ıd							*	arsenic, As	Chain of Custody and Supplemental Information
LA	TITUDE: 35°43'55.89	84" N		LONGITUDE	84°17'2	6.6424" Y	W		*	barium, Ba	Only <u>one</u> chain of custody form is required per sample or point (if all collected at the same time)
Ma	trix: Water				Depth:				*	beryllium, Be	6.7
CO	LLECTED: DATE: 1	1/21/	14	T	IME		10:03			boron, B	1. Collected By: PJM and TNH
SAI	SAMPLER'S FULL NAME (printed) Patrick Mulligan and Timothy Hill									cadmium, Cd	Date 11/21/14 Time //
SAMPLING AGENCY: TDEC-DSWM-KEFO									*	calcium, Ca	Delivered to BACK RES CON
	PRIORITY, DATE NEEDED				ILLING C	ODE	EN0000417	76		chromium, Cr	Date 11-01-14/ Time 9 15-30
	ND REPORT TO: Patrick M		n, 3711 Mid						*	cobalt, Co	2. Received by
* Env. Microbiology * Gen. Inorganics (con't) Other General Inorganics							rganics:	*	copper, Cu	Date 11/2-1114 Time 16-30	
THE COLUMN	coliform, fecal*	1	ortho-phos			Othe.		Бишев	*	iron, Fe	Delivered to FED EX
	coliform, total*			e D		1				lithium, Li	Date 11 124 114 Time 1530
	strep, fecal*	*	sulfate*						*	lead, Pb	3. Received by
	E. Coli*	-	turbidity*						*	magnesium, Mg	Date Time
	Enterococcus*	1		served. Nutrient					*	manganese, Mn	Delivered to
	Enterococcas	+	COD*	ser rea, realitient		+			*	mercury, Hg	Date Time
*	General Inorganics	*	nitrogen, a	mmonia	-				*	nickel, Ni	4. Received in Lab by
	Not Preserved			NO ₃ & NO ₂					*	potassium, K	Date Time
-	acidity as CaCO ₃ *	-							*	selenium, Se	5. Received in Lab by
	alkalinity as CaCO ₃ *	*	nitrogen, total Kjeldahl nitrogen, total organic						*	silver, Ag	Date Time
	BOD, 5-day*	-	phosphate,						-	sodium, Na	6. Received in Lab by
_	CBQD, 5-day*	-	phosphate,	totai		-				strontium, Sr	Date 11/2/11/4 Time 11/20
ale	chloride*	-	CDECIAI	PRESERVATION	ON	-			*	thallium, Tl	Logged in by
*	chromium, hexavalent	-	cyanide	PRESERVAIN	JIN _	+			*	vanadium, V	Date 1 7 Time 6 0 8
ar.	color	-	oil and gre	000	_				*	zinc, Zn	Date 4 5 1 19 1 11119 6 0 8
		-	phenols, to			3/1-4-1	I- Dididi-	vor etticet basen	-	hardness, Ca as CaCO ₃ *	· · · · · · · · · · · · · · · · · · ·
-	fluoride*	-			1004		Is Digestion ty	pe:	- 1		
-	MBAS*	-	sulfide, tot	al	1930	Norm			X	hardness, total as CaCO ₃ *	Additional Information
		-	100+			Disso					Additional information
	nitrogen, nitrate*	-				TCLP					1 Others are startled in
	nitrogen, nitrite*	-				Other			_	Other Metals:	Others present at collection JTC, Rs., RAB
	pH	-		WHILE THE THE	NAME OF THE OWNER, OWNE	-					
	residue, dissolved*	-	Asbestos								2. Other samples collected
	residue, settleable*	_	bulk asbest								~
residue, suspended* other microscopic											Mode of transportation to lab
	residue, total*										Car
* de	enotes analyses performed only	on w	ater								4. Cooler sealed by
U				FIELD D		NATIO					PJM and TNH
1	Conductivity, (uhmos)			Chlorine, resi				Other Fiel	d Parai	meters:	5. Date cooler sealed
	Dissolved Oxygen, (mg/L)			Turbidity, (N	TU)						11/21/14
	Temperature, (°C)			ORP, (mv)							6. Remarks
pH Flow Rate											
		-									4



Organic Analysis Cooo & 19 P Volatiles and Retroleum Hydrocarbons PLEASE PRINT LEGIBLY PROJECT/SITE NO. SNL 53-1062 PROJECT NAME Poplar Springs Landfill Laboratory Number STATION NUMBER S-2 Pond COUNTY Loudon DESCRIPTION Landfill Sediment Pond Chain of Custody and Supplemental Information STREAM MILE DEPTH MATRIX Water Only one chain of custody form is required per sample COLLECTED: DATE 11/21/14 TIME 10: 06 set or point (if all collected at the same time) SAMPLER'S NAME (printed) Patrick Mulligan and Timothy Hill 1. Collected by PJP/TNH SAMPLING AGENCY TDEC-DSWM-KEFO BILLING CODE EN00004176 Date 11/21/14 ./ Time 10:00 Delivered to Annx IF PRIORITY, DATE NEEDED 0 SEND REPORT TO: Patrick Mulligan Date 1/-21-14 Time 3711 Middlebrook Pike, Knoxville, TN 37921 Received by CONTACT HAZARD Date 11/21144 Time NPDES Volatiles - 624 TCL Volatiles - 6260A TCLP Volatiles Delivered to 15VV Bromoform Chloromethane Date 1124114 Benzene Time Bromodichloromethane × Bromomethane Carbon tetrachloride Received by Carbon Tetrachloride Vinyl chloride Chlorobenzene Date Time Chlorobenzene Chloroethane Chloroform Delivered to × Methylene chloride Date Chloroethane 1,2-Dichloroethane Time 2-Chloroethylvinyl ether × Acetone 1,1-Dichloroethane Received in Lab by Carbon disulfide Time Chloroform Methyl ethylketone Date 1/ /.2/ Chloromethane 1,1-Dichloroethene Tetrachloroethene Logged in by 1.1-Dichloroethane Time Dibromochloromethane Trichloroethene Date . 1 1 7 17 Cis-1,2-dichloroethene Vinyl chloride 1,2-Dichlorobenzene Trans-1,2-dichloroethene BTEX - 8260A - UST Additional Information 1,3-Dichlorobenzene ★ 1,4-Dichlorobenzene 1.2-Dichloroethane Benzene Approximate volume of sample Dichlorodifluoromethane × Chloroform Toluene 40 × 2-Butanone Ethyl benzene 1,1-Dichloroethane X 1,2-Dichloroethane ★ 1,1,1-Trichloroethane o-Xylene 2. Nearest town or city Loudon, TN 3. Others present at collection JTC, Rok, RAB 1,1-Dichloroethene Carbon tetrachloride m-Xylene Cis-1,2-dichloroethene Vinyl acetate p-Xylene 4. Number of other samples collected at same time at × Bromodichloromethane Methyl t-butyl ether Trans-1,2-dichloroethene 1,2-Dichloropropane Diisopropyl ether this point 2 1,2-Dichloropropane Cis-1,3-dichloropropene × Cis-1,3-dichloropropene TPH by GC Trans-1,2-dichloroethene × Trichloroethene Gasoline RangeOrganics Dibromochloromethane Diesel Range Organics 5. Field collection procedure, handling and/or Methylene chloride Oil Range Organics preservation of this sample "Surface Water Sampling Procedure" (EPA Region 4 Science and 1.1.2.2-Tetrachloroethane 1,1,2-Trichloroethane × Other Ecosystem Support Division, Athens, GA, 5/28/2013) Tetrachloroethene Benzene × Acrylonitrile 1,1,1-Trichloroethane Trans-1,3-dichloropropene X Bromoform Bromochloromethane 1,1,2-Trichloroethane × 4-Methyl-2-pentanone 1,2-Dibromo-3-chloropropane 6. Mode of transportation to lab Car Trichloroethene X 2-Hexanone x Trichlorofluoromethane 1.2-Dibromoethane X Tetrachloroethene trans-1,4-Dichloro-2-butene Vinyl chloride Benzene Toluene Methylene bromide 7. Sample sealed by PJM and TNH 1,1,2,2-Tetrachloroethane X Ethylbenzene Methyl iodide 8. Date sample sealed 11/21/14 Chlorobenzene 1,1,1,2-Tertachloroethane 9. Remarks Toluene o-Xylene Ethyl benzene 1,2,3-Trichloropropane x Styrene m-Xylene X o-Xylene p-Xylene m-Xylene

