EXHIBIT 1

Landfill	Maximum Daily Volume (MDV)/ tons per day	Notes	Type of Variance		
			Leachate Recirculation	Waiver of the minimum open face requirement	Alternative Daily Cover
Stone's Throw Variances (selected list)	1,500 tons per day		Yes	Yes	Yes
Arrowhead Landfill	15,000 tons per day		No	Yes	No
Big Sky Environmental, LLC Solid Waste Facility	25,000 tons per day		No	No	Yes
Black Warrior Solid Waste Facility	1,500 tons per day		No	No	Yes
Brundidge Landfill LLC	7,500 tons per day		No	No	No
Cedar Hill Landfill	600 tons per day		Yes	No	Yes
Chastang Sanitary Landfill	1,725 tons per day		Yes	Yes	No
Choctaw County Regional Landfill	1,500 tons per day		No	No	Yes
City of Decatur-Morgan County Sanitary Landfill	1,500 tons per day		Yes	Yes	Yes
City of Dothan Sanitary Landfill	400 tons per day	Permit rescinded April 24,2018	No	Yes	No
Coffee County Sanitary Landfill	1,200 tons per day		No	No	No
Cullman Environmental Waste Management Center	400 tons per day		Yes	Yes	Yes
Eastern Area Landfill	1,200 tons per day		No	No	Yes
Highway 70 Landfill (Shelby County)	1,500 tons per day		No	Yes	No
Huntsville Landfill	725 tons per day	Permit Expiration Notice sent on September 26, 2016	No	Yes	Yes
Jefferson County Landfill No. 1	1,500 tons per day		No	Yes	Yes
Jefferson County Landfill No. 2	1,300 tons per day		No	No	Yes
Magnolia Sanitary Landfill	1,500 tons per day		Yes	Yes	No
Morris Farm Sanitary Landfill	1,500 tons per day		No	Yes	Yes
New Georgia Landfill	1,200 tons per day		No	Yes	Yes
Noble Hill Landfill	3,000 tons per day		No	Yes	Yes
North Montgomery Landfill	MSW: 1165 tons per day; C/D: 400 tons per day		No	No	Yes
Pine View Sanitary Landfill	1,500 tons per day		No	Yes	Yes
Salem Waste Disposal Center	1,500 tons per day		No	Yes	Yes
Sand Valley Landfill	1,500 tons per day		No	Yes	Yes
Scottsboro Landfill	350 tons per day		Yes	Yes	Yes
Seven Mile Post Road MSW Landfill	300 tons per day		No	No	No
Star Ridge Landfill	1,500 tons per day		Yes	Yes	Yes
Three Corners Regional Landfill	1,500 tons per day		No	No	Yes
Timberlands Sanitary Landfill	2,500 tons per day		No	No	No
Turkey Trot Landfill	4,000 tons per day		Yes	No	No
Willow Ridge Landfill	1,500 tons per day	Closed April 12, 2016	No	No	No

Sidenotes
Source: permit variances were compiled from the most recent landfill permits available on the ADEM e-file system.

EXHIBIT 2

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1 mile Ring Centered at 32.514920,-85.827300, ALABAMA, EPA Region 4 (Population: 95)

Source of EJ Screen Demographic Data: U.S. Census Bureau, American Community Survey (ACS) 2012-2016

#	Category	Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA R	USA Avg.	%ile in USA
23	Demographic	Demographic Index	67%	37%	87	38%	86	36%	87
24	Demographic	Minority Population	73%	34%	85	38%	83	38%	80
25	Demographic	Low Income Population	61%	39%	85	38%	85	34%	87
26	Demographic	Linguistically Isolated Population	0%	1%	71	3%	50	4%	44
27	Demographic	Population with Less Than High School Education	24%	15%	81	14%	83	13%	83
28	Demographic	Population under Age 5	16%	6%	98	6%	98	6%	98
29	Demographic	Population over Age 64	9%	15%	19	16%	26	14%	30

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EXHIBIT 3

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The Impact of Landfills on the Value of Residential Properties in Alabama

Technical Report Prepared for
Earthjustice

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October, 2018

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Executive Abstract

There is a common consensus, based on empirical evidence, among scientists and practitioners in Real Estate Economics and Finance, an applied field of economics, to consider the presence of landfills as a negative externality on the market for residential properties. This report analyzes the potential impact of landfill operations on the housing market in Alabama using cross-sectional aggregate data at the census-tract level for the year 2016 that are publicly available at the U.S. Census Bureau. Although the analysis may suffer from data aggregation and self-reporting bias, it is undeniable that households in Alabama perceive landfill operations as a disamenity. A counterfactual analysis, based on an endogenous regime switching hedonic model, finds empirical evidence (99% confidence) that properties located in census tracts where landfills are present could depreciate by approximately 28% compared to the counterfactual case in the absence of these facilities. From the conclusion of the analysis, it is extremely likely that the presence of sizeable municipal disposal facilities processing more than 1,000 metric tons daily devalues properties located within three miles. For those properties, my recommendation is to conduct a higher resolution hedonic study based on disaggregated data that use real estate taxes as a proxy for housing transactions if housing transaction data are not available. Alternatively, an independent local real estate appraiser should be able to assess the impact of the landfill externality.

enclosures:

(*i*) Affuso, E. and Lahtinen, K.D., 2018. Social media sentiment and market behavior. *Empirical Economics*, pp.1-23;
(*ii*) Dr. Ermanno Affuso's Vita.

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1

Introduction

The management and operation of landfills have been associated with a potential negative externality on the well-being of surrounding communities. A conventional method used to assess whether and the extent to which a landfill affects the welfare of citizens living in its proximity is to study the relationship between landfill proximity and property value. The hedonic pricing method (Kain and Quigley 1970[11]; Rosen 1974 [17]) is a standard procedure that is used to directly assess the value of environmental (dis)amenities based on consumers' revealed preferences. In fact, when a consumer purchases a property (s)he is buying a bundle of goods that includes housing attributes, neighborhood, and environmental characteristics, which include the environmental quality of areas that may be affected by the presence of landfills. The idea behind the hedonic pricing method is that of using the housing market as a surrogate market in an attempt to measure the marginal value of environmental quality.

There is an extensive body of literature, dating back to Havlicek, Richardson and Davies (1971)[7], that attempts to assess the impact of landfill location on the value of nearby properties. From one side, studies like the one previously mentioned have found a negative impact of landfills on property values. In fact, Havlicek *et al.* (1971) argue that the value of properties surrounding four landfills in the area of Fort Wayne, Indiana, purchased between 1962 and 1970 appreciates for each linear foot further away from the landfill and for each degree away from downwind. Along the same line, Nelson *et al.* (1992)[14] estimated a negative impact of landfill proximity on residential properties in Minnesota that was potentially between 12% and 6% per mile depending on the property's

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location in relation to the landfill's boundaries. Hite *et al.* (2001)[10] argue that even closed landfills may have an impact on housing value. The authors accounted for landfills' life expectancy and type (closed vs. open) and estimated a potential depreciation between 17% and 20% for properties located within 3.25 miles distance of four major landfills in Ohio.

Farber (1998)[5] has conducted an extensive survey on the impact of undesirable facilities on property values. The author found a consensus among studies with evidence that a landfill is perceived as a negative externality with a different magnitude of impact (between $3,000 and $15,000 per mile in 1993 US$) that depends on the nature of the processed wastes. There are also other studies that found either positive or no impact of landfills on property values. These studies include Gamble *et al.* 1982[6]; Zeiss and Atwater 1989[19]; and Bouvier *et al.* 2000[3]. However, Ready (2010)[16] points out that the conclusions of the previous studies are drawn from inferential analysis based on small samples of housing sales. Therefore, it is very likely that the previous studies suffer from what we call in Econometrics "micronumerosity", with consequences that span from the lack of estimation precision to the high likelihood of committing type 1 error[1]. The same author conducted a metanalysis on the impact of the landfill on property values with interesting findings: the volume of processed wastes matters. Landfills that process over 500 tons/day of wastes are very likely to depreciate nearby properties by 12.9% on average with a gradient of 5.9% per mile. Landfills that process lower volumes depreciate surrounding properties by approximately 2.5% (with a gradient of 1.2% per mile). Also, according to that study, the impact of the landfill vanishes for properties located beyond three miles from the closest facility.

The purpose of this report is to investigate the potential social cost, capitalized on residential property value, of the Stone's Throw Landfill located at 1303 Washington Blvd, Tallassee, Alabama (LON -85.829491, LAT 32.515753), a municipal waste disposal facility with one of the largest processing volumes in the state of Alabama – over 1,000 metric tons of wastes per day[2], well over the 500 ton per day threshold that Ready (2010) found to have the highest

[1] In inferential statistics, type 1 errors consist of "false positive" findings (rejection of a true null hypotheses).

[2] The landfill currently accepts an average volume of 1.050 tons/daily – source: `https://www.advanceddisposal.com/al/tallassee/stones-throw-landfill` – last accessed on 10/02/2018

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likelihood of negative impacts on nearby property values. This author initially attempted to estimate a hedonic model based on sales that occurred in the area of interest using multiple listing service (MLS) housing sales data obtained from the *Montgomery Area Association of Realtors* for sales that occurred between 2000 and 2016 in Tallapoosa County. Unfortunately, that available data consisted only of 178 transactions with the closest sold property being 10.04 miles far from the landfill. As expected, a hedonic model based on such a small sample (with properties being located beyond 10 miles from the landfill) resulted in parameter estimates that were not statistically significant, with an average property depreciation of US$ 7.15/mile in 2016 constant dollars (standard error of ± US$ 10.99/mile). It is possible that the landfill has made nearby properties unattractive to the housing market, resulting in this lack of housing transactions in close proximity to the landfill over the 16-year period. Thus, the negative impacts of the landfill themselves may have made analyzing the impacts of the landfill using this housing transaction method near impossible.

Given the lack of reliable data on recent housing transactions within three miles from the landfill, the author instead chose to conduct a more aggregate-level analysis for the entire state of Alabama. The goal of this analysis is to compare the average median value of properties that are within a census tract containing one or more landfill with those that fall within a census tract without a facility. The data used in this report are aggregate cross-sectional data (for the year 2016) on property values, housing attributes and other socioeconomic and demographic characteristics at the census tract level that are publicly available from the U.S. Census Bureau. The econometric analysis is based on an endogenous regime switching hedonic model (Heckman 1974[8]; Lee 1978[12]). In addition to this statewide analysis, the author conducted an analysis comparing the median housing price in the Stone's Throw Landfill census tract with the median housing price in the most socioeconomically and demographically similar census tract in Alabama without a landfill. In the next chapter, I will discuss in some details, data and econometric model used for the analysis.

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2

Data and Econometric Model

As previously mentioned, cross-sectional data for the year 2016 on property values and attributes, demographic and socioeconomic characteristics are available from the U.S. Census Bureau, American Community Survey (ACS)[1]. This dataset has been merged with a publicly available U.S. Department of Homeland Security geospatial dataset on the geographic locations of 120 nonhazardous solid waste landfills in Alabama[2]. I should point out that the outcome (variable) of interest, the median property value of occupied housing unit per census tract, is an estimate of the value of *both* the house and the lot, as self-reported by the survey's respondent if their property were for sale. Since the outcome variable is not an observed transaction, the entire analysis is based on a "stated preference" model (rather than revealed preference) that suffers from similar drawbacks associated with contingent valuation models. In other words, survey respondents may tend to overvalue their properties, possibly resulting in self-report bias. However, Arrow *et al.* (1993)[2] suggest that stated preferences models like contingent valuations are adequate tools to assess the analysis of environmental externalities if surveys are based on a reliable basis. Paul Portney (1994: p. 16)[15], writing about the contingent valuation debate (analysis based on stated preferences versus revealed preferences) concludes:

> "Whether the economics profession likes it or not, it seems inevitable

[1] `https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml` – last accessed on 09/27/2018.

[2] `https://hifld-geoplatform.opendata.arcgis.com/datasets/solid-waste-landfill-facilities` – last accessed on 09/27/2018.

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> to me that contingent valuation methods are going to play a role in public policy formulation. Both regulatory agencies and governmental offices responsible for natural resource damage assessment are making increasing use of it in their work. This has now been reinforced by the Department of the Interior and NOAA-proposed regulations sanctioning the use of the contingent valuation method. Surely, it is better for economists to be involved at all stages of the debate about the contingent valuation method, than to stand by while others dictate the way this tool will be used."

Also, McLean and Mundy (1998)[13] argue that contingent valuation analyses are widely accepted as real estate appraisal to assess the value of contaminated properties when historical or recent transactions are unavailable. Therefore, since contingent valuation models are based on stated preference, i.e., self-reported willingness to pay or willingness to accept compensation for damages, I argue that using the previously defined median property value, as the owner's self-assessment of the value of his/her property, would be like using a measure of willingness-to-sell. This measure would encapsulate the willingness-to-accept a compensation for potential externalities, thereby still acceptable in the absence of revealed preference transactions.

Figure 2.1 illustrates the geographic location of the landfills and the census tracts used to conduct the analysis whereas Table 2.1 provides a statistical summary of the variables used to design the model.

TABLE 2.1
DESCRIPTIVE STATISTICS (PER CENSUS TRACT)

Variable	Description	Mean	St. Dev.
D*	1 if the census tract contains or is within 2 miles from a landfill	364	15.77
MEDIANVALUE	Median Property Value (2016 US$)	126,319.34	73,935.6
POPDENSITY	Inhabitants/sq. mile	1,005.06	1,271.99
POPBLACK	Number of African American inhabitants	1,094.35	1,069.78

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Variable	Description	Mean	St. Dev.
POPWHITE	Number of Caucasian inhabitants	2,844.93	2,107.65
MEDINC	Median Income (2016 US$)	44,272.72	20,188.35
HSDIPLOMA	Number of people with high school diploma	709.45	397.04
ASSOCDEG	Number of people with associate degree	221.12	155.22
BACHDEG	Number of people with bachelor's degree	421.33	437.38
AWATER	Area covered by water (sq. Miles)	0.98	2.88
R1	Number of housing units with 1 room	20.68	39.79
R2	Number of housing units with 2 rooms	23.35	42.76
R3	Number of housing units with 3 rooms	106.61	126.28
R4	Number of housing units with 4 rooms	277.64	214.11
R5	Number of housing units with 5 rooms	434.77	239.54
R6PLUS	Number of housing units with 6 or more rooms	1,025.14	603.28
VACHUNITS	Number of vacant housing units	304.72	342.75
MOBHUNITS	Number of mobile homes	252.69	282.98
HUNITSRENT	Number of rented occupied housing units	441.15	366.21
HAGELT3Y	Number of housing units that are less than 3 years old	6.77	17.27
HAGE4T6Y	Number of housing units between 4 and 6 years old	53.08	96.02

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Variable	Description	Mean	St. Dev.
HAGE7T17Y	Number of housing units between 7 and 17 years old	311.13	394.10
HAGE18T27Y	Number of housing units between 18 and 27 years old	345.02	301.90
HAGE28T37Y	Number of housing units between 28 and 37 years old	278.95	216.40
HAGE38T47Y	Number of housing units between 38 and 47 years old	320.2	209.48
HAGE48T57Y	Number of housing units between 48 and 57 years old	217.51	151.80
HAGE58T67Y	Number of housing units between 58 and 67 years old	169.68	151.85
HAGE68T77Y	Number of housing units between 68 and 77 years old	81.76	82.62
HAGEGT78Y	Number of housing units older than 78 years	104.11	128.70

Note: *Binary Variable. Mean and Standard Deviation are computed for the binomial distribution.

2.1 Econometric Model

2.1.1 Statewide Endogenous Regime Switching Hedonic Model

The endogenous regime switching model attempts to include a latent process D*, i.e., the consumer's utility associated with the locational choice of buying a property in a census tract where a landfill is located or whose border is less than two miles from a landfill, compared to the utility of buying property in a census tract with no landfill inside the tract or within two miles. The choice of the two miles thresholds is a safety choice based on the conclusions of Ready (2010)[16] who finds evidence of vanishing average impact of landfill beyond the three miles radius. Therefore, if such a latent process exists, then

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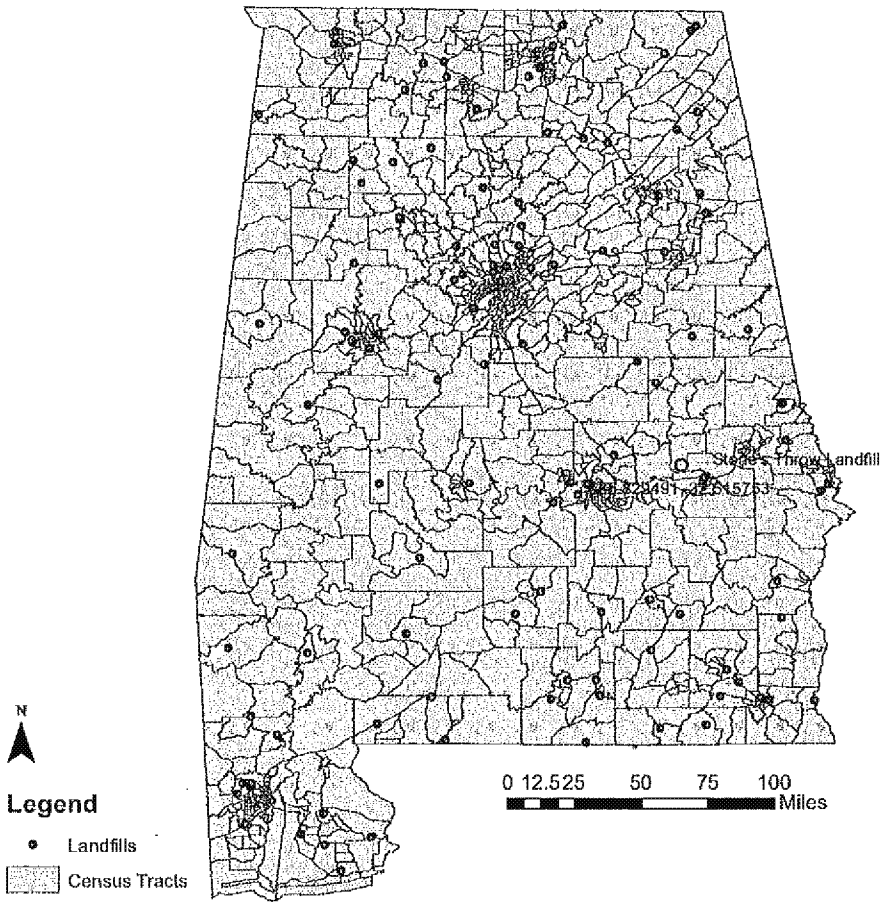

Figure 2.1: Spatial Distribution of Landfills.