x p-Xylene

State of Tennessee – Environmental Laboratories PLEASE PRINT LEGIBLY



		prings	Landfill SN	L 53-1062			*	Metals	Laboratory Number		
STAT	TION NUMBER: S-1			WATE	RBODY NA	ME:				aluminum, Al	10 - 0100 -07
STRI	EAM MILE:			COUNTY:	Loudon				*	antimony, Sb	K0000 8198-003
DESC	CRIPTION: Leachate fro	m see	ps on landfil	I					*	arsenic, As	Chain of Custody and Supplemental Information
LAT	TUDE: 35°43'55.89	84" N		LONGITUDE:	84°17'26.	6424" W	W		*	barium, Ba	Only one chain of custody form is required per sample or point (if all collected at the same time)
Matr	ix: Water				Depth:				*	beryllium, Be	4,10
COL	LECTED: DATE: 1	1/21/1	4	TI	ME		10:26			boron, B	1. Collected By: PJM and TNH
SAM	SAMPLER'S FULL NAME (printed) Patrick Mulligan and Timothy Hill								*	cadmium, Cd	Date 11/21/14 / Time to: 26
			DSWM-KE	FO					*	calcium, Ca	Delivered to Roca En Can
IF PF	RIORITY, DATE NEEDED	:		BI	LLING CO	DE	EN00004176	6	*	chromium, Cr	Date //-21-/4 Time /530
	SEND REPORT TO: Patrick Mulligan, 3711 Middlebrook Pike, Knoxville, TN 3								*	cobalt, Co	2. Received by
Contract of the Contract of th	* Env. Microbiology * Gen. Inorganics (con't)				-	r General Inorg	ganies:	*	copper, Cu	Date (1/24/14 Time 1/20	
	coliform, fecal*	1	ortho-phos			Other	Generalinor	games	*	iron, Fe	Delivered to FEVEY
	coliform, total*		silica*	phate						lithium, Li	Date 1/124/14 Time 1520
	strep, fecal*	*	sulfate*	312					*	lead, Pb	3. Received by
	E. Coli*	1	turbidity*	Q					*	magnesium, Mg	Date Time
	Enterococcus*	1		Preserved, Nutrient					*	manganese, Mn	Delivered to
	Emerococcus		COD*						*	mercury, Hg	Date Time
*	General Inorganics	*	nitrogen, a	mmonia				*	nickel, Ni	4. Received in Lab by	
	Not Preserved	-	nitrogen, N						*	potassium, K	Date Time
	acidity as CaCO ₃ *	-		itrogen, total Kjeldahl					*	selenium, Se	5. Received in Lab by
	alkalinity as CaCO ₃ *	*		nitrogen, total organic					*	silver, Ag	Date Time
	BOD, 5-day*	+	phosphate,		_	-				sodium, Na	6. Received in Lab by
		-	phosphate,	totai						strontium, Sr	Date 11 2114 Time 1530
	CBOD, 5-day*	-	CDECIAL	PRESERVATIO	N.				*	thallium, Tl	Logged in by
		-		PRESERVATIO	'IN				*	vanadium, V	Date 11 2114 Time 1608
	chromium, hexavalent	-	cyanide oil and gre	242			~		*	zinc, Zn	Date 11 2-11-14 Time 1 608
	color					3.5 4.1	L DI		-	hardness, Ca as CaCO ₃ *	
	Conductivity*	-	phenols, to				ls Digestion typ	oe:	and the same	hardness, total as CaCO ₃ *	
		-	sulfide, tot	ai*		Norma			X	nardness, total as CaCO ₃ *	Additional Information
	MBAS*		TOC*			Dissol					Additional Information
	nitrogen, nitrate*	-				TCLP			-	7-4-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	1.04
	nitrogen, nitrite*					Other:	:			Other Metals:	1. Others present at collection
	oH	-			Control Control						JTC, RA, RAB
	residue, dissolved*	-	Asbestos		100000						2. Other samples collected
	residue, settleable*		bulk asbest								2
	residue, suspended* other microscopic										Mode of transportation to lab
	residue, total*										Car
* den	otes analyses performed only	on w	ater								4. Cooler sealed by
				FIELD DE		ATION					PJM and TNH
						Other Fiel	d Para	meters:	5. Date cooler sealed		
	Dissolved Oxygen, (mg/L) Turbidity, (NTU)								11/21/14		
	Temperature, (°C) ORP, (mv)								6. Remarks		
pH Flow Rate											
L											



PLEASE PRINT LEGIBLY

K00008198-003

Organic Analysis
Volatiles and Petroleum Hydrocarbons

PROJECT/SITE NO. SNL 53-1062 PROJECT NAME Poplar Springs Landfill Laboratory Number STATION NUMBER S-1 Leachate COUNTY Loudon DESCRIPTION Leachate from seeps on landfill Chain of Custody and Supplemental Information STREAM MILE DEPTH MATRIX Water Only one chain of custody form is required per sample COLLECTED: DATE 11/21/14 TIME 10:28 set or point (if all collected at the same time) SAMPLER'S NAME (printed) Patrick Mulligan and Timothy Hill 1. Collected by PJP/TNH SAMPLING AGENCY TDEC-DSWM-KEFO BILLING CODE EN00004176 Date 11/21/14 Time 10:23 IF PRIORITY, DATE NEEDED Delivered to Kapa SEND REPORT TO: Patrick Mulligan Date 11-71-14 Time 3711 Middlebrook Pike, Knoxville, TN 37921 Received by **CONTACT HAZARD** Date 11 1 214/11 Time NPDES Volatiles - 624 TCL Volatiles - 6260A TCLP Volatiles Delivered to PP/D 84 Bromoform ★ Chloromethane Benzene Date 11 124114 Time 1520 Bromodichloromethane Bromomethane Carbon tetrachloride Received by Carbon Tetrachloride Vinyl chloride Chlorobenzene Time Date Chlorobenzene Chloroethane Chloroform Delivered to Methylene chloride Chloroethane 1,2-Dichloroethane Date Time × 2-Chloroethylvinyl ether Acetone 1,1-Dichloroethane Received in Lab by Chloroform × Carbon disulfide Methyl ethylketone Time Date 11/ VIL Chloromethane 1,1-Dichloroethene Tetrachloroethene Logged in by Dibromochloromethane 1.1-Dichloroethane Trichloroethene Date Cis-1,2-dichloroethene Vinyl chloride × 1,2-Dichlorobenzene BTEX - 8260A - UST 1,3-Dichlorobenzene Additional Information Trans-1,2-dichloroethene X 1.4-Dichlorobenzene 1,2-Dichloroethane Benzene 1. Approximate volume of sample Dichlorodifluoromethane X Chloroform Toluene 40 ML × 2-Butanone Ethyl benzene 1,1-Dichloroethane 2. Nearest town or city Loudon, TN X 1.2-Dichloroethane × 1.1.1-Trichloroethane o-Xylene 1.1-Dichloroethene Carbon tetrachloride m-Xylene 3. Others present at collection JTC, RA, RAB Cis-1,2-dichloroethene Vinyl acetate p-Xylene Methyl t-butyl ether Trans-1,2-dichloroethene X Bromodichloromethane 4. Number of other samples collected at same time at 1.2-Dichloropropane 1,2-Dichloropropane Diisopropyl ether this point 2 TPH by GC Cis-1,3-dichloropropene Cis-1,3-dichloropropene Trans-1,2-dichloroethene Trichloroethene Gasoline RangeOrganics × × Diesel RangeOrganics Methylene chloride Dibromochloromethane 5. Field collection procedure, handling and/or Oil Range Organics 1,1,2,2-Tetrachloroethane × 1,1,2-Trichloroethane preservation of this sample "Surface Water Sampling Procedure" (EPA Region 4 Science and Other Ecosystem Support Division, Athens, GA, 5/28/2013) Tetrachloroethene X Benzene × Acrylonitrile 1,1,1-Trichloroethane Trans-1,3-dichloropropene Bromochloromethane 1.1.2-Trichloroethane × Bromoform 4-Methyl-2-pentanone 1,2-Dibromo-3-chloropropane 6. Mode of transportation to lab Car Trichloroethene 1,2-Dibromoethane Trichlorofluoromethane × 2-Hexanone Vinyl chloride X Tetrachloroethene trans-1,4-Dichloro-2-butene Benzene X Toluene Methylene bromide 7. Sample sealed by PJM and TNH 1,1,2,2-Tetrachloroethane Methyl iodide 8. Date sample sealed 11/21/14 Ethylbenzene 1,1,1,2-Tertachloroethane Chlorobenzene 9. Remarks Toluene Ethyl benzene X 1,2,3-Trichloropropane o-Xylene X Styrene m-Xvlene X o-Xylene p-Xylene x m-Xylene X p-Xylene



PROJECT NAME: Popl	ar Spring	s Landfill SN	NL 53-1062			*	Metals	Laboratory Number		
STATION NUMBER: R-1	JOHN	Sass	WATE	RBODY N	AME:				aluminum, Al	
STREAM MILE:			COUNTY:	Loudon				*	antimony, Sb	K0000 8198 -004
DESCRIPTION: Resident	ial Well							*	arsenic, As	Chain of Custody and Supplemental Information
LATITUDE:			LONGITUDE:					*	barium, Ba	Only <u>one</u> chain of custody form is required per sample or point (if all collected at the same time)
Matrix: Water				Depth:			-	*	beryllium, Be	111
COLLECTED: DATE	: 11/21/	14	T	IME		11:32			boron, B	1. Collected By: PJM and TNH
SAMPLER'S FULL NAME (printed) Patrick Mulligan and Timothy Hill									cadmium, Cd	Date 11/21/14 Time 11: 32 / 1/1
SAMPLING AGENCY: TDEC-DSWM-KEFO									calcium, Ca	Delivered to Landa Re (S.)
IF PRIORITY, DATE NEEDED: BILLING CODE EN00004176								*	chromium, Cr	Date 11-21-14 Times 1530
SEND REPORT TO: Patric	k Mulliga	an, 3711 Mid	dlebrook Pike, Kr	oxville, TN	N 37921			*	cobalt, Co	2. Received by
* Env. Microbiology	×	Gen. Inorg	ganics (con't)		Other	General Inorg	ganics:	*	copper, Cu	Date 11/2/14 Time 1530
coliform, fecal*		ortho-phos					Andreid Service Service	*	iron, Fe	Delivered to LEV EX
coliform, total*		silica*							lithium, Li	Date (1124/14 Time , (50
strep, fecal*	*	sulfate*	30					*	lead, Pb	3. Received by
E. Coli*		turbidity*						*	magnesium, Mg	Date Time
Enterococcus*		Pre	served, Nutrient					*	manganese, Mn	Delivered to
		COD*						*	mercury, Hg	Date Time
* General Inorganics	*	nitrogen, a	mmonia					*	nickel, Ni	4. Received in Lab by
Not Preserved		nitrogen, N	1O ₃ & NO ₂					*	potassium, K	Date Time
acidity as CaCO3*		nitrogen, to	otal Kjeldahl					*	selenium, Se	5. Received in Lab by
alkalinity as CaCO3*	*		otal organic					*	silver, Ag	Date Time
BOD, 5-day*		phosphate,							sodium, Na	6. Received in Lab by
CBOD, 5-day*		-							strontium, Sr	Date 11/21/14 Time 1530
* chioride* 31X		SPECIAL	PRESERVATIO	N				*	thallium, Tl	Logged in by
chromium, hexavalent		cyanide						*	vanadium, V	Date (1) 21114 Time 1 500
color		oil and grea	ase					*	zinc, Zn	110114 1008
conductivity*		phenols, to			Metals	s Digestion typ	e: ***		hardness, Ca as CaCO3*	
* flaoride* 212		sulfide, tota		100	Norma			1/	hardness, total as CaCO3*	
MBAS*		TOC*			Dissol			×		Additional Information
nitrogen, nitrate*					TCLP					
nitrogen, nitrite*					Other:				Other Metals:	Others present at collection
pH										JTC, RA, RAB
residue, dissolved*		Asbestos	15 K (4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							2. Other samples collected
residue, settleable*		bulk asbest	tos							2
residue, suspended*		other micro	oscopic							3. Mode of transportation to lab
residue, total*										Car
* denotes analyses performed of	only on w	ater								4. Cooler sealed by
		000 FE	FIELD DE	TERMIN	NATION	NS				PJM and TNH
Conductivity, (uhmos)	1		Chlorine, resid				Other Field	d Paran	neters:	5. Date cooler sealed
Dissolved Oxygen, (mg/L) Turbidity, (NTU)			Other Field				11/21/14			
Temperature, (°C)									6. Remarks	
pH Flow Rate										
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							