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$$D_i^\star = z_i'\gamma + u_i \text{ with } \begin{cases} D_i = 1 \text{ if } D_i^\star > 0 \\ D_i = 0 \text{ if } D_i^\star < 0 \end{cases} \tag{2.1}$$

where z_i' is a row vector of exogenous variables that could explain the choice of a homeowner to buy the property in the census tract with the presence of a landfill if D_i=1, or the census tract without a landfill if D_i=0. The exogenous factors include population density (POPDENSITY), size of the African American population (POPBLACK), size of the Caucasian population (POPWHITE), median household income (MEDINC), total number of housing units (HUNITS), number of mobile homes (MOBHUNITS), number of vacant housing units (VACHUNITS) and area covered by water (AWATER).

The discrete choice equation (2.1) – probit – is simultaneously estimated with the following endogenous switching equations to model the median property prices that face two regimes: (D1) median price of property located in a census tract containing (or less than two miles from) one or more landfills; and (D0) median price of properties located in a census tract that is more than two miles from a landfill. Therefore, the hedonic model that accounts for the two regimes can be written as:

$$ln(y)_{1i} = ln(x)_{1i}'\beta_1 + \varepsilon_{1i} \text{ if } D_i^\star > 0\,(D_i = 1) \tag{2.2}$$

$$ln(y)_{0i} = ln(x)_{0i}'\beta_0 + \varepsilon_{0i} \text{ if } D_i^\star < 0\,(D_i = 0) \tag{2.3}$$

where y_i is the median price of the property in logarithmic form in the two regimes; x_{1i}' and x_{0i}' are row vectors of housing attributes, economic, demographic and environmental characteristics of the census tract i that may have an impact on the median price of the property in the two regimes. Those factors (all in logarithmic form) include: size of the African American population (POPBLACK); size of the Caucasian population (POPWHITE); median household income (MEDINC); population with high school diploma (HSDIPLOMA); population with associate degree (ASSOCDEG); population with bachelor's degree (BACHDEG); area covered by water (AWATER) that may explain the value of lake- and riverfront properties; number of housing units with 1 room (R1); number of housing units with 2 rooms (R2); number of housing units with 3 rooms (R3); number of housing units with 4 rooms (R4);

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number of housing units with 5 rooms (R5); number of housing units with 6 or more rooms (R6PLUS); number of vacant housing units (VACHUNITS); number of mobile homes (MOBHUNITS); number of occupied rented units (HUNITSRENT); number of properties less than three years old (HAGELT3Y); number of properties between four and six years old (HAGE4T6Y); number of properties between seven and 17 years old (HAGE7T17Y); number of properties between 18 and 27 years old (HAGE18T27Y); number of properties between 28 and 37 years old (HAGE28T37Y); number of properties between 38 and 47 years old (HAGE38T47Y); number of properties between 48 and 57 years old (HAGE48T57Y); number of properties between 58 and 67 years old (HAGE58T67Y); number of properties between 68 and 77 years old (HAGE68-T77Y); number of properties older than 78 years (HAGEGT78Y). The model is efficiently estimated by using an algorithm of nonlinear unconstrained optimization that maximizes a Full Information Maximum Likelihood (FIML) function as in Affuso and Lahtinen (2018)[1] (attached hereto).

The endogenous switching model makes possible a counterfactual analysis that attempts to estimate the capitalization of a landfill in the median price of a property (Heckman, 2001)[9]. Such an analysis attempts to estimate what the average median value of a property that is located in a census tract where a landfill is present could have been assuming the counterfactual case that the same property would have been located in a "clean" census tract (i.e., without a landfill). Along the same line, the analysis attempts to estimate the possible average median value of a property located in a "clean" census tract in the counterfactual instance that would place the property in a census tract that contains (or is less than two miles from) a landfill. In addition, one of the advantages of using the endogenous regime switching model compared to other similar non-parametric methods (such as propensity score matching) is that it allows computing heterogeneity effects, i.e., the impact of other unobservable factors that could have an impact on the median property value besides the landfill (Winship and Morgan, 1999[18]; Carter and Milon, 2005[4]). The statistical derivation of the heterogeneity effects as well as the statistical properties of the endogenous switching regime model and derivation of the FIML function are available in Affuso and Lahtinen (2018)[1].

Finally, a sensitivity analysis relaxes the assumption that census tracts whose border is less than two miles from the closest landfill are affected by

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the facility.

2.1.2 Census Tract-to-Census Tract Comparison

To assess whether high volume waste processing landfills such as Stone's Throw Landfill have an impact on property values, the author conducted a comparison between the census tract where this facility is located (# 962700) with a "clean" census tract that has similar demographic, socioeconomic and environmental characteristics – but no landfill. The comparison census tract is selected by minimizing the Mahalanobis distance, a measure of dissimilarity between two random vectors. The Mahalanobis distance is calculated using the following 11 census tract factors: number of housing units (HUNITS), population density (POPDENSITY), size of the Caucasian population (POPWHITE), size of the African American population (POPBLACK), median income (MEDINC), unemployment rate (URATE), poverty rate (POVRATE), number of households (HH), total population (POP), area covered by water in sq. Miles (AWATER), and extension of the census tract in sq. Miles (ALAND), according to the following formula:

$$\min \left\{ d\left(k_0, z\right)_i = \sqrt{(k_{0i} - z)'\Sigma^{-1}(k_{0i} - z)} \right\} \tag{2.4}$$

Where k_0 is a 785×11 vector of socioeconomic factors for "clean" census tracts, z is a 1×11 vector of socioeconomic factors related to the census tract # 962700, and Σ is the 11×11 covariance matrix between k_0 and z. The row dimension (785) of the matrix k_0 consists of 784 clean census tracts plus the census tract # 962700 (where Stone's Throw landfill is located). Unfortunately, adding additional housing attributes (number of housing units with specific attributes) would induce collinearity leading to a nearly singular covariance matrix with the inability to compute the Mahalanobis distances between vectors.

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3

Econometric Analysis

3.1 Statewide Endogenous Regime Switching Hedonic Model

Numerical optimization was facilitated by scaling the variables of the probit equation by 1,000 (except for the area covered by water). Therefore, the estimates of the marginal effects for the selection equation reported in Table 3.1 should be interpreted as changes of the order of 1,000 units.

Based on the statistical significance of the results, it seems that a population density increase of 1,000 additional inhabitants per square mile (more urbanized areas) would decrease the likelihood of having a landfill located within 2 miles of a census tract by 5.6%. The probability of finding a landfill inside or within two miles of a census tract decreases by 3.6% for every 1,000 additional Caucasian inhabitants in that census tract. But an increase of 1,000 African American inhabitants corresponds to a decrease in the probability of finding a landfill within 2 miles of the census tract by only 2.1%.

Other significant predictors of landfill presence are the median income, number of housing units, vacant housing units, and area covered by water. An increase of $1,000 in median income corresponds to an approximately 0.4% decrease in the probability of having a landfill within or near the census tract. One thousand additional housing units would increase the probability of having a landfill in that census tract (or within 2 miles) by 14.4%. On the other hand, if the housing units are vacant, the probability associated with the landfill being present in the census tract falls by 23.9%. Although the water surface

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(measured in sq. Miles) is statistically significant, it does not appear to be economically significant.

TABLE 3.1
ENDOGENOUS SWITCHING MODEL (FIML ESTIMATES).

	Selection Model			FIML	
				D1	D0
Parameter	Coefficient	Marginal Effects	Parameter	Coefficient	Coefficient
Constant	-0.03	-0.01	Constant	7.189***	9.33***
	(-0.21)	(-0.81)		(9.95)	(48.92)
POPDENSITY	-0.16***	-0.056***	ln(POPBLACK)	-0.01	-0.017**
	(-5.42)	(-11.6)		(-1.38)	(-2.91)
POPBLACK	-0.061	-0.021**	ln(POPWHITE)	0.025*	0.029***
	(-1.11)	(-2.13)		-1.75	(3.63)
POPWHITE	-0.103**	-0.036***	ln(MEDINC)	0.390***	0.231***
	(-1.98)	(-3.1)		(5.61)	(13.45)
MEDINC	-0.011***	-0.004***	ln(HSDIPLOMA)	-0.068	-0.133***
	(-4.65)	(-2.9)		(-1.59)	(-5.36)
HUNITS	0.416***	0.144*	ln(ASSOCDEG)	-0.003	-0.031
	-3.17	-1.89		(-0.06)	(-1.61)
MOBHUNITS	0.068	0.024	ln(BACHDEG)	0.169***	0.213***
	(0.48)	(0.27)		(6.51)	(12.55)
VACHUNITS	-0.688***	-0.239***	ln(AWATER)	0.015	0.056***
	(-4.26)	(-13.43)		(0.64)	(3.37)
AWATER	-0.014	-0.005***	ln(R1)	0.002	0.011***
	(-0.91)	(-2.7)		(0.34)	(2.13)
			ln(R2)	0.002	0.003
				(0.26)	(0.59)
			ln(R3)	0.017	0.007
				(1.49)	(0.86)
			ln(R4)	-0.03	0.002
				(-1.2)	-0.15
			ln(R5)	-0.190***	-0.193***

continued ...

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...continued

Parameter	Coefficient	Marginal Effects	Parameter	Coefficient	Coefficient
				(-5.72)	(-7.71)
			ln(R6PLUS)	-0.037	-0.008
				(-0.7)	(-0.22)
			ln(VACHUNITS)	-0.028	-0.019
				(-0.96)	(-1.07)
			ln(MOBHUNITS)	-0.011	-0.026***
				(-1.28)	(-4.44)
			ln(HUNITSRENT)	0.13***	0.041**
				(4.32)	(2.24)
			ln(HAGELT3Y)	0.017**	0.01
				(2.04)	(1.55)
			ln(HAGE4T6Y)	0.009	0.017***
				(1.12)	(3.17)
			ln(HAGE7T17Y)	0.031**	0.056***
				(2.38)	(6.1)
			ln(HAGE18T27Y)	0.078***	0.04***
				(3.98)	(3.54)
			ln(HAGE28T37Y)	-0.017	0.007
				(-0.91)	(0.52)
			ln(HAGE38T47Y)	-0.037	0.006
				(-1.49)	(0.41)
			ln(HAGE48T57Y)	-0.015	0.014
				(-0.69)	(1.17)
			ln(HAGE58T67Y)	0.012	0.01
				(0.81)	(0.99)
			ln(HAGE68T77Y)	0.004	-0.004
				(0.45)	(-0.5)
			ln(HAGEGT78Y)	-0.006	0.004
				(-0.59)	(0.69)
			σ_1	0.313***	
				(12.86)	

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...continued

Parameter	Coefficient	Marginal Effects	Parameter	Coefficient	Coefficient
			σ_0		0.264***
					(24.77)
			ρ_1	0.913***	NA
				(27.7)	
			ρ_0	NA	0.801***
					(18.27)
Loglikelihood Value				-522.70	
Akaike Information Criterion				1,179	
Degrees of Freedom				1,081	

Notes: ***99%,**95%,*90% confidence. Z-stats in parentheses.

The last two columns of Table 3.1 report the parameter estimates of the hedonic model for the two regimes. Since the variables are in logarithmic form, the estimates should be interpreted as elasticities, i.e., the percentage change in the average median property value due to one percent change in the variable. For example, median income appears to be the most economically and statistically significant predictor for the median property value. In fact, a one percent increase in median income corresponds to a 0.39% increase of the average median property value in those census tracts where a landfill is present, and a 0.23% increase in those census tracts that neither have a landfill nor are located within two miles from one.

As expected, the coefficient of correlation of the selected equation and the statistical noise (error terms) associated with the equations for the two regimes, ρ_1 and ρ_0 are both statistically different from zero with 99% confidence. Consequently, there is evidence of a sample selection process with house prices following the two regimes (D0 and D1), which justifies the choice of the econometric modeling approach. Therefore, I will focus now the discussion on the counterfactual analysis reported in Table 3.2.

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TABLE 3.2
COUNTERFACTUAL ANALYSIS.

	E(Price|D=1)	E(Price|D=0)	Landfill Effect
Sample(D=1)	123,722	172,242	-48,519***
	(59,015)[a]	(78,738)[a]	(5,158)[b]
Sample(D=0)	80,373	120,740	-40,367***
	(43,486)[a]	(62,038)[a]	(2,706)[b]
Base Hetherogeneity	43,350***	51,501***	-8,151[c]
	(3,461)[b]	(4,684)[b]	(5,824)[b]

Notes: All values in 2016 US$; ***99% confidence; [a]same standard deviation in parentheses;[b]standard error t-test; [c]Transitional Heterogeneity.

The first row of Table 3.2 shows the predicted average median value of a property located in a census tract that either has a landfill or whose border is less than two miles far from a landfill in the actual – E(Price|D=1) – and counterfactual case — E(Price|D=0). The difference between these two figures provides a potential measure of the social cost of the landfill that could be approximately US$ 48,519 (or 28.17% decrease in value). However, as previously mentioned, this value should be taken as a hypothetical upper boundary given the fact that the median property value includes both house and lot, and is a self-reported value. In other word, it is very likely that this may be upper biased. However, the t-test on the difference between the means of the factual and counterfactual scenario (t-value -9.407) rejects, with 99% confidence, the hypothesis that the landfill has no impact on the median value of properties located in a census tract that contains a landfill. Along the same lines, the second row of Table 3.2 shows the predicted average mean value of a property that is located in a "clean" census tract in the counterfactual (E(Price|D=1)) and factual (E(Price|D=0)) case. Also, in this case the t-test rejects the null hypothesis that a landfill would not have an impact on the property in the counterfactual scenario where a property would have been in an area subject to a landfill (landfill would hypothetically depreciate the median value of these properties by 33.43% on average).

The third row of Table 3.2 reports base and transitional heterogeneities which account for other unobserved factors that may have an impact on property value. For example, households located in a census tract with a landfill

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would be willing to sell their property, on average, for $43,350 more, regardless of the potential impact of the landfill. Similarly, in the counterfactual case in which a property was located in a "clean" census tract, the same households would be willing to sell their property for an additional of $51,501 on average. In other words, property owners near landfills would be willing to sell their property for 18% less, on average, than property owners in "clean" census tracts. These disparities are potentially induced by the systematic variation across the two subsamples that is not fully captured by the hedonic model that was designed based on the available data. However, the transitional heterogeneities, which measure whether the effect of the landfill is larger for those households located in a census tract with a landfill or for those who are located in a "clean" census tract, are statistically equal to zero. This result means that the negative impact of the landfill is equal across the two subsamples (census tracts with landfills and "clean" census tracts).

3.1.1 Sensitivity Analysis

I have repeated the entire econometric analysis by restricting the landfill influence area only to those census tracts where one or more landfills are present, thereby assuming that census tracts whose border was less than two miles from a landfill would not be affected by the externality associated with the facility. Consequently, the number of census tracts subject to the potential landfill externality (D1) drops from 364 to 103. Table 3.3 shows the counterfactual analysis using the restricted dataset.

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TABLE 3.3
COUNTERFACTUAL ANALYSIS (COUNTERFACTUALS – D1 = 103).

	E(Price|D=1)	E(Price|D=0)	Landfill Effect
Sample(D=1)	116,721	162,677	-45,956***
	(37,006)[a]	(50,643)[a]	(5,158)[b]
Sample(D=0)	98,385	122,851	-24,466***
	(51,864)[a]	(61,804)[a]	(2,706)[b]
Base Hetherogeneity	18,336***	39,826***	-21,490***[c]
	(3,984)[b]	(5,334)[b]	(6,665)[b]

Notes: All values in 2016 US$; ***99% confidence; [a]same standard deviation in parentheses;[b]standard error t-test; [c]Transitional Heterogeneity.

The negative landfill externality for the subsample of the properties located in the census tract containing the landfill is comparable to the previous extended case (within two miles beyond the census tracts boundaries). However, the counterfactual outcome for the properties located in "clean" census tracts is considerably smaller. This result is confirmed by the fact that the transitional heterogeneity consists of US$ 21,490 statistically significant at 1% alpha-level. This last figure represents the potential real depreciation of a property located in a census tract with a landfill compared to a property in a "clean" census tract in the instance that would have been exposed to the landfill externality. Therefore, even considering potential bias associated with self-reporting willingness to sell, a median property in Alabama that is located in a census tract exposed to a landfill externality could lose its average value by approximately 28%.

3.2 Census Tract-to-Census Tract Comparison

Finally, based on the Mahalanobis distance measure, the census tract that is not in proximity of a landfill but has some similarities with the one of the Stone's Throw Landfill is the census tract # 076100 in Monroe County as depicted in Fig. 3.1.