PH-3013 (rev 11/97)

Organic Analysis Laboratory Number 160008194 Volatiles and Petroleum Hydrocarbons PLEASE PRINT LEGIBLY PROJECT/SITE NO. SNL 53-1062 PROJECT NAME Poplar Springs Landfill STATION NUMBER R-1 Jotter Suav COUNTY Loudon **DESCRIPTION** Residential Well Chain of Custody and Supplemental Information STREAM MILE DEPTH MATRIX Water Only one chain of custody form is required per sample COLLECTED: DATE 11/21/14 TIME 11:32 set or point (if all collected at the same time) SAMPLER'S NAME (printed) Patrick Mulligan and Timothy Hill 1. Collected by PJP/TNH SAMPLING AGENCY TDEC-DSWM-KEFO BILLING CODE EN00004176 Time 11:32 Date 11/21/14 IF PRIORITY, DATE NEEDED Delivered to An UK (a 8 SEND REPORT TO: Patrick Mulligan 1530 Date 11-21-14 clTime 3711 Middlebrook Pike, Knoxville, TN 37921 Received by Date II Delivered to CONTACT HAZARD Time 120 NPDES Volatiles - 624 TCL Volatiles - 6260A TCLP Volatiles Chloromethane Benzene Bromoform Date 11 12.4/14 Time 1670 Bromodichloromethane Bromomethane Carbon tetrachloride Received by Carbon Tetrachloride Vinyl chloride Chlorobenzene Time Date Chlorobenzene Chloroethane Chloroform Delivered to Methylene chloride Chloroethane 1,2-Dichloroethane Date Time 2-Chloroethylvinyl ether × Acetone 1,1-Dichloroethane Received in Lab by Chloroform Carbon disulfide Time Methyl ethylketone Date 11/5/1 Chloromethane 1,1-Dichloroethene Tetrachloroethene Logged in by Luc Dibromochloromethane 1,1-Dichloroethane Trichloroethene Date \1 Time 1,2-Dichlorobenzene Cis-1,2-dichloroethene Vinyl chloride 1,3-Dichlorobenzene Trans-1,2-dichloroethene BTEX - 8260A - UST Additional Information 1,4-Dichlorobenzene 1.2-Dichloroethane Benzene 1. Approximate volume of sample Dichlorodifluoromethane × Chloroform Toluene × 1,1-Dichloroethane 2-Butanone Ethyl benzene X 1,2-Dichloroethane 1,1,1-Trichloroethane o-Xylene 2. Nearest town or city Loudon, TN 1,1-Dichloroethene Carbon tetrachloride m-Xylene 3. Others present at collection JTC, RA, RAB Cis-1,2-dichloroethene Vinyl acetate p-Xylene Trans-1,2-dichloroethene Bromodichloromethane Methyl t-butyl ether 4. Number of other samples collected at same time at 1,2-Dichloropropane Diisopropyl ether 1,2-Dichloropropane this point 2 TPH by GC Cis-1,3-dichloropropene Cis-1,3-dichloropropene Trans-1,2-dichloroethene Gasoline RangeOrganics × Trichloroethene Dibromochloromethane Methylene chloride × Diesel RangeOrganics 5. Field collection procedure, handling and/or 1,1,2-Trichloroethane Oil Range Organics 1,1,2,2-Tetrachloroethane × preservation of this sample "Potable Water Supply Sampling Proceedure" (EPA Region 4 Other Tetrachloroethene Benzene Science and Ecosystem Support Division, Athens, GA, 5/28/2013) X Trans-1,3-dichloropropene Acrylonitrile 1.1.1-Trichloroethane 1,1,2-Trichloroethane × Bromoform Bromochloromethane 4-Methyl-2-pentanone 1,2-Dibromo-3-chloropropane Trichloroethene 6. Mode of transportation to lab Car Trichlorofluoromethane × 2-Hexanone 1,2-Dibromoethane × Tetrachloroethene X trans-1,4-Dichloro-2-butene Vinyl chloride × Toluene Methylene bromide 7. Sample sealed by PJM and TNH Benzene 1,1,2,2-Tetrachloroethane Methyl iodide 8. Date sample sealed 11/21/14 Ethylbenzene 1,1,1,2-Tetrachloroethane Toluene Chlorobenzene 9. Remarks × Ethyl benzene X 1,2,3-Trichloropropane o-Xylene × Styrene m-Xylene p-Xylene × o-Xylene ★ m-Xylene p-Xylene

RDA 1527

Inorganic Analysis



PROJECT NAME: Poplar Springs Landfill SNL 53-1062										Metals	Laboratory Number
STATION NUMBER: R-2	1000		WATE	RBODY	/ NA	ME:				aluminum, Al	16 200 4
STREAM MILE:			COUNTY:	Loudo	n				*	antimony, Sb	K00008198-005
DESCRIPTION: Residentia	l Well	9	-						*	arsenic, As	Chain of Custody and Supplemental Information
LATITUDE:			LONGITUDE:						*	barium, Ba	Only <u>one</u> chain of custody form is required per sample or point (if all collected at the same time)
Matrix: Water				Depth	:				*	beryllium, Be	
COLLECTED: DATE:	11/21/	14	T	IME /	20	6				boron, B	1. Collected By: PJM and TNH
SAMPLER'S FULL NAME (pr	rinted)	Patrick N	Julligan and Time						*	cadmium, Cd	Date 11/21/14 / Time /20 Co/
		-DSWM-KEI							*	calcium, Ca	Delivered to
IF PRIORITY, DATE NEEDED: BILLING CODE EN00004176								76	*	chromium, Cr	Date //-2/-// Time /530
SEND REPORT TO: Patrick I	Mulliga	an, 3711 Mide							*	cobalt, Co	2. Received by
* Env. Microbiology	*				200	CONTRACTOR DE	r General Inor	ganics:	*	copper, Cu	Date 1/21714 Time 1530
coliform, fecal*		ortho-phos						A	*	iron, Fe	Delivered to FR FX
coliform, total*		silica*								lithium, Li	Date 11/24/14 Time 1520
strep, fecal*	*	sulfate*	sch						*	lead, Pb	3. Received by
E. Coli*		turbidity*							*	magnesium, Mg	Date Time
Enterococcus*			erved, Nutrient						*	manganese, Mn	Delivered to
		COD*							*	mercury, Hg	Date Time
* General Inorganics	*	nitrogen, ar	nmonia						*	nickel, Ni	4. Received in Lab by
Not Preserved		nitrogen, N	O ₃ & NO ₂						*	potassium, K	Date Time
acidity as CaCO3*		nitrogen, to	tal Kjeldahl						*	selenium, Se	5. Received in Lab by
alkalinity as CaCO ₃ *	*	nitrogen, to							*	silver, Ag	Date Time
BOD, 5-day*		phosphate,								sodium, Na	6. Received in Lab by
CBOD, 5-day*										strontium, Sr	Date (1/2/14) Time 1/- 30
* chloride*		SPECIAL	PRESERVATIO	N					*	thallium, Tl	Logged in by
chromium, hexavalent		cyanide							*	vanadium, V	Date 11 71 1 Time 1608
color		oil and grea	se						*	zinc, Zn	(4 (1)
conductivity*		phenols, tot	al			Meta	Is Digestion typ	pe:		hardness, Ca as CaCO3*	
* fluoride* 32%		sulfide, tota	1*	1		Norm			X	hardness, total as CaCO3*	
MBAS*		TOC*				Disso	lved				Additional Information
nitrogen, nitrate*						TCLP)				
nitrogen, nitrite*						Other	:			Other Metals:	Others present at collection
pH											JTC, RA, RAB
residue, dissolved*		Asbestos									2. Other samples collected
residue, settleable*		bulk asbesto	os								2
residue, suspended*		other micro	scopic								Mode of transportation to lab
residue, total*											Car
* denotes analyses performed on	ly on w	vater									4. Cooler sealed by
			FIELD DE	TERM	IINA	TIOI	NS				PJM and TNH
Conductivity, (uhmos)			Chlorine, resid					Other Field	d Parai	meters:	5. Date cooler sealed
Dissolved Oxygen, (mg/L) Turbidity, (NTU				Janet Field						11/21/14	
Temperature, (°C) ORP, (mv)									6. Remarks		
pH Flow Rate											
1											



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K0000 & 198 - 00 5 Volatiles and Petroleum Hydrocarbons PROJECT/SITE NO. SNL 53-1062 PROJECT NAME Poplar Springs Landfill **Laboratory Number** STATION NUMBER R-2 HINES COUNTY Loudon DESCRIPTION Residential Well Chain of Custody and Supplemental Information STREAM MILE DEPTH MATRIX Water Only one chain of custody form is required per sample COLLECTED: DATE 11/21/14 TIME 12:66 set or point (if all collected at the same time) SAMPLER'S NAME (printed) Patrick Mulligan and Timothy Hill 1. Collected by PJP/TNH SAMPLING AGENCY TDEC-DSWM-KEFO BILLING CODE EN00004176 Date 11/21/14 Time 17:06 Delivered to Buox IF PRIORITY, DATE NEEDED SEND REPORT TO: Patrick Mulligan HILLIN Time 3711 Middlebrook Pike, Knoxville, TN 37921 Received by **CONTACT HAZARD** Date 1171711 Time TCL Volatiles - 6260A TCLP Volatiles Delivered to EDIO PIX NPDES Volatiles - 624 Chloromethane Benzene Date 11124114 Bromoform Time Bromodichloromethane Bromomethane Carbon tetrachloride Received by Carbon Tetrachloride Vinyl chloride Chlorobenzene Date Time Chlorobenzene Chloroethane Chloroform Delivered to Methylene chloride × 1,2-Dichloroethane Date Time Chloroethane Jul 2-Chloroethylvinyl ether X Acetone 1,1-Dichloroethane Received in Lab by Carbon disulfide Date 1 171/14 1520 Chloroform Methyl ethylketone Time Chloromethane 1.1-Dichloroethene Tetrachloroethene Logged in by un 1,1-Dichloroethane Time 100C Dibromochloromethane Trichloroethene Date 11 1,2-Dichlorobenzene Cis-1,2-dichloroethene Vinyl chloride 1.3-Dichlorobenzene Trans-1,2-dichloroethene BTEX - 8260A - UST Additional Information 1,2-Dichloroethane Approximate volume of sample 1.4-Dichlorobenzene X Benzene Dichlorodifluoromethane 40 or L X Chloroform Toluene 1,1-Dichloroethane 2-Butanone Ethyl benzene x 1,2-Dichloroethane 1.1.1-Trichloroethane o-Xylene 2. Nearest town or city Loudon, TN 3. Others present at collection JTC, RA, RAB 1,1-Dichloroethene Carbon tetrachloride m-Xylene Vinyl acetate p-Xylene Cis-1,2-dichloroethene Bromodichloromethane Methyl t-butyl ether 4. Number of other samples collected at same time at X Trans-1,2-dichloroethene 1,2-Dichloropropane Diisopropyl ether this point 2 1,2-Dichloropropane Cis-1,3-dichloropropene TPH by GC × Cis-1,3-dichloropropene Trans-1,2-dichloroethene x Trichloroethene Gasoline RangeOrganics Dibromochloromethane Diesel RangeOrganics 5. Field collection procedure, handling and/or Methylene chloride 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane Oil Range Organics preservation of this sample "Potable Water Supply Sampling Proceedure" (EPA Region 4 X × Benzene Other Science and Ecosystem Support Division, Athens, GA, 5/28/2013) Tetrachloroethene × Trans-1,3-dichloropropene Acrylonitrile 1,1,1-Trichloroethane X Bromoform Bromochloromethane 1,1,2-Trichloroethane Trichloroethene × 4-Methyl-2-pentanone 1,2-Dibromo-3-chloropropane 6. Mode of transportation to lab Car x 2-Hexanone X 1,2-Dibromoethane Trichlorofluoromethane Tetrachloroethene trans-1,4-Dichloro-2-butene Vinyl chloride 7. Sample sealed by PJM and TNH Benzene X Toluene Methylene bromide 8. Date sample sealed 11/21/14 1,1,2,2-Tetrachloroethane × Methyl iodide Ethylbenzene X Chlorobenzene X 1,1,1,2-Tetrachloroethane 9. Remarks Toluene X Ethyl benzene X 1,2,3-Trichloropropane o-Xylene × Styrene m-Xylene X o-Xylene p-Xylene m-Xylene x p-Xylene PH-3013 (rev 11/97) RDA 1527