Table 3.4 compares the socioeconomic characteristics of the two census tracts. Although we should be very cautious to derive any conclusion, for the sake of comparison, it should be pointed out that the selected socioeconomic and demographic indicators are generally similar except for the median income,

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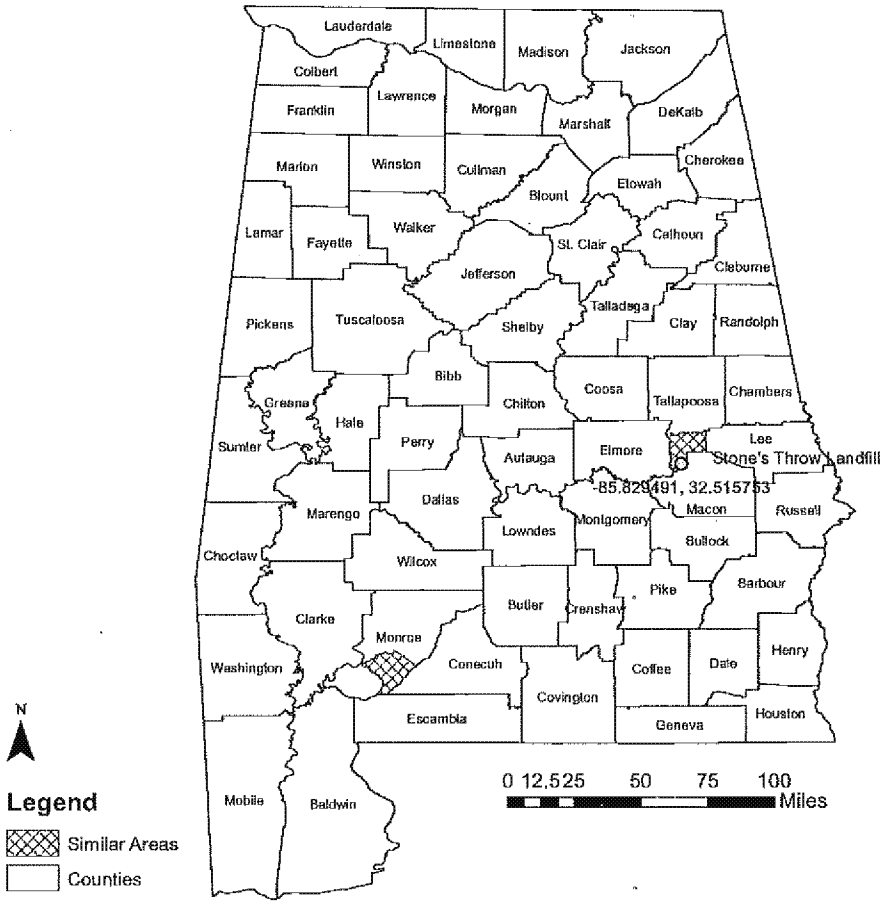

Figure 3.1: Similarity Analysis.

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the area of the census tract and the median value of the property. While the income in census tract # 962700 is approximately 34% larger, the median value of the property is almost 14% smaller. In other words, the median property value in the Stone's Throw Landfill census tract is 14% smaller than in the comparison "clean" census tract notwithstanding the fact that median income – the most economically and statistically significant predictor of property value – is 34% higher in the Stone's Throw Census Tract.

TABLE 3.4
SIMILARITY ANALYSIS (CENSUS TRACTS COMPARISON).

		Tallapoosa County	Monroe County
Indicator	Description	Census Tract #962700[a]	Census Tract #076100[b]
MEDIANVALUE	Median Property Value (2016 US$)	79,400	92,300
HUNITS	Number of Housing Units	2,925	2,869
POPDENSITY	Inhabitants/sq. mile	57.21	45.99
POPWHITE	Number of Caucasian inhabitants	5,040	5,284
POPBLACK	Number of African American inhabitants	1,273	1,117
MEDINC	Median Income (2016 US$)	52,436	39,125
URATE	Unemployment Rate (%)	15.9	18
POVRATE	Poverty Rate (%)	16.6	16.9
HH	Number of Household	2,280	2,450
POP	Total Population	6,369	6,555
AWATER	Area covered by water (sq. Miles)	2.56	0.19
ALAND	Area (sq. Miles)	111.32	142.52
MAHALANOBIS	Mahalanobis distance	0.00	3.23

Notes:[a]Census tract location of the Stone's Throw Landfill; [b]Census Tract not affected by the landfill.

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4

Conclusions

Finance and economic literature widely accept that landfills have dire consequences on nearby real estate. This report confirmed this proposition by analyzing, in a larger aggregate scale, the impact of 120 nonhazardous solid waste landfills located in the state of Alabama. The main limitation of the study is the nature of the data: census tract self-reported median property value. An endogenous regime switching model, based on a sample of 1,148 Alabama census tracts, was used to mitigate potential self-selectivity bias. A counterfactual analysis, based on the estimated regime switching model, suggests that a landfill could depreciate the median value of properties located within (or two miles from) the same census tract where the landfill is present, on average, by approximately 28% (99% confidence).

4.1 Recommendations

Based on the conclusion of the analysis, with all the limitations associated with potential data aggregation and self-reported property value biases, there is empirical evidence that a landfill depreciates the value of nearby properties in Alabama. Concerning the case of the Stone's Throw Landfill located in Tallassee, AL, where recent property sales were unavailable, I believe that is extremely likely that properties located within a three miles radius are affected by that landfill. Therefore, I offer the following two recommendations:

(i) Conduct a dynamic disaggregated welfare analysis (panel data) for Tallapoosa County, based on a hedonic model that uses property tax as a

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proxy for observed housing transactions;

(ii) Consult an independent local real estate appraiser who is familiar with the local housing market to estimate the potential damage caused by the landfill.

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EXHIBIT 4

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Ph.D. in Applied Economics, Auburn University, 2011
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Awards and Honors

Professor of The Year, Mitchell College of Business, University of South Alabama, August 18, 2017.

Outstanding Reviewer of Energy Economics, Elsevier, Amsterdam, The Netherlands, February, 2017.

Professor of The Year, Mitchell College of Business, University of South Alabama, August 21, 2015.

Outstanding Doctoral Graduate Student Award, Auburn University, April 21, 2011.

Outstanding International Graduate Student, Auburn University, April 21, 2011.

Gamma Sigma Delta, The Honor Society of Agriculture, Auburn University, April 30, 2010.

SAS Scholarship, South Eastern SAS Conference, Birmingham, AL, 2009.

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Academic Positions

Assistant Professor of Economics, University of South Alabama, Mobile, AL, 2013-present.

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University and Department Service

Committee Chair, International. (August 2017 - Present).

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Member of the Curriculum Committee, Mitchell College of Business, 2014-2015.

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Member of the "Redesigning the MBA" Committee, Mitchell College of Business, Fall 2014.

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Member of the General Studies Academic Committee (GSAC - Economics), Alabama Articulation and General Studies Committee (AGSC), 2013-present.

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Consultant for Earthjustice, New York, NY, 2018.

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Graduate Research Assistant, Department of Agricultural Economics and Rural Sociology, Auburn University, 2008-2011.

Consultant for the research project *Water Scenarios for Europe and for Neighbouring States (SCENES)*, CIEHAM-B, Valenzano (BA) - Foggia, Italy, 2008.

Consultant for the development project *Best Practices in Agriculture (Leader+ European Framework)*, Agriplan s.r.l., Bari, Italy, 2007.

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Funded Research

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AFFUSO, E., "The value of historic bannershield on Housing Value," Sponsored by City of Mobile, Local. (October 29, 2014 - Present): Principal Investigator.

AFFUSO, E., "Digital GIS Parcel Data - Mobile County," Sponsored by Mobile County Revenue Commissioner Office, Local. (June 17, 2014 - Present): Principal Investigator.

HITE, DIANE AND NORBERT W. L. WILSON. "The Economic and Environmental Benefits of Peanut Production." Job duties: Collect and analyze data for bioeconomic modeling, work with ARS employed to analyze data, write reports, make presentations. Funded by Southern Peanut Farmers Federation, 2011.

WILSON, NORBERT W. L. AND DIANE HITE, PIs. "Setting Research Priorities of the US Peanut Industry: Estimation of Economic and Environmental Baselines for Pest Management, Irrigation, and Tillage Methods." Job duties: Econometric analysis of data and write reports. Funded by USDA and National Agricultural Statistics Service, 2009-2011.

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Journal Reviewer

Agricultural and Food Economics, 2016.

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Book Chapters in Scholarly Book

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Affuso, E., H.F. Bindele and S.B. Caudill, "Spatial Stochastic Frontier Analysis: A theoretical framework for geographical spillover of efficiency and productivity", *Working Paper.*

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Presentations

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Affuso, E., "A Panel Data Analysis of Efficiency and Productivity of the U.S. Hospital Care System", Economics Seminar Series, Troy University, Troy, AL. (January 26, 2018).

Affuso, E., "Spatial Interactions in Real Estate Data Analysis", Finance Seminar Series, Florida Atlantic University, Boca Raton, FL. (December 1, 2017).

Affuso, E., 87st Southern Economic Association Conference, "Consumer Welfare and Climate Change in Greenland", Southern Economic Association, Tampa. (November 17, 2017).

Affuso, E., "Aircraft Noise and Urban Esternalities", Economics Seminar Series Tulane University, New Orleans, LA. (September 8, 2017).

Affuso, E., 32nd West Indies Agricultural Economics Conference, "Climate Change and Food Security in Guyana", Caribbean Agro-Economic Society/Ministry of Agriculture of Guyana, Georgetown, Guyana. (August 10, 2017).

Affuso, E., 85st Southern Economic Association Conference, "Electricity Consumption and Economic Growth in the U.S.: A Panel VAR Analysis", Southern Economic Association, New Orleans. (November 21, 2015).

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Affuso, E. "A quintile analysis for an impact evaluation study", *International Workshop on Computational Economics and Econometrics*, University "La Sapienza", Rome, Italy, July, 2013.

Affuso, E. "Land Use Efficiency and Biofuels Production", invited seminar at the Energy Biosciences Institute, University of Illinois, Urbana-Champaign, IL, March, 2012.

Affuso, E. "Chemical Production Factors and Peanut Production", invited seminar at University of Memphis, TN, November, 2011.

Affuso, E. "Virtual Water Trade in North America", *SEA Meeting*, Atlanta, GA, November, 2010.

Affuso, E. and Nadolnyak, D. "The Value of Climate Information in Sustainable Biofuel Production", *SECC Meeting*, Miami, FL, November, 2010.

Affuso, E., de Parisot, C., Ho, Chau-Sa and Hite, D. "Hazardous Waste and Housing Value", *Southern Economic Meeting*, San Antonio, TX, November, 2009.

Affuso, E., Ojumu, G. and Hite, D. "Land Use Change and Energy", *SERA030 Meeting*, Athens, GA, May, 2009.

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ED_006727_00008856-00041

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Teaching

Fall 2018

ECO215 - Principles of Microeconomics, University of South Alabama.

ECO315 - Intermediate Microeconomics, University of South Alabama.

ECO372 - Urban Economics, University of South Alabama.

Summer 2018

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ECO318 - Principles of Managerial Economics, University of South Alabama.

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ECO216 - Principles of Macroeconomics, University of South Alabama.

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ECO490 - Special Topics in Urban Economics, University of South Alabama.

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ECO318 - Managerial Economics, University of South Alabama.

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- Natural Resources Economics and Environmental Policy
- Regional and Urban Economics
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Last updated: October 1, 2018

ED_006727_00008856-00044

EXHIBIT 5

FOIA 2021-001987

Social media sentiment and market behavior

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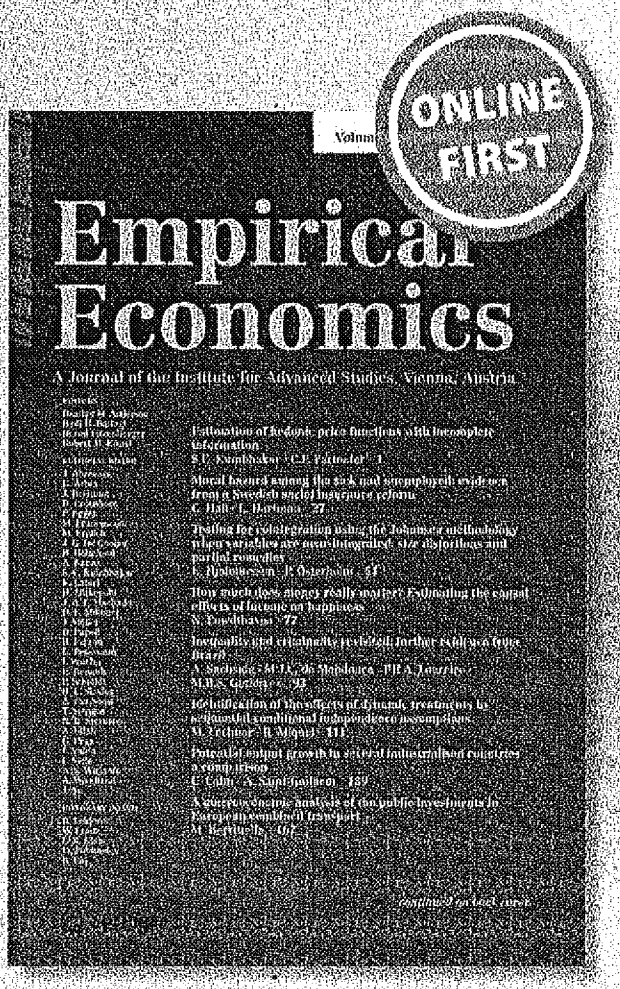
Empirical Economics
Journal of the Institute for Advanced Studies, Vienna, Austria

ISSN 0377-7332

Empir Econ
DOI 10.1007/s00181-018-1430-y



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Empir Econ
https://doi.org/10.1007/s00181-018-1430-y

Social media sentiment and market behavior

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Received: 1 February 2017 / Accepted: 26 February 2018
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Abstract This paper examines the impact of investor sentiment and geography on stock returns. We measure investor sentiment and location using direct measures derived from Twitter posts. We find Twitter sentiment is among important factors that can have an impact on stock returns. Negative tweets have a larger impact than positive tweets. The direct effect of sentiment on daily returns is an economically significant 0.036 and 0.078% for positive and negative sentiment, respectively. Our results support the Hirshleifer (J Finance 56(4):1533–1597, 2001) premise that both risk and misvaluation are important to asset pricing.

Keywords Behavioral finance · Endogenous switching · Big data · Twitter · Social media

1 Introduction

Classical finance posits investors maximize their utility by optimizing the mean-variance criterion. Assets prices reflect the sum of the present value of the future cash flows generated by the asset. However, the rise of behavioral finance has questioned whether investors gain utility from some other criterion besides returns and whether investors act irrationally thus driving stock prices away from their intrinsic values. Proponents of behavioral finance point to events such as the 1987 stock market crash as evidence traders allow influences not related to intrinsic value to influence trading behavior.

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Published online: 26 May 2018

ED_006727_00008856-00048

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Fama (1998) famously challenged behavioral finance by saying, "My view is that any new model should be judged (as above) on how it explains the big picture. The question should be: Does the new model produce rejectable predictions that capture the menu of anomalies better than market efficiency? For existing behavioral models, my answer to this question (perhaps predictably) is an emphatic no." Fama comes to his conclusion in part because behavioral finance is viewed as providing ad hoc or piecemeal solutions to asset pricing rather than providing a broad overarching theory that is applicable to all situations. Therefore, the challenge to behavioral finance researchers is to connect the way investors act in various situations such that a singular broad model can be demonstrated.

For example, well-known documented influences on investor behavior include location and sentiment based biases. Each of these has been used individually to explain particular relatively narrow empirical regularities.

Trading behavior has been shown to be linked to the location of the investor relative to the location of the company. Bodnaruk (2009) cites two well-known biases that center on this fact. Home bias describes the tendency for investors to underweight foreign assets and overweight domestic assets in their portfolios. Within their own country, investors tend to favor investing in stocks of companies who operate in nearby locations. This is known as local bias.

What is the cause for home/local bias? One potential explanation is that investors' attention is captured by those companies that they see in everyday life. Therefore, they buy stocks of nearby companies because of an increased familiarity or exposure to those companies. Another potential explanation is that investors buy stock in local companies because they have better information about those firms relative to the geographically distant firms. In these ways, location biases may reflect either a behavioral story or a rational information story.

Trading behavior has also been linked to investor sentiment through a variety of measures. The effects of sentiment are more generally shown to be linked with individual investors and small stocks. Brown and Cliff (2004) show sentiment affects returns in the short-run causing over- or under-pricing. In the long-run there is no relationship between sentiment measures and the short-run mispricing is corrected.

Baker et al. (2012) connect location with investor sentiment. They show that dual-listed companies have returns which are associated with the sentiment in the specific countries where their stocks trade. They show that these sentiment effects do spill-over into other markets. Hudson and Green (2015) uses unique sentiment measures for investors in the UK and investors in the USA. They find that sentiment in the UK does play a role in explaining equity returns in certain situations. They also show that sentiment in the US has predictive value for returns in the UK.

There are significant limitations to existing research on location, sentiment, and research which interacts these two forces. These limitations primarily include the imprecise nature of sentiment indirect measures and the infrequent nature of direct measures. Additionally, existing research has only begun to address endogeneity concerns which affect location and sentiment.

Our study expands on the work that has been done by further linking behavioral finance concepts. We study the relationship between location, sentiment, and stock returns in a novel fashion by using social media data which provides us with direct

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sentiment and location measures. We argue that past performances of stocks, geographic location, and other investor characteristics could be instrumental to explain investor sentiment and mitigate potential endogeneity bias that is common in these types of analyses. Therefore, our inferential strategy is a switching endogenous model that controls for endogeneity and allows us to conduct a counterfactual analysis of the potential impact of investors' sentiment on stock returns to strengthen our conclusions.

We find social media sentiment, as captured by Twitter, is capitalized in companies' stock. However, there are other factors that can have a greater impact on stock return besides sentiment. Negative tweets have a larger impact than positive tweets or, counterfactually, positive tweets could have increased the return of companies who received a negative tweet even more. The direct effect of sentiment on daily returns is 0.036 and 0.078 percentage points for positive and negative sentiment, respectively; this translates to an economically significant annualized effect of 9.494 and 21.712%.