			s Landfill SN				*	Metals		Laboratory Number	
ST	ATION NUMBER: R-3	4EM	BREE	WATEI	RBODY NA	AME:			aluminum	ı, Al	11 /
STI	REAM MILE:			COUNTY:	Loudon			*	antimony	Sb	K0000 8198-006
	SCRIPTION: Residential	Well						*	arsenic, A		Chain of Custody and Supplemental Information
	TITUDE:			LONGITUDE:				*	barium, B		Only <u>one</u> chain of custody form is required per samp or point (if all collected at the same time)
Ma	trix: Water				Depth:			*	beryllium	, Be	
CO	LLECTED: DATE:	1/21/	14	TI	ME		13:03		boron, B		1. Collected By: PJM and TNH
SAMPLER'S FULL NAME (printed) Patrick Mulligan and Timothy Hill								*	cadmium,	Cd	Date 11/21/14 Time 13: 63
SAMPLING AGENCY: TDEC-DSWM-KEFO								*	calcium,		Delivered to have ha Caple
	PRIORITY, DATE NEEDED		1		LLING CO	DDE	EN00004176	*	chromiun		Date 11-21-16/Times 1530 (
	SEND REPORT TO: Patrick Mulligan, 3711 Middlebrook Pike, Knoxville,							*	cobalt, Co		2. Received by
*	Env. Microbiology * Gen. Inorganics (con't) Other General Inorgan					General Inorgani	ics: *	copper, C		Date 11 2114 Time 1530	
	coliform, fecal*		ortho-phos			0	S. C. L. C.	*	iron, Fe		Delivered to SEX 84
	coliform, total*		silica*						lithium, L	i	Date 11 / 4414 Time 1520
	strep, fecal*	*		518				*	lead, Pb		3. Received by
	E. Coli*		furbidity*	76				*	magnesiu	m, Mg	Date Time
	Enterococcus*			served, Nutrient				*	manganes		Delivered to
			COD*					*	mercury,		Date Time
*	General Inorganics	*	nitrogen, ar	mmonia				*	nickel, Ni		4. Received in Lab by
	Not Preserved		nitrogen, N					*	potassium		Date Time
	acidity as CaCO ₃ *			tal Kjeldahl				*	selenium,	Se	5. Received in Lab by
	alkalinity as CaCO3*	*	nitrogen, total organic					*	silver, Ag		Date Time
	BOD, 5-day*		phosphate,						sodium, N		6. Received in Lab by
	CBOD, 5-day*								strontium		Date [1] 7/1/4 Time 1/7:3
非	chloride* /1%		SPECIAL	PRESERVATIO	N			*	thallium,		Logged in by
	chromium, hexavalent		cyanide					*	vanadium	, V	Date 11 21114 Time 1608
	color		oil and grea	ase				*	zinc, Zn		101111
	conductivity*		phenols, tot	tal		Metals	Digestion type:	1/1 To 44/92	hardness,	Ca as CaCO3*	
*	fluoride* Sel		sulfide, tota	al*	54	Normal		V	hardness,	total as CaCO3*	
	MBAS*		TOC*			Dissolv	red				Additional Information
	nitrogen, nitrate*					TCLP					
	nitrogen, nitrite*					Other:			Other M	etals:	Others present at collection
	pH										JTC, RA, RAB
	residue, dissolved*		Asbestos								Other samples collected
	residue, settleable*		bulk asbest	os							2
	residue, suspended*		other micro	scopic							Mode of transportation to lab
	residue, total*										Car
* de	enotes analyses performed only	on w	ater								4. Cooler sealed by
				FIELD DE	TERMIN	ATIONS	S				PJM and TNH
ſ	Conductivity, (uhmos)			Chlorine, resid				er Field Par	ameters:		5. Date cooler sealed
1	Dissolved Oxygen, (mg/L) Turbidity, (NTU)									11/21/14	
1	Temperature, (°C) ORP, (mv)									6. Remarks	
pH Flow Rate											



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Coooo 8198 -00 Torganic Analysis
Volatiles and Petroleum Hydrocarbons

	OJECT/SITE NO. SNL 53-10		PROJECT	NAN	IE Poplar Springs Landfill	Laboratory Number					
ST	ATION NUMBER R-4 HL	MPH	RE45 COUNTY	CONTRACTOR STATE							
DE	SCRIPTION Residential Well	a de la composição de l		on the	的复数经验的 医胸膜炎 医多种	Chain of Custody and Supplemental Information					
	REAM MILE		DEPTH	- 102	MATRIX Water	Only one chain of custody form is required per sample					
	LLECTED: DATE 11/21/14			W.fm 3.5	TIME 13:35	set or point (if all collected at the same time)					
	MPLER'S NAME (printed)	Patric	k Mulligan and Timothy Hill	17.112		1. Collected by PJP/TNH					
SA	MPLING AGENCY TDEC-DS	SWM.	KEFO BI	LLIN	G CODE EN00004176	Date 11/21/14 Time 13: 35					
	PRIORITY, DATE NEEDED	Temps			C CCD2 E1100004170	Delivered to fact (a X					
	ND REPORT TO: Patrick Mi	ılligar		(you likely)		Date //-7:-12/ Time /530					
170000			ok Pike, Knoxville, TN 37921	25/1/01/5							
CO	NTACT HAZARD	TCDI O	7 T T T T T T T T T T T T T T T T T T T			2. Received by Date 11 211 14 Time 1 2					
*	NPDES Volatiles - 624	Τ,	TCL Volatiles - 6260A	1 .	TCLP Volatiles	Delivered to TPO EX					
100000	Bromoform	44	A STATE OF THE STA	Same.	A DESCRIPTION OF THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.						
-		X	Chloromethane	-	Benzene	Date 11 2-4114 Time 1530					
-	Bromodichloromethane	X	Bromomethane	-	Carbon tetrachloride	3. Received by					
-	Carbon Tetrachloride	X	Vinyl chloride	-	Chlorobenzene	Date Time					
-	Chlorobenzene	X	Chloroethane	-	Chloroform	Delivered to					
	Chloroethane	X	Methylene chloride	-	1,2-Dichloroethane	Date Time 4. Received in Lab by					
_	2-Chloroethylvinyl ether	×	Acetone	-	1,1-Dichloroethane						
\vdash	Chloroform	X	Carbon disulfide	-	Methyl ethylketone	Date 1550					
_	Chloromethane	X	1,1-Dichloroethene	-	Tetrachloroethene	Logged in by					
-	Dibromochloromethane 1,2-Dichlorobenzene	X	1,1-Dichloroethane Cis-1,2-dichloroethene	-	Trichloroethene Vinyl chloride	Date 11 114 Time 1608					
×		X		724-33		Additional information					
x	1,3-Dichlorobenzene 1,4-Dichlorobenzene	X	Trans-1,2-dichloroethene 1,2-Dichloroethane	18/2/65	BTEX - 8260A - UST Benzene	Additional Information					
X	Dichlorodifluoromethane	×	Chloroform	-	Toluene	Approximate volume of sample					
-	1,1-Dichloroethane	×	2-Butanone								
-		1 c	1,1,1-Trichloroethane	-	Ethyl benzene	O Name of the Control					
×	1,2-Dichloroethane	_	Carbon tetrachloride	-	o-Xylene m-Xylene	2. Nearest town or city Loudon, TN 3. Others present at collection JTC, RA, RAB					
-		X		-		3. Others present at collection 31C, RA, RAB					
-	Cis-1,2-dichloroethene	-	Vinyl acetate Bromodichloromethane	-	p-Xylene	A Number of allowing the collected of some time of					
-	Trans-1,2-dichloroethene	X		-	Methyl t-butyl ether	Number of other samples collected at same time at					
-	1,2-Dichloropropane Cis-1,3-dichloropropene	X	1,2-Dichloropropane		Diisopropyl ether TPH by GC	this point 2					
\vdash		X	Cis-1,3-dichloropropene Trichloroethene	Hall	Gasoline RangeOrganics						
_	Trans-1,2-dichloroethene	X	Dibromochloromethane	-		E First and the state of the st					
-	Methylene chloride	X		-	Diesel RangeOrganics	5. Field collection procedure, handling and/or					
_	1,1,2,2-Tetrachloroethane	X	1,1,2-Trichloroethane	37.00	Oil Range Organics	preservation of this sample "Potable Water Supply Sampling Proceedure" (EPA Region 4					
-	Tetrachloroethene	X	Benzene	1	Other	Science and Ecosystem Support Division, Athens, GA, 5/28/2013)					
-	1,1,1-Trichloroethane	X	Trans-1,3-dichloropropene	X	Acrylonitrile						
_	1,1,2-Trichloroethane	X	Bromoform		Bromochloromethane						
1.	Trichloroethene	X	4-Methyl-2-pentanone	X	1,2-Dibromo-3-chloropropane	6. Mode of transportation to lab Car					
X	Trichlorofluoromethane	X	2-Hexanone		1,2-Dibromoethane						
_	Vinyl chloride	X	Tetrachloroethene	X							
_	Benzene	X	Toluene	X	Methylene bromide	7. Sample sealed by PJM and TNH					
_	Ethylbenzene	X	1,1,2,2-Tetrachloroethane	X		8. Date sample sealed 11/21/14					
	Toluene	X	Chlorobenzene		1,1,1,2-Tetrachloroethane	9. Remarks					
_	o-Xylene	X	Ethyl benzene	X	1,2,3-Trichloropropane						
	m-Xylene	X	Styrene								
	p-Xylene	X	o-Xylene	_							
		X	m-Xylene								
		X	p-Xylene								
PH-3	013 (rev 11/97)					RDA 1527					

State of Tennessee – Environmental Laboratories PLEASE PRINT LEGIBLY



PROJECT NAME: Poplar Springs Landfill SNL 53-1062								*	Metals	Laboratory Number	
STATION NUMBER: R-5 Duplicate 4 HAMPHREY WATERBODY NAME:							aluminum, Al	12 0.00 0			
ST	REAM MILE:			COUNTY:	Loudo	on			*	antimony, Sb	K0000 S198-008
DESCRIPTION: Residential Well-duplicate sample							*	arsenic, As	Chain of Custody and Supplemental Information		
LA	TITUDE:			LONGITUDE	:				*	barium, Ba	Only one chain of custody form is required per sample or point (if all collected at the same time)
Ma	trix: Water				Depth	ı:			*	beryllium, Be	
CO	LLECTED: DATE: 1	1/21/	14	П	IME		13:46	,		boron, B	1. Collected By: PJM and TNH
SA	MPLER'S FULL NAME (pri	nted)	Patrick N	Aulligan and Tim	othy Hil	1			*	cadmium, Cd	Date 11/21/14 Time
SAMPLING AGENCY: TDEC-DSWM-KEFO							*	calcium, Ca	Delivered to hack he was / Lab		
IF PRIORITY, DATE NEEDED: BILLING CODE EN00004176							*	chromium, Cr	Date 11/7/14 Time 5:30		
SEND REPORT TO: Patrick Mulligan, 3711 Middlebrook Pike, Knoxville, TN 37921							本	cobalt, Co	2. Received by		
*	Env. Microbiology	*	A STATE OF THE PARTY OF THE PAR			AT THE REAL PROPERTY.	ther General	Inorganics:	*	copper, Cu	Date 11 71 14 Time 1 120
-	coliform, fecal*		ortho-phos				anor concrar.	not games.	*	iron, Fe	Delivered to CENTRY
	coliform, total*		silica*							lithium, Li	Date 11/24/14 Time , 620
	strep, fecal*	*	sulfate*	300					*	lead, Pb	3. Received by
	E. Coli*		turbidity*						*	magnesium, Mg	Date Time
	Enterococcus*			erved, Nutrient					*	manganese, Mn	Delivered to
			COD*						*	mercury, Hg	Date Time
Ħ	General Inorganics	*	nitrogen, ar	nmonia					*	nickel, Ni	4. Received in Lab by
	Not Preserved		nitrogen, N	O ₃ & NO ₂					*	potassium, K	Date Time
	acidity as CaCO ₃ *		nitrogen, to	tal Kjeldahl					*	selenium, Se	5. Received in Lab by
	alkalinity as CaCO3*	*	nitrogen, to						*	silver, Ag	Date Time
	BOD, 5-day*		phosphate,							sodium, Na	6. Received in Lab by
	CBOD, 5-day*									strontium, Sr	Date 11/2/1/4 Time 4/20
*	chloride* Scal		SPECIAL	PRESERVATI	ON				*	thallium, Tl	Logged in by
	chromium, hexavalent							*	vanadium, V	Date 11/21/14 Time 1608	
	color	oil and grease					*	zinc, Zn	10111100		
	conductivity*		phenols, tot	tal		M	Metals Digestion type:			hardness, Ca as CaCO3*	
*	fluoride* Sel		sulfide, tota	ıl*		N	ormal		X	hardness, total as CaCO ₃ *	
	MBAS*		TOC*				issolved				Additional Information
	nitrogen, nitrate*					Te	CLP				
	nitrogen, nitrite*					0	ther:			Other Metals:	Others present at collection
	pH										JTC, RA, RAB
	residue, dissolved*		Asbestos	Washington and State of the Sta							2. Other samples collected
	residue, settleable*		bulk asbest	os							2
	residue, suspended*		other micro	scopic							3. Mode of transportation to lab
	residue, total*										Car
* d	enotes analyses performed only	on w	ater								4. Cooler sealed by
		FIELD DETERMINAT			MINAT	ATIONS				PJM and TNH	
	Conductivity, (uhmos)				Chlorine, residual			Other Field		meters:	5. Date cooler sealed
	Dissolved Oxygen, (mg/L)		Turbidity, (1		TU))			Control of the Contro		11/21/14
	Temperature, (°C)			ORP, (mv)							6. Remarks
	pH			Flow Rate							