The remainder of our paper is organized as follows. Section 2 provides a review of relevant literature. Section 3 describes our data. Section 4 develops our econometric model. Section 5 presents our results. Section 6 discusses economic and other implications for fund managers and policy makers. Lastly, Sect. 7 concludes the article.

2 Literature review

Location and sentiment have been shown to be important for stock returns and investor behavior in several different contexts. For example, Grinblatt and Keloharju (2001) show that investors are more likely to buy, sell, and hold securities that are geographically and culturally closer to the investor where geography is measured as the distance between the investor and the firm's headquarters and cultural proximity is measured by firms that communicate in the investor's native language or have culturally similar executives. The affect of distance and culture is greater for firms that are less well-known. They also show that less-sophisticated investors are more prone to be impacted by geographic and cultural distance to an investment than more sophisticated investors.

Overall, there are two possible explanations for the role of geographic distance in investments decisions. Investors have limited attention and they face a search problem. Geographically close stocks are those most likely to capture the investor's attention and therefore become the stocks the investor is most likely to buy, sell, or hold. This is supported by Grinblatt and Keloharju (2001). Seasholes and Zhu (2010) present evidence consistent with an attention story regarding location bias as well. They find that portfolios of local stocks do not earn abnormal returns. Furthermore, their results hold when examining stocks that are more subject to asymmetric information.

Alternatively, investors may choose geographically close stocks because the geographic proximity to the company provides the investor with an informational advantage. Therefore, investors choose local stocks due to rational advantages in information gathering. Coval and Moskowitz (2001) support the information story by examining the relationship between geography and investing in the context of investment performance of mutual funds. They find that mutual fund managers on average have some bias toward local investments. Funds that hold local investments

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tend to earn abnormal returns on the local investments. Funds that hold more local investments are more likely to have abnormal returns.

The impact of location and its influence on returns is further demonstrated by Barker and Loughran (2007) who show that geographically close companies' stock returns are correlated. They conclude that the returns are correlated because local investors are likely to trade blocks of stocks that are geographically close to them.

There is mixed evidence on the role sentiment plays in stock returns. For example, Brown and Cliff (2004) find that sentiment, although strongly linked to past market returns, is not able to predict future prices changes. Kim and Kim (2014) also find that using investor sentiment, as measured by internet message boards postings, fails to predict stock returns and volume. These results are contradicted by Stambaugh et al. (2012) which examines a variety of anomalies in the cross section of returns. They find that periods of high sentiment exacerbate anomaly return performance. Notably they find that these effects are short-lived and are not present over long time horizons. However, the procedures used to conduct the empirical analysis of these studies present few shortcomings. Stambaugh et al. (2012) use a multistep procedure to analyze the impact of lagged sentiment on stocks return, there is still a potential simultaneity process between lagged sentiment and lagged stock returns that may cause a source of endogeneity bias if not addressed. Brown and Cliff (2004) and Kim and Kim (2014) recognize this issue and conduct their analysis by using a vector autoregressive model (VAR) using an equally weighted aggregated measure of investors' sentiment and stocks returns. Although, the VAR procedure could mitigate the endogeneity bias, the aggregation bias that arises from using an arbitrary weighting scheme and by disregarding cross-sectional information may be still a potential concern.

Until this time there has been little research which connects the separate documented investor sentiment and investor location effects. Baker et al. (2012) is one of these few studies. They examine sentiment across six different global markets. They find that sentiment is a contrarian predictor of returns. They show that dual-listed companies are affected by local sentiment.

Our study expands on the work of Baker et al. (2012) by examining further the relationship between location, sentiment, and returns. Our main contributions are three fold. First, our methodology addresses the previous endogeneity concerns using a simultaneous procedure that does not require data aggregation over the cross-sectional space.

Second, we connect investor sentiment and location in a novel way. We allow the proximity of investors to firm headquarters to be a continuous distance measure and use this measure as an instrument with other exogenous factors (including past performances of stocks) to explain the sentiment of potential investors. An endogenous switching regime model is used to conduct a robust analysis that should mitigate potential endogeneity bias. This is the first time investor sentiment and location has been analyzed in this fashion.

Third, our measures for location and sentiment are derived from Twitter social media postings and provide combined improvements over previous studies. Our measure of sentiment is computed directly from the communication of potential investors; this is an improvement over indirect measures of sentiment such as those based on mutual fund data as in Neal and Wheatley (1998). Our measure for location is generated from

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the exact longitude and latitude of the individual as provided by their global positioning system (GPS) coordinates; this is an improvement over previous measures because it does not rely on the less precise practice of transferring internet protocol (IP) addresses to physical addresses.

Social media and crowd-sourced data have made significant inroads into financial research. Bollen et al. (2011) used Twitter posts to examine the relationship between sentiment and the Dow Jones 30 Industrial Index. Antweiler and Frank (2004) and Kim and Kim (2014) use postings to Yahoo! Finance message boards. Chen et al. (2014) use sentiment derived from postings to the popular investment website SeekingAlpha.com to show a relationship between sentiment and returns. Finally, Da et al. (2011) used crowd-sourced internet search volume data to capture investor attention.

3 Data

To test the hypothesis that social media sentiments are capitalized in companies' stock return we used data from Twitter, a social media company that specializes in posts of 140 characters or fewer.

Our Twitter data consist of a unique set of tweets provided by DataSift, a commercial vendor of historical Twitter data, for a period from October 1, 2012 thru June 30, 2013. Our entire dataset contains tweets which reference approximately 5,500 public companies listed on the NYSE, Nasdaq, and Amex. DataSift identifies companies when they are referenced by name or by ticker. Each tweet includes any metadata available about the tweet such as username, date, time stamp to the second, and location of the user when the tweet was posted. Location data is generated by the GPS of the device used to tweet; therefore, we get exact longitude and latitude of the user at the time of the tweet. We filter our sample to keep only those tweets with location data and definable sentiment, leaving a final sample of 13,114 tweets.

Each tweet is matched with stock price and return data sourced from the Center for Research in Security Prices (CRSP) database. We match each tweet to firm fundamental and characteristic data sourced from Compustat. Furthermore, we match the Fama and French factors, available on Ken French's website, to each tweet.

Assuming that y is the daily return of a company listed in NYSE (or other places) and S is a social media sentiment about a company shared by a potential stakeholder: then a simple OLS model could be used to test our hypothesis, i.e., $y = f(S, X)$ where X are the Fama and French factors that have an impact on the company's stock return. However, it should be pointed out that there is a potential feedback process between stock return and positive sentiment. Is the value of the stock affected by the social media sentiment? Or is it the social media sentiment that is affected by the behavior of the stock in the market. There is a potential source of endogeneity that will be addressed in detail in the next section and is also the major motivation of our analysis.

Our unit of analysis is the U.S. stock market between October 1 2012 and June 30 2013. To capture the impact of social media sentiment we use, as a unit of observation, individual tweets that share sentiment about a specific company and we relate this sentiment to the net-return of the company. Since the tweets are sent from different

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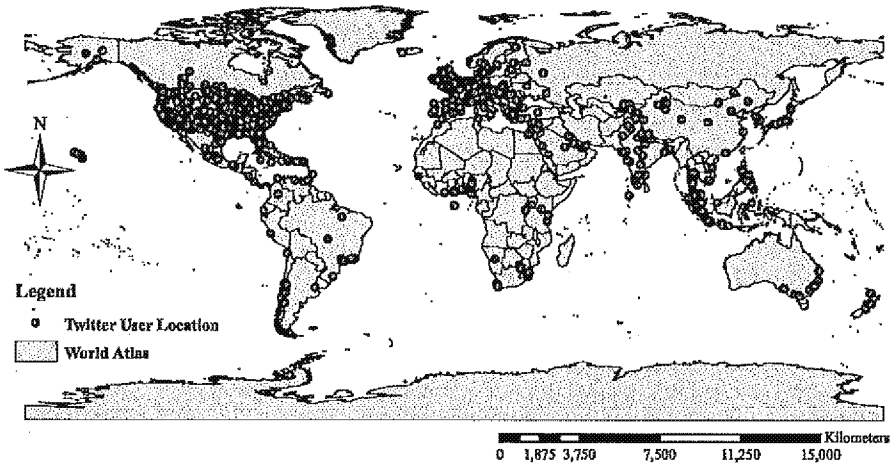

Fig. 1 Geographic distribution of in sample Twitter users

random locations in the world at different times of the day, we are not able to conduct our analysis in a conventional panel/pseudo-panel setting. Therefore, we treat our analysis as a cross-sectional study in a time window of nine months. This approach is also common in hedonic analysis conducted in housing economics where different properties are sold (and sometimes repeatedly sold) in different times. However, we include in our study some variables like dayserial, user id, and geographic distance[1] of Twitter user from a company headquarters in an attempt to capture some of the spatial, temporal and unobserved individual heterogeneities that may potentially affect our analysis. Dayserial is an incremental variable which corresponds to the relative time position in our sample. For example, if dayserial takes a value of 40 then the observation falls on the 40th day of our sample period or November 9, 2012. The geographic location of each user was available in our dataset as exact longitude and latitude. Company headquarters are identified from the address location listed in Compustat which is then converted to longitude and latitude using ArcGIS® 10 by ESRI.[2] Figure 1 illustrates the spatial distribution of the Twitter users that shared a company sentiment that was used in our study.

Twitter sentiment is calculated through three distinct sources. First, we use a Naïve Bayes Classifier to rate all tweets for sentiment related to buy, sell, or hold actions. Our process is similar to Antweiler and Frank (2004) where a subset of tweets are manually rated, these manually rated tweets are used to train the classifier, and the classifier's rules are then applied to the whole sample. Second, we classify tweets'

[1] The great circle distance has been computed through a geospatial analysis using the haversine formula that takes into account the curvature of the earth. Therefore, the distance of twitter user i from company j, expressed in km, was calculated as: $d_{ij} = 2r \cdot \arcsin\sqrt{(\sin^2\left(\frac{\varphi_j-\varphi_i}{2}\right) + \cos(\varphi_i)\cos(\varphi_j)\sin^2\left(\frac{\lambda_j-\lambda_i}{2}\right)}$ where $r = 6372.8$ km (earth radius), φ and λ are latitude and longitude of user twitters and companies expressed in radians.

[2] More information can be found at http://www.esri.com.

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Table 1 Descriptive statistics

	Mean	Std. Dev.	Median
S (positive sentiment = 1)	0.675	0.468	1.000
Company daily return	0.003	0.069	0.000
Distance to company's headquarters (km)	2507.862	3263.498	1320.898
User's gender (male = 1)	0.400	0.490	0.000
Language confidence	88.496	17.092	100.000
mktrf	0.037	0.762	0.110
hml	0.042	0.332	0.030
smb	0.013	0.389	0.070
Daily volume of trades	12,424,486.030	28,443,226.080	2,831,760.000
Sample Size	13,114		

S is our sentiment measure which takes a value of 1 for positive sentiment and a value of 0 for negative sentiment. Company daily returns as reported by CRSP. Daily volume of trades of the common stock as reported by CRSP. Distance to company headquarters calculated by the GPS coordinates of the Twitter user and the translated coordinates of the company's headquarters as listed in Compustat. User's gender provided by DataSift. Language confidence measure provided by DataSift. The mktrf, hml, and smb variables are the Fama–French factors of the market risk premium, high minus low, and small minus big, respectively

sentiment with a bag of words approach using the Loughran and McDonald dictionaries from Loughran and McDonald (2011). Under this process the distributions of words within each tweet and within the entire corpus of tweets are used to provide weights for each individual word occurrence. We create individual measures for each of the Loughran and McDonald word lists. Third, we gain sentiment information directly from DataSift's proprietary method. For a more in-depth analysis of the three sources of sentiment-related measures, we refer the interested reader to Lahtinen and Lee (2015).

Our main sentiment measure, salience_content_sentiment, is derived from the DataSift measure for sentiment. DataSift's original variable takes negative and positive values for negative and positive sentiment respectively.[3] The larger the absolute value of the measure then the stronger the sentiment was in that particular tweet. We use this variable to construct a binary variable that takes the value of one if the user shared positive sentiment and the value of zero if the user shared negative sentiment. Descriptive statistics of the variables used in our study are reported in Table 1.

[3] We use DataSift's measure rather than our own calculated Loughran and McDonald measures to preserve as much data as possible. DataSift's measures have fewer missing and zero-sentiment results relative to our Loughran and McDonald measures. Use of proprietary sentiment measures rather than Loughran and McDonald based measures is fairly common in financial research. For example, many studies utilize Thomson Reuters News Analytics data such as Smales (2014).

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4 Econometric model

The problem of measuring the impact of potential investors' sentiment on stock returns could be biased by construction if the Twitter sentiment is used as a regressor to explain the daily stock return. As a consequence, endogeneity may arise from the simultaneity between covariates and the predicted outcome. Endogenous switching regression models are commonly used in economics to address the issue of market disequilibrium (Goldfeld and Quandt 1973; Maddala and Nelson 1974) or simultaneity of regressors and sample selection bias (Heckman 1974; Lee 1978). Self-selection models are also common in corporate finance, where financial decisions are not made at random but according to the preferences of decision makers (Li and Prabhala 2007).

In our study, we propose the use of a switching regression model where in a first stage we attempt to model the Twitter user decision to publicly share her/his sentiment. Therefore, we assume that there exists a latent variable S^* denoting the utility of sharing the sentiment on the company (or stock) such that

$$S_i = z_i'\gamma + u_i \text{ with } \begin{cases} S_i = 1 & \text{if } S_i^* > 0 \\ S_i = 0 & \text{if } S_i^* < 0 \end{cases} \tag{1}$$

where z_i' is a row vector of exogenous variables that could affect the choice of a Twitter user to share tweet i that conveys a positive sentiment if $S_i = 1$ or a negative sentiment if $S_i = 0$. In a personal email communication on 5 July 2015, Prof. William H. Greene agreed that this coding approach for the sentiment index is appropriate since the value $S_i = 0$ is only an indicator of the sign of the latent variable S^*. The exogenous factors include lagged values of the stock return, the daily volume of shares traded, language confidence, Twitter user id, and tweet daily serial to capture time and individual heterogeneities, and finally a geographic component, i.e., the distance of the Twitter user from the headquarters of the company for which the sentiment was expressed.

In the second stage, we use the endogenous switching regression to model the return on stocks that face two regimes: (regime 1) stocks that received a "positive" tweet and (regime 2) stocks that received a "negative" tweet. Therefore, the model that accounts for selection bias can be written as:

$$\begin{aligned} y_{1i} &= x_{1i}'\beta_1 + \epsilon_{1i} \quad \text{if } S_i^* > 0\,(S_i = 1) \\ y_{2i} &= x_{2i}'\beta_2 + \epsilon_{2i} \quad \text{if } S_i^* < 0\,(S_i = 0) \end{aligned} \tag{2}$$

where y_i is the daily return on the stock associated with the sentiment expressed by tweet i in the two regimes; x_{1i}' and x_{2i}' are row vectors of exogenous factor that may impact the stock return in the two regimes. These factors, commonly used in the literature, are the Fama–French factors.

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Maddala (1983, p. 223) assumes that the vectors $\mathbf{u}$, ϵ_1 and ϵ_2 follow a trivariate normal distribution with zero mean and covariance matrix:

$$\Sigma = \begin{bmatrix} 1 & \sigma_{u1} & \sigma_{u2} \\ \sigma_{1u} & \sigma_1^2 & \cdot \\ \sigma_{2u} & \cdot & \sigma_2^2 \end{bmatrix} \tag{3}$$

where the variance of $\mathbf{u}$ is assumed to be 1 since γ is estimable up to a scale factor, while the covariance terms σ_{12} and σ_{21}(between $\epsilon_1$and ϵ_2) are not estimable because $y_i|S_i = 1$ and $y_i|S_i = 0$ do not occur simultaneously.

We estimate the three equations that constitute the endogenous switching model in (1) and (2), simultaneously by means of full information maximum likelihood (FIML) estimation as in Lee and Trost (1978) and Gaag and Vijverberg (1988). The log-likelihood function for our model is:

$$\begin{aligned} \ln L = \sum_{i=1}^{N} S_i \left[\ln \phi \left(\frac{\epsilon_{1i}}{\sigma_1} \right) - \ln \sigma_1 + \ln \Phi \left(\zeta_{1i} \right) \right] \\ + (1 - S_i) \left[\ln \phi \left(\frac{\epsilon_{2i}}{\sigma_2} \right) - \ln \sigma_2 + \ln \Phi \left(-\zeta_{2i} \right) \right] \end{aligned} \tag{4}$$

where $\Phi(\cdot)$ and $\phi(\cdot)$ are cumulative density and probability density functions of the standard normal distribution, respectively; $\zeta_{1i} = \left(z_i' \gamma + \rho_1 \epsilon_{1i} / \sigma_1 \right) / (1 - \rho_1^2)^{0.5}$ and $\zeta_{2i} = \left(z_i' \gamma + \rho_2 \epsilon_{2i} / \sigma_2 \right) / (1 - \rho_2^2)^{0.5}$ with ρ_1 and ρ_2 being the coefficient of correlation between u_i and ϵ_{1i} and u_i and ϵ_{2i}, respectively.

5 Results

To better understand the results of our analysis, it is important to report also the potentially biased results of the OLS estimates of the impact of the Twitter sentiment on the stock return. Table 2 reports the comparison of four sets of OLS estimates for the Fama–French three-factor model with the endogenous sentiment, the Fama–French three-factor model results for two subsamples, positive and negative sentiment, and the Fama–French three-factor model for the whole sample without endogenous sentiment.

From the parameter estimate of the positive sentiment (S) in Model I (first column of Table 2) it appears that, on average, those stocks receiving a positive tweet would enjoy an increase of 0.005% on their daily return compared to those who received negative sentiment. However, it should also be noted that the intercept (negative sentiment is the baseline $S = 0$) of model I is statistically equal to zero. In all four models, the trend (proxied by dayserial) seems to not have an impact on the stock return. Overall, the parameters of the Fama and French indicators have a good explanatory power across the four models except for the subsample of stocks who received a positive sentiment (model II). We believe this is consistent with prior literature which has shown that sentiment based mispricing is worse during periods of high sentiment (Baker et al. 2012).

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Table 2 OLS estimates of the Fama–French three-factor model

Parameter	Model I (endogenous)	Model II: positive sentiment ($S = 1$)	Model III: negative sentiment ($S = 0$)	Model IV: pooled
	Estimate	Estimate	Estimate	Estimate
(Intercept)	− 0.001	0.003*	0.001	0.002
	(− 0.92)	(2.10)	(0.28)	(1.54)
mktrf	0.013**	0.013**	0.015**	0.013**
	(15.68)	(14.33)	(7.87)	(15.79)
smb	− 0.006**	− 0.003	− 0.010**	− 0.006**
	(− 3.46)	(− 1.96)	(− 2.96)	(−3.46)
hml	− 0.006*	−0.003	− 0.012**	−0.006**
	(− 3.03)	(−1.43)	(− 2.91)	(−3.04)
dayserial	0.000	0.000	0.000	0.000
	(0.43)	(1.14)	(− 0.59)	(0.57)
S	0.005**	–	–	–
	(4.24)	–	–	–
R^2	0.021	0.024	0.015	0.019
F Stat	54.2	54.3	15.8	63.2
DF	13108	8850	4254	13109
LL	16557	12437	4498	16548
AIC	− 33101	−24862	− 8983	−33085

*or **indicate significance at the 5 and 1% levels, respectively; t stat in parentheses; DF degrees of freedom, LL log-likelihood value, AIC Akaike Information Criterion. The mktrf, hml, and smb variables are the Fama–French factors of the market risk premium, high minus low, and small minus big, respectively. The dayserial variable does not have any financial implications. We have included it only to capture time effects that could potentially bias our results if this variable was omitted

Further considerations should be made upon the possible endogeneity of the positive sentiment variable S. As previously mentioned, we modeled the selection process of sharing sentiment on a specific company by using a discrete choice model in the attempt to recover the latent variable that represents the benefit of tweeting the user sentiment. Table 3 reports the maximum likelihood estimates of a set of three Probit models that were used as a first attempt to assess the selection process and test the endogeneity of the user sentiment variable S.

The three models (Models V–VII) presented in Table 3 differ only by the inclusion of lagged values of the stock return (based on closing price of the previous operative day of the stock market) that may affect the user choice to post a positive tweet. Model VI includes the stock return on the previous available day (Lag 1). For example, if a company received a positive (or negative) tweet on Monday, the previous selected day for the return on the company's stock is Friday. The same is true for Model VII that includes also the stock return 2 days prior to shared sentiment (Lag 2). Therefore, if

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Table 3 Selection models

Parameter	Model V: probit	Model VI: probit with 1 lag of stock return	Model VII: probit with 2 lags of stock return
	Estimate	Estimate	Estimate
(Intercept)	2.071**	2.079**	2.082**
	(10.49)	(10.52)	(10.53)
Distance to company's headquarters[a]	− 0.028**	−0.028**	− 0.028**
	(− 6.530)	(− 6.540)	(−6.550)
User's gender (male = 1)	− 0.160**	− 0.162**	−0.162**
	(− 6.730)	(− 6.810)	(−6.800)
Daily volume of tweets[a]	− 0.026**	− 0.026**	−0.026**
	(− 4.420)	(− 4.440)	(−4.450)
Language confidence	− 0.007**	−0.007**	− 0.007**
	(− 10.540)	(− 10.550)	(−10.550)
Dayserial	0.000**	0.000**	0.000**
	(3.17)	(3.04)	(3.03)
Twitter user id[b]	− 0.022*	−0.022*	− 0.022*
	(− 2.530)	(− 2.550)	(−2.560)
Previous day stock return (Lag 1)	–	0.598*	0.590*
		(2.16)	(2.12)
2 Previous days stock return (Lag 2)	–	–	0.292
			(0.79)
DF	13107	13106	13105
LL	− 8115	−8112	− 8112
AIC	16243	16240	16242

*or **indicate significance at the 5 and 1% levels, respectively; z value in parentheses; *DF* degrees of freedom, *LL* log-likelihood value, *AIC* Akaike Information Criterion. Dependent Variable: Positive Sentiment (*S*); [a] continuous variable in log form; [b] this variable and dayserial do not have any financial implication. We have included them only to capture individual and time effects that could potentially bias our results if these variables were omitted. Since the user id variable is a numerical id of 8–9 digit, we have expressed it in log form for scaling purposes to ensure convergence during the optimization procedure

the tweet was posted on Monday, the week day corresponding to the stock return is the previous Thursday.

Based on the values of the Akaike Information Criteria of the three models, it appears that Model VI is the selection model that better represents the reality with minimum information loss. We further investigate the choice of the model that better represents the selection process by performing a series of log-likelihood ratio tests for model restrictions. The first test consists of testing the null hypothesis that Model V (restricted) and Model VI (unrestricted) are equal. The log-likelihood ratio for this test, that follows the Chi-squared distribution with 1 degree of freedom (equal to the number of restrictions) was equal to 4.91 (p val = 0.027); therefore, we reject the

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restricted model in favor of the unrestricted. The second test is based on the null hypothesis that Model V (restricted) and Model VII (unrestricted) are the same. Even in this case we reject the restricted Model V because the Chi-squared statistics was 5.55 (p val = 0.062) with two degrees of freedom that is equal to the number of restrictions. Finally, we conduct a test to choose between Model VI (restricted) and Model VII (unrestricted) under the null hypothesis that these models are the same. In this case, the log-likelihood ratio with one degree of freedom (1 restriction) was 0.64 (p val 0.42) failing to reject Model VI that is preferred to Model VII and Model V.

We note that the coefficients for the Fama–French three factors used in our model are the raw factors rather than using adjusted factors for each firm. We did estimate individual factor loadings for each firm using daily data over a period of one year prior to the beginning of our sample. However, the lower value of the Akaike Information Criterion measure for the model with raw factors compared to the adjusted factors indicates that using the raw factors represents the reality with the least data information loss; therefore, we use the raw factors instead.

For robustness, we have also performed our analysis using the Fama–French four-factor model, a la Carhart (1997), and using the Fama–French five-factor model. Based on the results from the tests with the four- and five-factor models, we conclude that using the three-factor model is the most appropriate choice as it generates the least amount of information loss based on the AIC.

In addition, once we established that the model with one period lag of the stock return is most suitable to represent the selection process of sharing a positive sentiment on the company stock, we use the residuals of this model to perform the Wu-Hausman test for the endogeneity of S. Assuming that the exogenous variables used as regressors in the selection model (VI) are acceptable instruments, the Wu-Hausman test consists of adding the residual of Model VI as an additional regressor of Model I and perform an auxiliary regression analysis that can be used for this purpose. The null hypothesis of no endogeneity of the positive sentiment (S) implies that the parameter estimate of the residual of Model VI in the auxiliary regression previously mentioned should be equal to zero. A t test with a t val of 3.61 rejected the null hypothesis of no endogeneity at 99% confidence confirming our expectation of S being endogenous.

We choose the regressors of Model VI to be used as regressors in the selection equation (1) for the endogenous switching regression model to perform the FIML estimation of (4) whose results are reported in Table 4.

The majority of the parameters have good statistical power (statistically significant at 99% confidence). The second column of Table 4 reports the marginal effects of the selection model that is the percentage change in probability of a stock receiving a positive tweet per unit change in the value of the exogenous variable. For example, 1 percentage point increase in the previous day return on the company's stock would increase the probability of the same company receiving a positive tweet by approximately 21%. However, the marginal effect of a discrete variable like gender should be interpreted as percentage points change. From the analysis, it appears that male users are more pessimistic about the market behavior of some stocks; in fact, these users are approximately 8 percentage points less likely to share a positive sentiment about a company compared to their female counterpart. Furthermore, we should also point out that the parameters of some variables expressed in logarithmic form, such as the

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Table 4 Endogenous switching model: results

Parameter	Selection model		Parameter	FIML	
	Coefficient	Marginal effects[a]		$S = 1$ coefficient	$S = 0$ coefficient
(Intercept)	1.928**	0.697**	(Intercept)	− 0.003*	−0.043**
	(10.836)	(0.043)		(− 2.301)	(−16.286)
Distance to Co.'s HQ[b]	− 0.014**	−0.022**	mktrf	0.013**	0.014**
	(− 3.507)	0.000		(14.274)	(8.915)
Gender (male = 1)	− 0.100**	− 0.081**	smb	− 0.002	−0.009**
	(− 4.722)	(0.021)		(− 0.641)	(−3.129)
Daily volume of tweets[b]	− 0.021**	0.008	hml	− 0.006**	− 0.011**
	(− 4.045)	(0.01)		(− 3.111)	(−3.108)
Language confidence	− 0.006**	− 0.003	dayserial	0.000**	0.000**
	(− 10.100)	(0.002)		(− 2.752)	(5.541)
dayserial	0.001**	0.000	σ_1	0.060**	
	(4.49)	(0.00)		(152.325)	
Twitter user id[c]	− 0.032**	− 0.015	ρ_1	0.413**	
	(− 4.027)	(0.018)		(18.291)	
Previous day stock return (Lag 1)	0.598**	0.209**	σ_2		0.086**
	(2.424)	(0.053)			(176.317)
			ρ_2		− 0.622**
					(− 18.740)
Sample size	13114 (22 parameters)				
LL	9131				
AIC	− 18217				

*or **indicate significance at the 5 and 1% levels, respectively; z value in parentheses; dependent variable in selection model is positive sentiment (S); $S = 1$ is regime 1, i.e., return of company that received a positive tweet; $S = 0$ is regime 2, i.e., return of company that received a negative tweet; *LL* log-likelihood value; *AIC* Akaike Information Criterion; [a] standard error of marginal effects in parentheses computed using the delta method; [b] continuous variable in log form; [c] this variable and dayserial do not have any financial implication. We have included them only to capture individual and time effects that could potentially bias our results if these variables were omitted. Since the user id variable is a numerical id of 8–9 digit, we have expressed it in log form for scaling purposes to ensure convergence during the optimization procedure

distance to the company's headquarters or daily volume of shares traded, should be considered as elasticities. One of the reasons of expressing these variables in logarithmic form was to scale them to ensure the convergence of the optimization procedure of (4). For example, users who are 10% farther (approximately 250 km) from the average distance to the company headquarters are 2.2% less likely to share a positive sentiment. This result may be consistent with the fact that users who are closer have more information about the company compared to those from remote areas or that users who are closer pay more attention to the company.

It is of note that the marginal effects for the daily volume of shares traded and language confidence, the strength of the expressed sentiment, are not significant. Measures

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for confidence and trading activity have been shown to be linked together with greater levels of confidence leading to greater trading as in Barber and Odean (2001). Our results suggest that the sentiment and confidence effects identified in the literature may be separate and distinct effects.

The last two columns of Table 4 report the parameter estimates of the endogenous switching in the Fama–French three-factor model. The estimated coefficients of correlation (ρ_1, ρ_2) and the standard deviations of the error of the Fama–French three-factor model (σ_1, σ_2) are statistically significant at the 99% confidence level. This result is further evidence of sample selectivity bias.

One of the advantages of the endogenous switching model is that it allows us to compare the expected return on stocks of companies who received positive tweets with respect to those companies who have received negative tweets to measure the extent to which the social media sentiment is capitalized in the stock return. The average impact, on the company's daily stock return, of positive sentiment versus negative sentiment shared by Twitter users about the company, can be calculated as the difference between the unconditional expected return on the company's stock in the two regimes: $E(y_1)$–$E(y_2)$. According to our results, this figure could be approximately 0.045 percentage points (significant at 1% level—t stat = 172.5). However, this result is misleading in case of sample selection bias, that is when $\text{cov}(\epsilon_1 - \epsilon_2, \mathbf{u}) \neq 0$ which implies that $\rho_1\sigma_1 \neq \rho_2\sigma_2$. Since in the latter case the magnitude of a positive sentiment can be significantly different, Heckman (2001) suggests to perform a counterfactual analysis that provides more accurate information on the relationship between "treatment" (positive sentiment on the company) and outcomes (company's stock return).

This analysis can be done by computing the conditional expectations for stocks return as in Falco et al. (2011). The conditional expectations are:

(i) Expected return on stock of companies who received a positive tweet (conditional on receiving a positive tweet)

$$\mathrm{E}\left(y_{1i}|S_i = 1\right) = x'_{1i}\beta_1 + \sigma_1 \frac{\phi\left(z'_i\gamma\right)}{\Phi\left(z'_i\gamma\right)} \tag{5}$$

(ii) Expected return on stock of companies who received a negative tweet (in the instance they would have received a positive tweet)

$$\mathrm{E}\left(y_{2i}|S_i = 1\right) = x'_{1i}\beta_2 + \sigma_2 \frac{\phi\left(z'_i\gamma\right)}{\Phi\left(z'_i\gamma\right)} \tag{6}$$

(iii) Expected return on stock of companies who received a positive tweet (in the instance they would have received a negative tweet)

$$\mathrm{E}\left(y_{1i}|S_i = 0\right) = x'_{2i}\beta_1 + \sigma_1 \frac{\phi\left(z'_i\gamma\right)}{\Phi\left(z'_i\gamma\right)} \tag{7}$$

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Table 5 Expected company's stock return and social media sentiment effect

Subsample of companies receiving…	Tweet[a]		
	Positive sentiment	Negative sentiment	Positive sentiment effect[b]
Positive sentiment	0.025[c]	− 0.011[d]	0.036**[l]
	(0.011)	(0.015)	(183.2)
Negative sentiment	− 0.072[e]	− 0.150[f]	0.078**[m]
	(0.011)	(0.016)	(254.6)
Heterogeneity effects	0.097**[g]	0.139**[h]	− 0.042**[n]
	(466.6)	(463.3)	(− 114.8)

[a]Standard deviations in parentheses
[b]t value of the t test on difference between sample means; *or **indicate significance at the 5 and 1% levels, respectively
[c]Expected return from (5)
[d]Expected return from (6)
[e]Expected return from (7)
[f] Expected return from (8)
[g]Base heterogeneity BH_1 = (7)–(5)
[h]Base heterogeneity BH_2 = (8)–(6)
[l]Impact of positive sentiment on company who received a positive tweet
[m]Potential impact of positive sentiment on company who received a negative tweet
[n]Transitional heterogeneity $TH = BH_1 - BH_2$

(iv) Expected return on stock of companies who received a negative tweet (conditional on receiving a negative tweet)

$$E\left(y_{2i} | S_i = 0\right) = x'_{2i}\beta_2 + \sigma_2 \frac{\phi\left(z'_i\gamma\right)}{\Phi\left(z'_i\gamma\right)} \tag{8}$$

We can compute the causal effect of positive sentiment on the stock of companies that received a positive tweet by subtracting (6) from (5). In the counterfactual hypothesis that a company who has received a negative tweet would have received a positive tweet, we can then compute the potential effect of positive sentiment on the stock return of company who received negative sentiment by subtracting (8) from (7). In addition, following Winship and Morgan (1999) and Carter and Milon (2005), we define the heterogeneity effects as the impact of unobservable heterogeneities (independent from Twitter user sentiment) that may have an impact on the company's stock return. The base heterogeneity effects for the two subsamples would be BH_1(for companies who received a positive tweet) whose value can be calculated by subtracting (7) from (5) and BH_2(for companies who received a negative tweet) as the difference between (8) and (6). Furthermore, the transitional heterogeneity effect, that is $TH = BH_2 - BH_1$, provides information regarding the magnitude of the potential benefit of a positive sentiment across the two subsamples of companies in the actual and counterfactual case. A quantitative summary of the conditional expectations and counterfactual analysis is reported in Table 5.

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Companies who received positive sentiment have an expected daily return of 0.025 percentage points while in the counterfactual case that the company would have received negative sentiment, its stock price would fall by 0.011 percentage points. Companies who received a negative tweet experienced a negative daily return of 0.15 percentage points; however, if the same companies would have received a positive tweet, their value loss would be reduced by −0.072 percentage points in the counterfactual case. The last row of Table 5, shows the impact of potential heterogeneities that could drive the stock returns besides the sentiment shared by Twitter users. For example, a company who received positive sentiment, would have experienced an expected positive daily return of 0.097 percentage points on their stock for other reasons that are apart from the sentiment of potential investors. Similarly for the group of companies who received negative sentiment, they could experience an increase in their stock return by 0.139 percentage points due to other factors that are unobserved. The last column of Table 5 shows the impact of the positive sentiment on company's stock return in the actual and counterfactual condition after adjusting for potential sample heterogeneities. From our analysis, it appears that positive sentiment shared by Twitter users is capitalized in the expected company's stock return in the extent of 0.036 daily percentage points. The impact of positive sentiment would be even larger on companies who have received negative sentiment instead. In fact, these companies could have experienced an increased expected daily return of 0.078 percentage points. This is confirmed by the negative value of the transitional heterogeneity. This translates to an economically significant annualized effect of 9.494 and 21.712% for positive and negative tweets, respectively.

Although the magnitudes in our counterfactual analysis are large, our results indicate that social media sentiment shared by potential stakeholders are not the primary factors that explain the company's return. There are other unobserved factors that could have positive impact of larger magnitude on companies' returns. However, after we account for the potential impact of these unobserved potential factors, it is undeniable that social media sentiment is capitalized in the company's stock price. In fact, there is evidence that negative sentiment produces a negative impact on the company's stock that is even larger compared to positive sentiment. This result is consistent with prior literature that shows the asymmetric effect negative and positive events may have on the firm; for example, reducing or omitting dividends has an effect that is approximately twice as large as increasing or initiating dividends (Dewenter and Warther 1998).