Koobo 8198 - 008 Organic Analysis
Volatiles and Petroleum Hydrocarbons PLEASE PRINT LEGIBLY PROJECT/SITE NO. SNL 53-1062 PROJECT NAME Poplar Springs Landfill STATION NUMBER R-# Duplicate 4 Handlers COUNTY Loudon DESCRIPTION Residential Well - duplicate sample Chain of Custody and Supplemental Information STREAM MILE DEPTH MATRIX Water Only one chain of custody form is required per sample COLLECTED: DATE 11/21/14 set or point (if all collected at the same time) TIME 13:40 SAMPLER'S NAME (printed) Patrick Mulligan and Timothy Hill 1. Collected by PJP/TNH SAMPLING AGENCY TDEC-DSWM-KEFO BILLING CODE EN00004176 Time 13: 40 Date 11/21/14 IF PRIORITY, DATE NEEDED Delivered to Snoxulla 8011000 SEND REPORT TO: Patrick Mulligan Time 3711 Middlebrook Pike, Knoxville, TN 37921 Received by CONTACT HAZARD Time Date 1// NPDES Volatiles - 624 TCL Volatiles - 6260A TCLP Volatiles Delivered to Date 11/24/14 Bromoform × Chloromethane Benzene Time Bromodichloromethane × Bromomethane Carbon tetrachloride Received by 3. Carbon Tetrachloride Vinyl chloride Chlorobenzene Date Time Chlorobenzene Chloroethane Chloroform Delivered to Chloroethane × Methylene chloride 1.2-Dichloroethane Time Date 2-Chloroethylvinyl ether 1,1-Dichloroethane Received in Lab by Acetone Chloroform × Carbon disulfide Methyl ethylketone Date 11 Time Chloromethane 1,1-Dichloroethene Tetrachloroethene Logged in by Dibromochloromethane 1.1-Dichloroethane Trichloroethene Date 1,2-Dichlorobenzene Cis-1,2-dichloroethene Vinyl chloride Additional Information 1.3-Dichlorobenzene Trans-1,2-dichloroethene BTEX - 8260A - UST 1. Approximate volume of sample 1,4-Dichlorobenzene 1,2-Dichloroethane Benzene × Chloroform Toluene Dichlorodifluoromethane 1,1-Dichloroethane × Ethyl benzene 2-Butanone 1,2-Dichloroethane 1,1,1-Trichloroethane o-Xylene 2. Nearest town or city Loudon, TN 3. Others present at collection JTC, RA, RAB 1.1-Dichloroethene Carbon tetrachloride m-Xylene Cis-1,2-dichloroethene Vinyl acetate p-Xylene Bromodichloromethane Trans-1,2-dichloroethene Methyl t-butyl ether 4. Number of other samples collected at same time at 1,2-Dichloropropane 1,2-Dichloropropane Diisopropyl ether this point 2 Cis-1,3-dichloropropene Cis-1,3-dichloropropene TPH by GC Trans-1,2-dichloroethene Trichloroethene Gasoline RangeOrganics Diesel Range Organics 5. Field collection procedure, handling and/or Methylene chloride Dibromochloromethane preservation of this sample "Potable Water Supply Sampling Proceedure" (EPA Region 4 1,1,2,2-Tetrachloroethane × 1,1,2-Trichloroethane Oil Range Organics × Other Science and Ecosystem Support Division, Athens, GA, 5/28/2013) Tetrachloroethene Benzene × 1,1,1-Trichloroethane Trans-1,3-dichloropropene Acrylonitrile 1.1.2-Trichloroethane X Bromoform Bromochloromethane Trichloroethene × 4-Methyl-2-pentanone 1,2-Dibromo-3-chloropropane 6. Mode of transportation to lab Car 2-Hexanone 1,2-Dibromoethane Trichlorofluoromethane × × × trans-1.4-Dichloro-2-butene Vinyl chloride Tetrachloroethene Methylene bromide 7. Sample sealed by PJM and TNH X Toluene Benzene × Methyl iodide 8. Date sample sealed 11/21/14 Ethylbenzene 1,1,2,2-Tetrachloroethane × 1,1,1,2-Tetrachloroethane 9. Remarks Toluene Chlorobenzene × Ethyl benzene 1,2,3-Trichloropropane o-Xylene m-Xylene X Styrene p-Xylene o-Xylene

X

m-Xylene x p-Xylene

Knoxville Environmental Laboratories: TN Dept. of Health Sample Non-Conformance Form

Sample #: 60008198	16									
Date: 11/21/2014										
Evaluated by:	€									
Customer: TDEC Solld Waste Management										
Non-Conformance type:										
Improper container type/broken bottle/cap not intact Temperature control out of range/preservation problem Sample field form missing Chain of custody section not filled in properly or incomplete Test parameters past holding time Sample login clarification needed Other (please specify)										
Comments & Clarifications:										
(i) No Billing code of "4176" in starting. (i) No Routine Soughes collected for Chloride, Fluoride X Sulfate (3) No Potal Hardness test requested.										
Login Instructions: Confact Sangler Evaluator's Signature	- Jim									
	1630									
Client contact: Partrick Mulligan Comments:										
Comments.										

RE: Samples collected on 11/21/14

Patrick Mulligan

Sent: Monday, November 24, 2014 9:38 AM

To: Jin Liu

Hi Jin. This transmission confirms our understanding as stated in your email. Have a good day. Patrick

From: Jin Liu

Sent: Monday, November 24, 2014 9:13 AM

To: Patrick Mulligan

Subject: FW: Samples collected on 11/21/14

From: Jin Liu

Sent: Monday, November 24, 2014 9:12 AM

To: 'patrick.Mullingan@tn.gov'

Cc: Ken Hitchman

Subject: Samples collected on 11/21/14

Hi, Patrick,

I am waiting for your e-mail to confirm the followings:

- 1, Billing code on you Request Form is" EN00004176", but no such code in StarLims, "EN00004173" is the closest one I selected;
- 2, I deleted Chloride, Fluoride and Sulfate on your Request Forms since no Routine samples collected;
- 3, I marked Total Hardness as CaCo3 as you marked metals.

Please let me know before I shipping samples to NCL.

Thanks

Jin

I have gone in StarLIMS and added EN00004176 under TDEC-SWM billing codes. Please edit the folder on your end and let Cathie Ayers know.

Thanks!!

From: Jin Liu

Sent: Monday, November 24, 2014 1:06 PM

To: Bob Read

Cc: Patrick Mulligan; Ken Hitchman

Subject: FW: Speedchart Number for Lab on samples k8198

Dr. Read,

KRL shipped samples from TDEC solid Waste Management collected on 11/21/14. The billing code on their request Form is EN00004176, but no this code in StarLims. I had EN00004173 selected as closest number in StarLims, and asked Patrick Mulligan of SWM to confirm.

The following is e-mail from SWM, please let me know what I need to do on this billing code issue.

Thanks