To further illustrate our results, we include graphical representations of the differences in factor loadings from the Fama–French three-factor model between stocks experiencing positive sentiment and stocks experiencing negative sentiment (Figs. 2, 3, 4).

6 Discussion

The investments profession is keyed in on the impact of social media on stock returns. For example, Bloomberg Terminals offer a function called "Bloomberg Social Velocity", which compares stocks performance to positive and negative mentions about a

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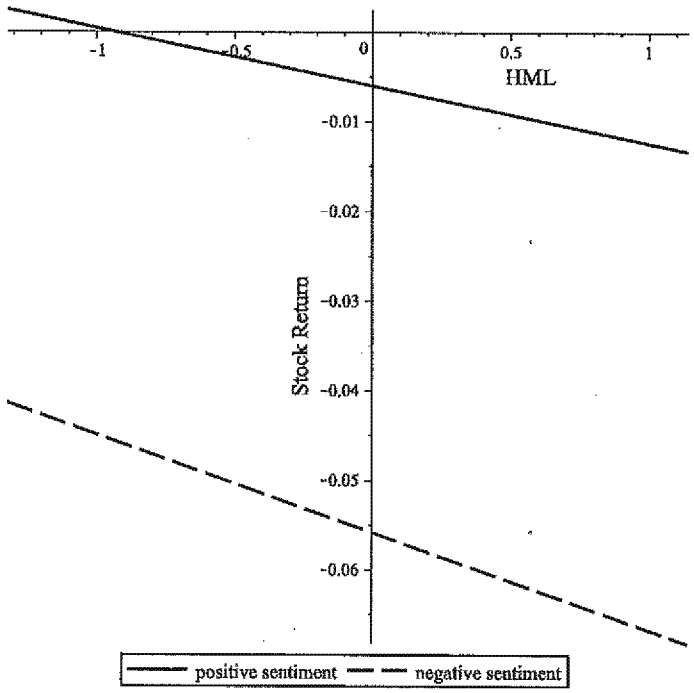

Fig. 2 Social media effect on HML

company on social media. Therefore, fund managers may be interested in the applicability of our findings to their fund management. We believe, as demonstrated in our results, that including location with social media sentiment data would enhance the usefulness of using such data to inform trading practices.

However, fund managers may find actually profiting from social media sentiment difficult. The concept of limits to arbitrage is particular important in this instance. We document an asymmetric effect of positive and negative sentiment, where negative sentiment is more impactful. Profiting from this would, in most cases, require the manager to short the stock in question. Most funds are prohibited from selling stock short. Additionally, even when a manager may be allowed to short a stock, there may not be shares available to short, thus limiting the profitability of the strategy. More academic work could be done to analyze how our documented effect holds for securities that would be easy to trade and short.

We believe policy makers may also have interest in our findings. Social media and its effect on information flow from firm insiders to investors has already received the attention of regulators. For example, Reed Hastings, the CEO of Netflix, Inc., was investigated by the Securities and Exchange Commission for releasing information to the public via Facebook, rather than by using traditional media. No action was taken against Hastings because the breadth and availability of his comments on Facebook were deemed broad enough as to not violate Regulation FD. The SEC has issued several statements on the use of social media by investment advisors, warning advisors against

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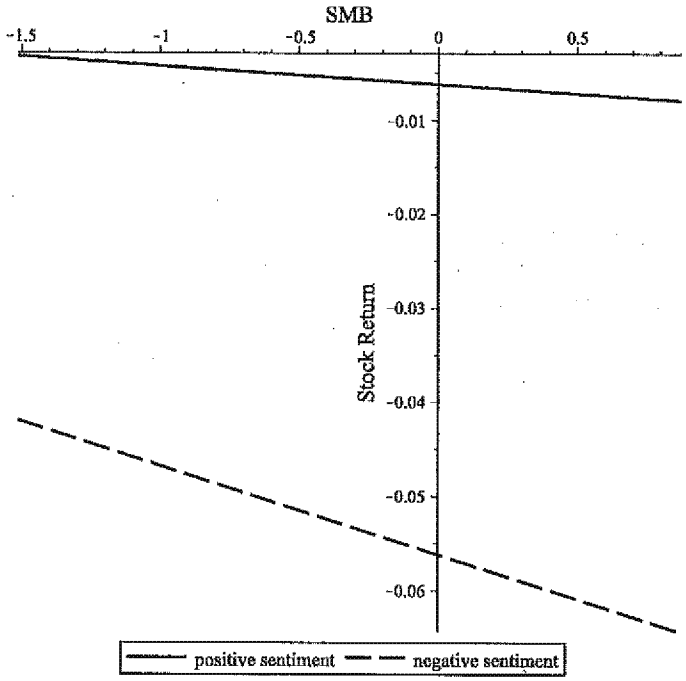

Fig. 3 Social media effect on SMB

spreading rumors and unsubstantiated information. Effective October 1, 2017, the SEC began requiring registered investment advisors to disclose their social media accounts on their Form ADV filings. We believe our findings give support to the SEC for its actions in monitoring the use of social media in the investment sphere.

7 Conclusion

This paper examines the impact of investor sentiment and geography on stock returns. We measure investor sentiment and location using direct measures derived from Twitter posts, called tweets. Unsurprisingly, we find sentiment is endogenous to stock returns. We use an endogenous switching model with geographic and other exogenous variables as instruments to correct for this endogeneity. Overall, the findings of our study may be categorized in three ways: (1) Twitter sentiment is capitalized in companies' stock returns with users who are more distant from company headquarters being less likely to express positive sentiment. (2) There are other factors that can have a greater impact on stock return. (3) Negative tweets have a larger impact than positive tweets or, counterfactually, positive tweets could have increased the return of companies who received a negative tweet even more. The direct effect of sentiment on daily returns is 0.036 and 0.078 percentage points for positive and negative sentiment, respectively; this translates to an economically significant annualized effect of 9.494 and 21.712%.

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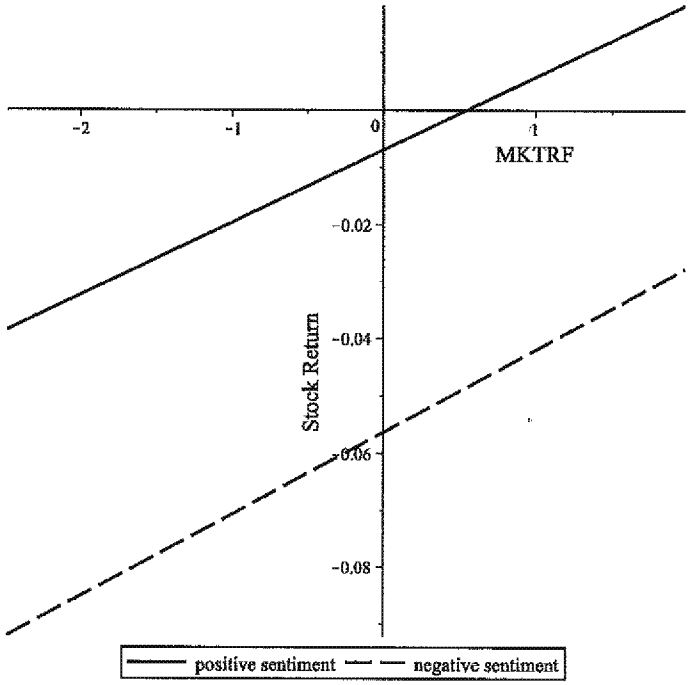

Fig. 4 Social media effect on MKTRF

Our work opens the door for future studies to combine various behavioral influences on stock returns in ways that are robust to significant endogeneity concerns.

Hirshleifer (2001) states the "great missing chapter in asset-pricing theory, I believe, is a model of the social process by which people form and transmit ideas about markets and securities." We work toward understanding this process by combining the effects of sentiment and geography on stock returns.

Our results are consistent with Hirschleifer's argument "that the central task of asset pricing is to examine how expected returns are related to risk and to investor misvaluation." This is evidenced by the duality in our main findings identified above. We show that, while sentiment is important, it is not the main factor affecting returns. In our view, this supports the premise that both risk and misvaluation are crucial to asset pricing.

Appendix A Distributional assumptions and likelihood function

As previously mentioned in the manuscript, Maddala (1983) assumes that the error terms of the selection equation (1) and those of the equations for the two regimes (2) follow a trivariate normal distribution, i.e., $[u, \epsilon_1, \epsilon_2]' \sim N(0, \Sigma)$ with Σ given by (3). In addition, the error term of (1), u, is correlated with the error terms ϵ_1 and ϵ_2 of (2). Consequently, the latter two disturbances have nonzero means conditional on the sample selection process. In fact, if one considers the bivariate processes

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$[u, \epsilon_1]' \sim N\left(0, \begin{bmatrix} 1 & \sigma_{u1} \\ \sigma_{1u} & \sigma_1^2 \end{bmatrix}\right)$ and $[u, \epsilon_2]' \sim N\left(0, \begin{bmatrix} 1 & \sigma_{u2} \\ \sigma_{2u} & \sigma_2^2 \end{bmatrix}\right)$, then it follows that $\mathrm{E}(S_i \cdot \epsilon_{1i}) = \sigma_{1u}\phi\left(z_i'\gamma\right) = \mathrm{E}(S_i \cdot u_i)$ and $\mathrm{E}((1 - S_i) \cdot \epsilon_{2i}) = \sigma_{2u}\left(-\phi\left(z_i'\gamma\right)\right)$ as demonstrated by Lee and Trost (1978). As a result, by conditioning the density function of ϵ_{1i} on $S_i = 1$ and ϵ_{2i} on $S_i = 0$, the conditional expectations of the error terms ϵ_1 and ϵ_2 on the sample selection process are given by:

$$\mathrm{E}(\epsilon_{1i}|S_i = 1) = \sigma_{1u}\frac{\phi\left(z_i'\gamma\right)}{\Phi\left(z_i'\gamma\right)} \tag{A.1}$$

and

$$\mathrm{E}(\epsilon_{2i}|S_i = 0) = -\sigma_{2u}\frac{\phi\left(z_i'\gamma\right)}{\Phi\left(-z_i'\gamma\right)} \tag{A.2}$$

where $\Phi(\cdot)$ and $\phi(\cdot)$ are cumulative density and probability density functions of the standard normal distribution, respectively. Again, by following Lee and Trost (1978), we let f_1 and f_2 be jointly normal probability density functions of $[u, \epsilon_1]'$ and $[u, \epsilon_2]'$, respectively. Therefore, the likelihood function for the endogenous switching model is given by

$$L(\beta_1, \beta_2, \gamma, \sigma_1^2, \sigma_2^2, \sigma_{1u}, \sigma_{2u}) = \prod_{i=1}^{N}\left[\int_{-\infty}^{z_i'\gamma} f_1(\epsilon_{1i}, u_i)\mathrm{d}u_i\right]^{S_i}\left[\int_{z_i'\gamma}^{\infty} f_2(\epsilon_{2i}, u_i)\mathrm{d}u_i\right]^{1-S_i} \tag{A.3}$$

where $\epsilon_{1i} = y_{1i} - x_{1i}'\beta_1$ and $\epsilon_{2i} = y_{2i} - x_{2i}'\beta_2$. Given the symmetrical property of joint probability distributions, from Bayes' theorem we can rewrite the likelihood function in terms of conditional distributions:

$$L(\cdot) = \prod_{i=1}^{N}\left[\int_{-\infty}^{z_i'\gamma} f_1(u_i|\epsilon_{1i}) \cdot g_1(\epsilon_{1i})\mathrm{d}u_i\right]^{S_i}\left[\int_{z_i'\gamma}^{\infty} f_2(u_i|\epsilon_{2i}) \cdot g_2(\epsilon_{2i})\mathrm{d}u_i\right]^{1-S_i} \tag{A.4}$$

where

$$f_1(u_i|\epsilon_{1i}) = \frac{1}{\sqrt{2\pi}\sqrt{1-\rho_1^2}}\mathrm{e}^{-\frac{\left(u_i + \frac{\rho_1\epsilon_{1i}^2}{\sigma_1}\right)}{2(1-\rho_1^2)}} \tag{A.5}$$

$$f_2(u_i|\epsilon_{2i}) = \frac{1}{\sqrt{2\pi}\sqrt{1-\rho_2^2}}\mathrm{e}^{-\frac{\left(u_i + \frac{\rho_2\epsilon_{2i}^2}{\sigma_2}\right)}{2(1-\rho_2^2)}} \tag{A.6}$$

$$g_1(\epsilon_{1i}) = \frac{1}{\sqrt{2\pi}\sigma_1}\mathrm{e}^{-\frac{1}{2\sigma_1^2}\epsilon_{1i}^2} \tag{A.7}$$

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$$g_2(\epsilon_{2i}) = \frac{1}{\sqrt{2\pi}\sigma_2} e^{-\frac{1}{2\sigma_2^2}\epsilon_{2i}^2} \tag{A.8}$$

with $\rho_1 = \sigma_{1u}/\sigma_1\sigma_u$ and $\rho_2 = \sigma_{2u}/\sigma_2\sigma_u$ being the coefficients of correlation of $[u, \epsilon_1]'$ and $[u, \epsilon_2]'$, respectively. Since $g_1(\epsilon_{1i})$ and $g_2(\epsilon_{2i})$ do not depend on u_i, from the constant factor rule in integration, the likelihood function can be rewritten as:

$$L(\cdot) = \prod_{i=1}^{N} \left[g_1(\epsilon_{1i}) \int_{-\infty}^{z_i'\gamma} f_1(u_i|\epsilon_{1i}) \mathrm{d}u_i \right]^{S_i} \left[g_2(\epsilon_{2i}) \int_{z_i'\gamma}^{\infty} f_2(u_i|\epsilon_{2i}) \mathrm{d}u_i \right]^{1-S_i} \tag{A.9}$$

The integrands of (A.9) can be simplified with the following variables transformation: $\zeta_{1i} = \left(z_i'\gamma + \rho_1\epsilon_{1i}/\sigma_1\right)/(1-\rho_1^2)^{0.5}$ and $\zeta_{2i} = \left(z_i'\gamma + \rho_2\epsilon_{2i}/\sigma_2\right)/(1-\rho_2^2)^{0.5}$. Finally, by taking logarithms from both sides we derive the following log-likelihood function:

$$\ln L(\cdot) = \sum_{i=1}^{N} S_i \left[\ln g_1(\epsilon_{1i}) + \ln \int_{-\infty}^{\zeta_{1i}} \phi(i)\mathrm{d}i \right] + (1 - S_i) \left[\ln g_2(\epsilon_{2i}) + \ln \int_{\zeta_{2i}}^{\infty} \phi(i)\mathrm{d}i \right] \tag{A.10}$$

which is consistent with (4), after expressing $g_1(\epsilon_{1i})$ and $g_2(\epsilon_{2i})$ in logarithmic form and dropping the constant term $(-\ln\sqrt{(2\pi)})$ out of (A.10).

The log-likelihood function can be optimized with a modern algorithm of unconstrained nonlinear optimization with analytical gradient based on the following first partial derivatives:

$$\frac{\partial L(\cdot)}{\partial \beta_1} = \sum_{i=1}^{N} S_i \left[-\frac{\epsilon_{1i}x_{1i}'}{\sigma_1^2} - \frac{\phi(\zeta_{1i})\rho_1 x_{1i}'}{\sigma_1\sqrt{1-\rho_1^2}\Phi(\zeta_{1i})} \right] \tag{A.11}$$

$$\frac{\partial L(\cdot)}{\partial \beta_2} = \sum_{i=1}^{N} (1 - S_i) \left[-\frac{\epsilon_{2i}x_{2i}'}{\sigma_2^2} + \frac{\phi(\zeta_{2i})\rho_2 x_{2i}'}{\sigma_2\sqrt{1-\rho_2^2}\Phi(-\zeta_{2i})} \right] \tag{A.12}$$

$$\frac{\partial L(\cdot)}{\partial \gamma} = \sum_{i=1}^{N} S_i \left[\frac{\phi(\zeta_{1i})z_i'}{\sqrt{1-\rho_1^2}\Phi(\zeta_{1i})} \right] - (1 - S_i) \left[\frac{\phi(\zeta_{2i})z_i'}{\sqrt{1-\rho_2^2}\Phi(-\zeta_{2i})} \right] \tag{A.13}$$

$$\frac{\partial L(\cdot)}{\partial \sigma_1} = \sum_{i=1}^{N} S_i \left[-\frac{\epsilon_{1i}^2}{\sigma_1^3} - \frac{1}{\sigma_1} - \frac{\rho_1\phi(\zeta_{1i})\epsilon_{1i}}{\sigma_1^2\sqrt{1-\rho_1^2}\Phi(\zeta_{1i})} \right] \tag{A.14}$$

$$\frac{\partial L(\cdot)}{\partial \sigma_2} = \sum_{i=1}^{N} (1 - S_i) \left[-\frac{\epsilon_{2i}^2}{\sigma_2^3} - \frac{1}{\sigma_2} + \frac{\rho_2\phi(\zeta_{2i})\epsilon_{2i}}{\sigma_2^2\sqrt{1-\rho_2^2}\Phi(-\zeta_{2i})} \right] \tag{A.15}$$

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$$\frac{\partial L(\cdot)}{\partial \rho_1} = \sum_{i=1}^{N} S_i \left[\frac{\phi(\zeta_{1i}) \left(\epsilon_{1i}\sqrt{1-\rho_1^2} + \rho_1 \sigma_1 \zeta_{1i} \right)}{\Phi(\zeta_{1i})(1-\rho_1^2)\sigma_1} \right] \tag{A.16}$$

$$\frac{\partial L(\cdot)}{\partial \rho_2} = \sum_{i=1}^{N} (1-S_i) \left[\frac{\phi(\zeta_{2i}) \left(-\epsilon_{2i}\sqrt{1-\rho_2^2} - \rho_2 \sigma_2 \zeta_{2i} \right)}{\Phi(-\zeta_{2i})(1-\rho_2^2)\sigma_2} \right] \tag{A.17}$$

The Hessian of the log-likelihood function, which can be used to calculate the Fisher information matrix to derive the covariance matrix of the maximum likelihood estimates, can be computed directly by second partial differentiation of (A.11) thru (A.17). However, the analytical expression of the Hessian matrix is not reported for the sake of space and is available upon request from the authors.

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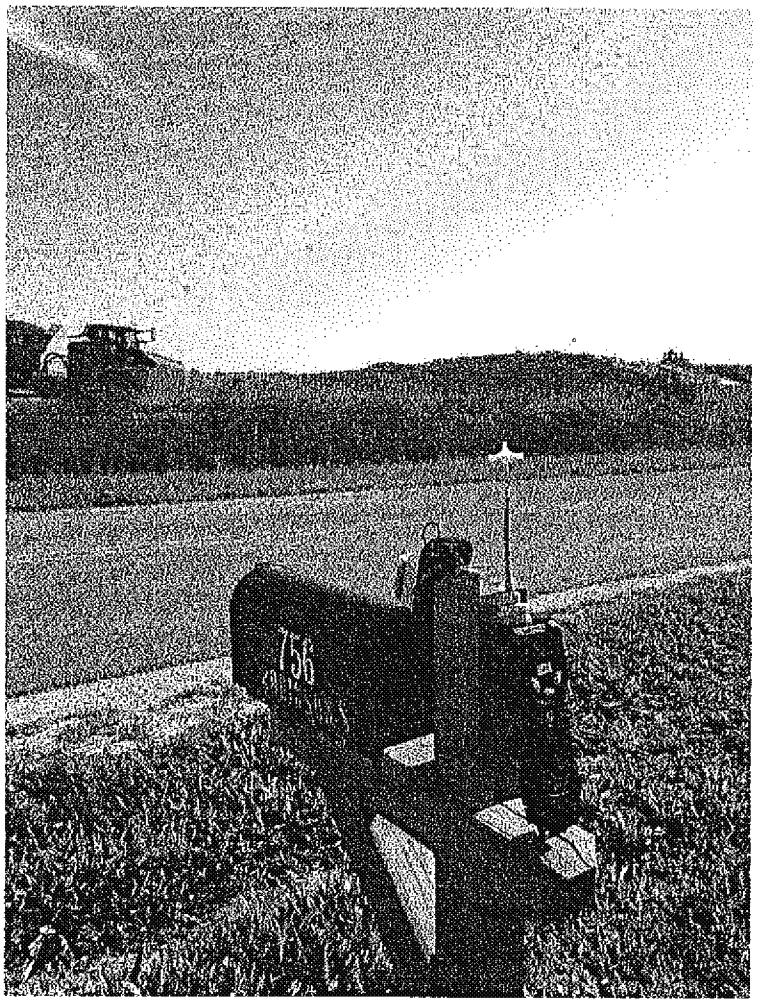
EXHIBIT 6

FOIA 2021-001987

Air Quality Impacts of the Stone's Throw Landfill in Tallassee, Alabama: A Pilot Study

Practicum in Climate Change, Sustainability, and Public Health



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Executive Summary

In this pilot study, we investigated health and air quality impacts of the Stone's Throw Landfill on the Ashurst Bar/Smith Community in Tallassee, Alabama through monitoring ambient (outdoor) air quality and collecting information on the health and perceptions of residents. The study took place between March 12th and March 23rd, 2018 and was conducted by graduate students as a part of a practicum course in Climate Change, Sustainability, and Public Health at the Yale School of Public Health and in collaboration with the Environmental Justice Clinic of Yale Law School and Ashurst Bar/Smith community members, as well as with input from the Department of Graduate Public Health at Tuskegee University. The pilot study was intended to inform the formation of a research agenda to evaluate air quality and other impacts of the landfill on the Ashurst Bar/Smith Community.

Air Monitoring

We aimed to provide a preliminary assessment of outdoor ambient air quality through monitoring at six locations within a 1.5-mile radius of the landfill. We focused on common landfill emissions that are known to cause human health problems, including hydrogen sulfide (H_2S), total non-methane volatile organic compounds (NMVOCs), particulate matter (PM) size less than 2.5 micrometers ($PM_{2.5}$), and asbestos. We also conducted truck traffic counts and monitored ambient noise levels as these variables are known to impact quality of life. Daily weather conditions including wind direction and speed were also recorded.

H_2S levels ranged from 0 to 5 ppb, with average values over periods of one to six hours ranging from 0 to 3.3 ppb. The highest level of 5 ppb is slightly below the lower limit for olfactory

effects of 8 ppb.[1] Warmer temperatures and higher humidity conditions may increase H_2S levels and we suggest monitoring in the summer months and when smells are particularly potent. NMVOC levels ranged from 0 to 4336 ppb, with average values over periods of one to six hours ranging from 0 to 2601 ppb. For comparison, in 2013, the national annual average NMVOC concentration across Canada was 8.5 ppb (measured as toluene equivalents).[2] The United States does not have federal NMVOC standards. However, under the German guideline for schools, long-term NMVOC concentrations should not exceed 220 ppb.[3] Future studies should consider monitoring for longer periods and for specific NMVOCs, with a focus on hazardous air pollutants (HAPs; e.g., benzene, vinyl chloride) and NMVOCs that are specifically associated with landfills.

$PM_{2.5}$ concentrations ranged from 0 to 58.5 $\mu g/m^3$, with average concentrations ranging from 3.2 to 14.5 ug/m^3. Although the highest average concentration (over a period of 6 hours) did not exceed the World Health Organization or U.S. Environmental Protection Agency 24-hour limits, we note that because negative health impacts from $PM_{2.5}$ have been observed even at the lowest levels of exposure, the levels observed in the Ashurst Bar/Smith community are a cause for concern.[4] Future studies should monitor for PM2.5 for longer periods (at least 24 hours).

Finally, we monitored for asbestos particles because the landfill accepts friable and non-friable asbestos. Our monitoring was limited to one day at one location and revealed no significant amount of asbestos in the air. We suggest conducting frequent monitoring for asbestos particles because even short-term exposure can cause a type of cancer called mesothelioma decades later.

Noise and traffic

We monitored noise in one-or two-hour increments. The highest maximum noise levels (all daytime) ranged from 76.5 dBA to 98.1 dBA. The lowest and highest time-weighted average noise levels were 35.2dBA and 57.3 dBA. We were unable to find a community noise standard for the state of Alabama or for Alabama municipalities, so we used the Connecticut Noise Standard to provide context. If Connecticut's noise standards were applied to Tallassee, Stone's Throw Landfill would be in violation, with each daytime maximum noise level greater than the guideline of 61 dBA. Further daytime monitoring is recommended. In addition, nighttime monitoring is recommended to determine whether the Connecticut night time limit of 51dBA is exceeded.

Many community members expressed concerns associated with trucks, including their speed, noise, frequency, and damage to the road due to the ongoing traffic. The highest hourly vehicle count we observed was 48 (including 23, 18-wheeled semi-trucks).

Health survey

We designed and conducted a community health survey to assess the health impacts of the landfill on the community and the perceptions of the community of the landfill. A total of 74 surveys were completed and returned by community members. Most respondents were very concerned or extremely concerned about issues relating to the landfill, including smell, noise, traffic, air pollution, health impacts, property values, animals, and litter. Twenty-nine percent of respondents reported being told by a doctor that they have asthma and 21% reported being told

by a doctor that they have chronic obstructive pulmonary disease. For both conditions, these figures were almost double the statewide prevalence in Alabama.

Recommendations and next steps

The research presented in this pilot study is highly preliminary and limited. However, this initial research identified some key warning signs, including hydrogen sulfide levels approaching the odor threshold, high non-methane volatile organic compound (NMVOC) levels of unknown composition, transient elevated $PM_{2.5}$ levels, high noise levels in relation to community standards, high prevalence rates of asthma and COPD, and, importantly, high levels of concern in the community about landfill impacts. We suggest prioritizing future planning and public and private research through collaborative partnerships with the Yale School of Public Health, the Department of Graduate Public Health at Tuskegee University, and Ashurst Bar/Smith community members, using a community-based participatory research approach if favored by the community. Furthermore, we suggest that the community consider seeking support form ADEM, the landfill, the City of Tallassee, or the county, for monitoring efforts.

Further air monitoring for H_2S, NMVOCs, $PM_{2.5}$, and asbestos is clearly indicated. In general, we suggest that air quality monitoring should be performed for longer periods of time at various locations both daily and annually because air quality can change dramatically according to time of day, day of week (weekdays versus weekends), season, landfill activity, and weather conditions. In addition, it is particularly important to monitor at locations downwind of the landfill, which was difficult to do with our limited amount of time.

For community members that are interested in continuing air pollution monitoring to gather more data, we see the greatest opportunities in monitoring particulate matter and noise, due to the low cost and technical accessibility of the monitoring devices: Purple Air Monitor for $PM_{2.5}$ (approximately $250) and the NIOSH Noise App (available free for download on iPhones). Also feasible would be truck traffic counts by community members to provide additional information on the impacts of the landfill on quality of life and health, as well as provide data on the potential correlation between truck traffic and emissions.

In addition to air monitoring, testing of water and soil samples for possible pollution from landfill runoff is indicated. Initial soil test is already being planned or carried out by Tuskegee University researchers. Monitoring of indoor air quality should be considered as well.

The elevated prevalence of asthma and COPD, although based on a relatively small sample size, are of obvious concern. The main limitation of our community health survey was its relatively small sample size. We recommend collecting more health surveys from the community to increase the sample size and develop more robust data on the health impacts of the landfill.
We recommend that the community consider requesting the following:

1) that the Alabama Department of Environmental Management (ADEM) and/or the Stone's Throw Landfill publicly release emissions history data as well as information about landfill contents;
2) that the landfill or government agencies provide resources for offsite air, soil, dust, and water monitoring;
3) that the City of Tallassee implement a community noise ordinance for Tallassee;

4) that ADEM improve enforcement of landfill permit terms, such as enforcement of hours of operation and ensuring adequate cover of any open face of the landfill;
5) that ADEM implement more stringent landfill policies including i) requiring that any open face of the landfill be covered at night; ii) withdrawal of the current permit variance that allows the landfill to have two simultaneous open faces; and iii) requirement that the landfill clean up trash from the sides of the road, particularly along Washington Boulevard;
6) that the Alabama Department of Transportation (ALDOT) or local traffic authorities improve traffic safety (e.g., traffic lights, lower speed limits, speed bumps, restricted hours for trucks, a dedicated private road for landfill truck traffic);
7) that ALDOT provide resources for community-based traffic monitoring efforts that could document adverse impacts of truck traffic;
8) that ADEM increase buffers and/or restrict any future expansion of size of the landfill; and
9) that the Alabama Department of Public Health ensure access to comprehensive health care for all community members.

I. Introduction

This pilot project aimed to provide a preliminary baseline assessment of ambient air quality and community health in the Ashurst Bar/Smith community, which is located adjacent to the Stone's Throw Landfill in Tallassee, Alabama, as well as to assess priorities for future study. To identify potential adverse health impacts, we (1) conducted a literature review of landfill emissions and associated health effects, (2) examined the emissions history of Stone's Throw Landfill and the historical context of the surrounding Ashurst Bar/Smith Community, and (3) monitored ambient air quality for human health and environmental pollutants, monitored noise and truck traffic, and (4) conducted a community health survey. The air monitoring and health survey took place between March 12th and March 23rd, 2018 and was conducted by graduate students as a part of a practicum course in Climate Change, Sustainability, and Public Health at the Yale School of Public Health and in collaboration with the Environmental Justice Clinic of Yale Law School and Ashurst Bar/Smith community members, as well as with input from the Department of Graduate Public Health at Tuskegee University.

II. Literature Review of Landfill Emissions and Associated Health Effects

We conducted a literature review of the likely air pollutants and emissions that are associated with municipal solid waste (MSW) landfills that primarily receive household waste, but also receive other types of non-hazardous waste such as commercial waste, industrial waste, construction and demolition debris, and sludge from wastewater treatment plants.

We identified the following priority emissions for monitoring, based on the threat they pose to human health and the likelihood of elevated concentrations near the landfill: hydrogen sulfide (H_2S), non-methane volatile organic compounds (NMVOCs), particulate matter (PM) associated with transport and handling of waste, and asbestos.

In the literature review below, we present reference levels of various landfill emission types to be used in analyzing our data later in the report. It should be noted that for some gases we present reference levels for direct landfill gas emissions — as opposed to ambient air near a landfill — which is not a representation of the type of monitoring that we performed or of the levels of emissions that will likely be reaching communities. However, we included these levels because they were more accessible from the literature than ambient air levels and can offer an upper limit for ambient air levels, since landfill gas diffuses into ambient air.

Hydrogen Sulfide

H_2S, the main odorous component in landfill gas, is produced from the decomposition or biodegradation of waste through the activity of sulfur-reducing bacteria. The generation of H_2S is impacted by temperature, moisture content, pH levels, and waste composition and volume, with the highest levels detected in the summer months.[5] Concentrations of H_2S in ambient air are typically less than 1 ppb, with concentrations from natural sources ranging from 0.11 to 0.33 ppb.[1,6] On the other hand, H_2S concentrations in ambient air near landfills has been shown to be undetectable to greater than 100 ppb.[5] Heancy et al. conducted a study of a municipal solid waste regional landfill in North Carolina, performing continuous air monitoring of ambient air at the

community boundary near the landfill during January-February and September-November 2009. They reported a range of 0 to 15 ppb with 15-minute average concentrations of 0.22 ± 0.52 ppb.[8]

The human health impacts of H_2S (Table 1) depend on exposure duration, frequency, and concentration. Exposure from 8 to 200 ppb produces olfactory effects, while 20,000 to 50,000 ppb produces eye irritation, 50,000 to 150,000 ppb produces respiratory irritation and severe eye damage, and 250,000 ppb and above produces risk of death.[1] Sociological studies have shown that odors can cause extreme annoyance and emotional disturbances, as well as a decrease in property values and economic disadvantages.[9] In the Heaney et al. study mentioned previously, 23 participants kept twice-daily diaries for 14 days about odor intensity, changes to daily activities, moods, and other physical symptoms. Odor was strongly associated with alterations of daily activities, mood states, mucosal irritation, and upper respiratory symptoms, suggesting "air pollutants from a regional landfill negatively impact the health and quality of life of neighbors."[8]

Table 1: Health effects of H_2S at different exposure levels[1]

Exposure (ppb)	Health Effects
8-200	Olfactory threshold
20,000	Sense of smell to gas lost
20,000-50,000	Eye Irritation
50,000	Prolonged exposure may cause pharyngitis and bronchitis
60,000	Prolonged exposure may cause conjunctivitis and eye pain
150,000	Irritation of upper respiratory tract
250,000	Pulmonary edema with risk of death
500,000	Very dangerous
1,000,000	Loss of consciousness
1,000,000-2,000,000	Immediate collapse with paralysis of respiration

Non-Methane Volatile Organic Compounds

Typically, landfill gas contains trace amounts (less than 1%) of Non-Methane Volatile Organic Compounds (NMVOCs).[10] We focus on NMVOCs because methane, although a VOC and a potent greenhouse gas, is not directly harmful to human health. Many NMVOCs, such as benzene, chloroform, toluene, vinyl chloride, and others, are classified as hazardous air pollutants (HAPs), and regulated by the EPA under the Clean Air Act.[11] Most of the NMVOC emissions from landfills result from the volatilization of organic compounds contained in the landfilled waste and from biological processes and chemical reactions within the landfill.[10] The Clean Air Act's regulatory default for all NMVOC concentrations in landfill gas is 4,000 ppm. The EPA's *Compilation of Air Pollutant Emission Factors (AP-42)* reports a default

concentration of 595 ppm of NMVOC landfill gas for municipal solid waste in cases where there is no or unknown co-disposal of hazardous waste.[10] The general public is not directly exposed to landfill gas, which allows for these relatively high regulatory defaults. There are no standards for NMVOC concentrations in ambient air, to which the general public is exposed. If there were such standards, we speculate that they would be substantially lower than the regulatory default for landfill gas.

NMVOCs react with nitrogen oxides and sunlight to form ground-level ozone.[12] People with asthma, and children and older adults, are the most at risk for the adverse health effects of ozone. Short-term exposure to ozone can cause muscles in the airways to constrict, leading to wheezing and shortness of breath; it can also increase the frequency of asthma attacks, lung infection, and cause chronic obstructive pulmonary disease. Long-term exposure to ozone also may increase the risk of death from respiratory causes, but the evidence is not as strong as the evidence for short-term exposure.[13]

The EPA's *Air Emissions from Municipal Solid Waste Landfills – Background Information for Proposed Standards and Guidelines* shows a summary of NMVOCs found in landfill gas.[14] The most frequently detected compounds are trichloroethene, benzene, and vinyl chloride with average concentrations of 3800 ppb, 3520 ppb, and 7040 ppb, respectively.[14] Table 2 shows a summary of health effects associated with certain NMVOC MSW landfill emissions components, occupational exposure thresholds for health risks, and average concentrations reported by USEPA.[14] Table 3 shows guidelines for indoor total NMVOC levels in school

buildings produced by the German Federal Environment Agency's Indoor Air Hygiene Commission.[3] We are unaware of guidelines for outdoor NMVOC levels.

Table 2: Health effects associated with selected NMVOCs emitted from MSW landfills.[14]

NMVOC	Health Effects	TLV-TWA (ppb)*	TLV-STEL (ppb)**	Average Concentration in Landfill Gas (ppb)
Benzene	Leukemia, aplastic anemia, multiple myeloma, cytogenic changes	10,031	170,210	3,520
Carbon tetrachloride	Damage to liver, lung, kidney, central nervous system, possible embryotoxicity	4,922	10,002	1,490
Chloroform	Damage to liver, lung, kidney, central nervous system, probable carcinogen	10,026	-	60
Ethylene dichloride	Damage to central nervous system, probable carcinogen	5,041	19,913	143,000
Methylene chloride	Probable carcinogen	49,868	-	20,000
Trichloroethylene	Probable carcinogen	50,016	99, 845	3,800
Vinyl chloride	Central nervous system effects; brain, liver and lung cancer; possible teratogen -- human carcinogen	5,086	-	7,040

*TLV-TWA: (threshold limit value, time weighted average) is the time-weighted average concentration for a normal 8 hrs workday and a 40 hrs work week, which all workers are exposed day after day, without adverse health effects.

**TLV-STEL (threshold limit value, short-term exposure limit) is the time-weighted average concentration to which workers can be exposed continuously for a short period of time (no longer than 15 min and no more than four times per day) without suffering from irritation, chronic or irreversible tissue damage or narcosis of sufficient degree to increase accidental injury or reduce work efficiency, and provided that the daily TLV-TWA is not exceeded.

Table 3: German guidelines for indoor total NMVOC levels in school buildings[3]

Level	Total NMVOCs (ppb)	Hygienic rating	Exposure limit
1	0-65	Insignificant., provided that individual NMVOC limits are not exceeded. Below 65 ppb is the target value, or goal.	No limit
2	65-220	Still hygienically insignificant, provided that individual NMVOC limits are not exceeded. However, points to need for more ventilation.	No limit
3	220-660	Abnormal. A level of 220 ppb should not be exceeded in the long term. An assessment of individual NMVOC levels is recommended.	12 months
4	660-2200	Hygienically significant. An assessment of individual NMVOC levels should be conducted	1 month
5	2200-5500	Hygienically unacceptable. At levels >5500 ppb, the space should not be used at all.	<1 hour/day

Particulate Matter

Particulate matter (PM) is a complex mixture of solid and liquid particles of various sizes that become suspended in the air.[15] The chemical composition of these airborne particles can vary, but typically include organic matter, acids (nitrates and sulfates), organic chemicals, metals, soil or dust particles, and allergens.[15] According to the World Health Organization (WHO), PM affects humans more than any other pollutant. PM enters the human body largely through the respiratory tract[15] and smaller particles may enter the bloodstream.[15] Health conditions associated with PM inhalation include irritation of the eyes, nose and throat, decreased lung function, coughing, phlegm, chest tightness, shortness of breath, acute bronchitis, aggravated asthma, irregular heartbeat, nonfatal heart attacks, strokes, lung cancer, and premature death.[15] The severity of health consequences as a result of exposure depend largely on the duration, concentration, size, and chemical composition of the particles[16] but there is a demonstrated dose-

response relationship between exposure and morbidity and mortality, both daily and over time.[16] However, it is important to note that there is no safe level of PM for humans, and negative health impacts have been observed even at the lowest levels of PM exposure.[15]

$PM_{2.5}$ is particulate matter 2.5 micrometers or less in diameter, whereas PM_{10} is particulate matter 10 micrometers or less in diameter. Table 4 shows the U.S. EPA and WHO guideline limits for $PM_{2.5}$ and PM_{10}.

Table 4: $PM_{2.5}$ and PM_{10} 24-hour and annual exposure limits listed by the U.S. Environmental Protection Agency (EPA)[17] and the World Health Organization (WHO)[4]

	$PM_{2.5}$ (μg/m³)		**PM_{10} (μg/m³)**	
	24-hour	Annual	24-hour	Annual
EPA	35	12	150	N/A
WHO	25	10	50	20

Landfills have been shown to emit significant levels of PM.[18] This is likely tied to the various day-to-day activities involved with maintaining a landfill including the operation of diesel-powered vehicles, the movement of these vehicles on unpaved dirt roads, the act of tipping waste into the landfill, waste compaction, and the operation of methane torches.[19] PM_{10} has been measured at levels as high as 4,597 μg/m³ at a landfill site in Crete, Greece.[19]

Asbestos

Stone's Throw Landfill accepts friable and non-friable asbestos.[20] Friable asbestos is material that contains more than 1% asbestos and can be pulverized to powder by the pressure of a human hand, whereas non-friable asbestos is material that contains more than 1% asbestos but cannot be

pulverized to powder by a human hand. Chronic inhalation exposure to asbestos can lead to a lung disease called asbestosis. Symptoms include shortness of breath, difficulty in breathing, and coughing. Asbestosis is a progressive disease meaning the severity of symptoms tends to increase with time, even after the exposure has stopped. Furthermore, because even short-term exposure to asbestos can cause a type of cancer called mesothelioma decades later. Additional health problems include lung cancer, pleural disease, pulmonary hypertension, and immunological effects. A person who has been exposed to asbestos should visit a medical professional. After exposure has occurred, asbestos cannot be removed from the lungs, but preventative measures can take place including having regular health exams, quitting smoking, and getting regular vaccinations against flu and pneumococcal pneumonia.[21]

Summary of Epidemiological Studies

The potential health risk to populations living near landfills is an issue of ongoing public health concern.[22] While there have been some scientific studies that indicate a link between living in close proximity to a landfill site and adverse health effects, overall, the scientific literature on the health effects of landfills is inconclusive or, at best, "suggestive."[23] Particularly with respect to cancer and mortality rates, many review articles state that there is inadequate or insufficient evidence linking landfills with health effects.[24,25,26] A 2007 WHO Report describes the scientific evidence of the health effects of landfills, based on several recent reviews, and reports that there is lack of consistency, a high level of confounding factors, and poor data on exposure information.[27] Similarly, a review by Vrijheid 2000 found that the "increases in risk of adverse health effects (low birth weight, birth defects and certain types of cancers) and an increased prevalence of self–reported health symptoms, such as fatigue, sleepiness and headaches, have been reported near both individual landfill sites and in some multi-site studies, although risks to health from landfill sites were hard to quantify because of lack of direct exposure measurement and of the role of confounding factors and suggested more interdisciplinary research to improve levels of knowledge on risks to human health of waste disposal in landfill sites."[28]

III. Overview of the Stone's Throw Landfill and Ashurst Bar/Smith Community

Stone's Throw Landfill, located in Tallassee, Alabama, is classified as a municipal solid waste landfill by the State of Alabama, Department of Environmental Management (ADEM). The landfill was purchased and re-opened by the current owners, Advanced Disposal, in 2002. The most recent permit was granted to Advanced Disposal by ADEM in December 2016[29] and the

next permit renewal date is January 31, 2022. The landfill is currently permitted to process up to 1,500 tons of waste daily, including asbestos and sewage, and claims to have the capacity to continue accepting waste through 2053. ADEM is primarily responsible for overseeing monitoring, as well as regulating federal and state laws within the landfill.

The total permitted area for the Stone's Throw Landfill is approximately 175 acres with 125 acres permitted for MSW disposal operations and 5.8 acres permitted for construction and demolition disposal operations. [29] The facility is permitted to accept wastes from all counties in Alabama, and Harris, Muscogee, and Troup counties in Georgia, generating a high volume of truck traffic through residential areas of Tallassee, which has caused community concern related to speed limits, road conditions (e.g., potholes), noise, and safety.

Community Demographics, Protests, and Concerns

Stone's Throw Landfill is located in the historic African American Ashurst Bar/Smith neighborhood of Tallassee. This neighborhood is not only historic because of its age, but also because of its origins. Following the Civil War and abolition of slavery, newly freed enslaved people were able, through the Freedman's Bureau, to purchase land and settle in this community. The original landowners then passed their land to their heirs, maintaining the community over the generations.

According to 2010 census data, 1,649 people live within a 3-mile radius of the landfill, comprised of 612 households. Of those, 52% are African-American (52%) and 68.5% are low income. [30] Within a 1-mile radius of the landfill, the population is approximately 117 people of

which 71% are African-American[31] and 99% are low income.[32] However, residents of the Ashurst Bar/Smith Community (which is most directly adjacent to the landfill) suggest that these figures underestimate the proportion of black residents in the neighborhood, because census block groups are far larger than the Ashurst Bar/Smith Community. Based on local knowledge, it is estimated that the community living closest to the landfill is approximately 98% black (Figure 1).[33]

According to the United States Environmental Protection Agency's EJSCREEN tool, the community living within 1 mile of the Stone's Throw Landfill is above the 75th percentile nationally for a number of environmental justice variables (Figure 2).[32]

Ex. 6 Personal Privacy (PP)

Figure 1: Property map of Tallassee and the Ashurst Bar/Smith Community depicting land ownership in the community. Pink boxes are property lots owned by African Americans. Blue boxes are property lots owned by non-African Americans. White boxes were not considered in the making of this map. The orange blocks are owned by Advanced Disposal and the red lines diagonal lines signify property recently acquired by Advanced Disposal. Map dated February 2018.

EJSCREEN Report (Version 2017)
1 mile Ring Centered at 32.515204,-85.830992
ALABAMA, EPA Region 4
Approximate Population: 117
Input Area (sq. miles): 3.14

Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
EJ Indexes			
EJ Index for Particulate Matter (PM 2.5)	86	82	82
EJ Index for Ozone	87	79	80
EJ Index for NATA* Diesel PM	76	68	68
EJ Index for NATA* Air Toxics Cancer Risk	85	82	84
EJ Index for NATA* Respiratory Hazard Index	84	81	81
EJ Index for Traffic Proximity and Volume	68	63	64
EJ Index for Lead Paint Indicator	90	90	85
EJ Index for Superfund Proximity	80	74	71
EJ Index for RMP Proximity	81	72	72
EJ Index for Hazardous Waste Proximity	75	67	67
EJ Index for Wastewater Discharge Indicator	97	98	96

Figure 2: EJSCREEN Report for 1-mile radius around Stone's Throw Landfill. Accessed 4/26/2018. NATA: National Air Toxics Assessment; RMP: Risk Management Plan[32]

The Ashurst Bar/ Smith Community Organization joined a Title VI complaint against ADEM in 1999 filed by the Center for Race, Poverty, and the Environment claiming that ADEM engaged in a pattern and practice of discrimination by approving the siting of landfills in African American communities. In 2003, the Ashurst Bar/Smith Community Organization filed a complaint with the Environmental Protection Agency under Title VI of the Civil Rights Act. The complaint asserted that ADEM violated the civil rights of the community by permitting the landfill due to the unjustified, disparate negative impact of the landfill on African-Americans. The 2003 complaint remained open at EPA until 2017, when the Ashurst Bar/Smith Community Organization and four other communities across the country sued EPA for failing to investigate in a timely way.[34] On April 2, 2018, a federal court ruled that EPA violated the law by waiting a decade or more to investigate civil rights complaints within the time frame mandated by the law. The court's decision came in response to the lawsuit litigated by Earthjustice and Yale Law School's Environmental Justice Clinic. The lawsuit challenged EPA's failure to protect civil

rights in an environmental context. (See Appendix I for a full timeline of the Ashurst Bar/Smith Community Organization activities related to the landfill).

Residents of the Ashurst Bar/Smith Community have reported health concerns including asthma and other respiratory problems, nosebleeds, vomiting, and skin problems in children, as well as breast, colon, kidney, and prostate cancers, asthma and other respiratory problems, memory problems, sleep apnea, and diabetes in adults. Community members also have expressed concerns related to safety and traffic, quality of life, property rights and values, and the ability to grow food.[35]

Stone Throw's Landfill Site History and Overview

Site History

A landfill has existed on the site, intermittently through a variety of owners and operators, since 1980, with expansion of the landfill beginning in 1991 through an agreement between Tallapoosa County and Tallassee Waste Disposal Center. Shortly thereafter, community members began to formally voice concerns about the landfill.

Composition and Sources of Waste

The following waste is approved for disposal at Stone's Throw Landfill: municipal solid waste, construction and demolition debris, yard waste, inert waste, sludge, wastewater biosolids, friable and non-friable asbestos, industrial waste, foundry sand, ash, and contaminated soil (cite Stone's Throw Landfill website).[20] In addition, other special waste approved by ADEM may also be accepted.[29] The proposed daily maximum volume to be received at the landfill is listed as 1,500 tons in the Municipal Solid Waste permit approved by ADEM in September 2016. The facility

accepts wastes from all counties in Alabama, and Harris, Muscogee, and Troup counties in Georgia. The landfill accepts waste from Advanced Disposal subsidiaries and multiple third-party haulers.[29]

Emissions History

A detailed, though often incomplete, report of emissions from the landfill is listed in the Enforcement and Compliance History Online (ECHO) system for the public, run by the EPA and a summary is provided below (Table 5).[30]According to the current permit, in addition to the pollutants listed below, the landfill is required to monitor the following potential pollutants on a monthly basis: cadmium, chemical oxygen demand, chromium, copper, oil & grease, pH, rainfall, solids (settleable, total dissolved, total suspended) and turbidity.[36,37] It is important to note that monitoring near-surface gases, like those common in landfills, are not useful in determining impacts on the health of nearby residents but the information can be used to indicate if high levels of the gases are escaping from the landfill.[9]

Table 5: Pollutant emission data from ECHO for Stone's Throw Landfill in Tallassee, Alabama. Data is recorded by Stone's Throw Landfill under the authority of ADEM. $MTCO_2e$ is the amount of methane emissions equivalent to one metric ton of carbon dioxide emissions and a common way to record greenhouse gas emissions.

Pollutant	2008 Emissions	2011 Emissions	2014 Emissions
Hazardous air pollutants (HAPs (lbs)	12,512	2,481	15,424
NMVOCs (lbs)	496,800	4,620	10,440
Methane ($MTCO_{2e}$)	N/A	71,946	112,289
PM_{10} (lbs)	1,599,040	43,626	64,104
$PM_{2.5}$ (lbs)	446,280	13,826	16,444

Summary of Emissions by Pollutant

Hydrogen Sulfide

We found no public record of H_2S emissions in our search of EPA and Alabama databases. We included H_2S in our monitoring plan as it is a commonly known pollutant from landfills and has the potential for negative impacts on human health and quality of life.[1] It is possible that the landfill reports H_2S data to ADEM, but that it is not released publicly. Future studies could inquire whether data on H_2S emissions could be made available for analysis.

Non-Methane Volatile Organic Compounds

NMVOC emissions have decreased significantly at the Stone's Throw Landfill from 496,800 pounds in 2008 to 10,440 pounds in 2014 (Table 5). The cause of the decrease is likely advances in gas capturing technology and more restrictive environmental regulations.

Particulate Matter

From 2008 to 2011 the data shows a significant decrease in both $PM_{2.5}$ and PM_{10}, likely due to greater restrictions on emissions and better management practices. From 2011 to 2014 there was an increase in PM, likely because the landfill expanded in size.

Hazardous Air Pollutants

Hazardous air pollutants (HAPs) are known to cause serious health effects including cancer and birth defects as well as adverse environmental effects. A complete list of EPA regulated HAPs can be found at epa.gov/haps; some of the most common HAPs are benzene, which is found in gasoline and is also an NMVOC, and metals including cadmium, mercury, and lead. The data show an increase of 3,000 pounds of HAP emissions at Stone's Throw Landfill between 2008 (12,512 pounds) and 2014 (15,424 pounds).

Methane

Decomposing waste in landfills releases methane. A previous report by Glen B. Smith of Environmental Consulting and Engineering to ADEM on the status of methane emissions from the Stone's Throw Landfill in October 2002 says "Following analysis of the data and field observations from the sampling event, it appears that the areas which have a tendency to hold water and remain saturated, have resulted in an increased production of methane gas from

moisture. . . . the reduction of moisture introduced into the soils should also reduce the amount of methane produced in the area." However, it appears that methane production has actually been increasing (Table 5), perhaps because the landfill is continuously expanding in size.

Compliance and Violations

According to the Integrated Compliance Information System, a federally run compliance program, the air facility status of the landfill is "operating major emissions." The landfill is obligated to abide by state and federal regulations under ADEM. Advanced Disposal claims that it attempts to reduce releasing of pollutants by implementing new technologies, and that it has "never had a Notice of Violation (NOV) since opening."

In 2015, the landfill received two violation warning letters, one for storm water construction and the other for not reporting information.[38] Stone's Throw Landfill has had a number of minor violations filed including a recent violation on February 9th, 2018; however, information is not currently available about the nature of the violation. Reports of violations are available through ADEM. Additional information can be found on the EPA ECHO website, under the "Three Year Compliance By Quarter" section.[30] Federal and state databases do not contain any records of current violations of federal or state regulations by the landfill. Although monitoring in this pilot study focuses on air emissions, it is worth noting that recently, the landfill has been named as a defendant in a number of nuisance suits, including *Tarver v. Advanced Disposal Services South, LLC, et al.*, CV-2017-900076 (Amended Complaint filed Circuit Court, Macon County, AL, July 27, 2018),[39] which alleged that the landfill illegally discharged excess leachate and hazardous

chemicals and compounds into the Tallassee Wastewater Treatment system and into the Tallapoosa River, causing harm to downstream community residents.

IV. Methodology

This project was approved by the Yale University Institutional Review Board as an exempt project.

Ambient Air Monitoring

Based on the community's health concerns, our literature review of landfill emissions, our examination of the emissions history of the Stone's Throw Landfill, and recommendations from air monitoring experts, we chose to focus our air monitoring on several chemical compounds: H_2S, total NMVOCs, $PM_{2.5}$, and asbestos. To assess noise from the landfill trucks and traffic flow, we recorded noise levels using a phone app and conducted counts of landfill trucks.

To monitor for the chemical compounds, we employed several air sensor devices, including the Jerome 631-X (for H_2S), the PID ppbRAE 3000 (for total NMVOCs), and the Purple Air (for $PM_{2.5}$). The Purple Air monitor is a newly developed, user friendly air monitor that uses two lasers to detect a range of PM sizes. The accuracy of the monitor is much higher for $PM_{2.5}$ than for PM_{10}; we therefore only present results for $PM_{2.5}$. Asbestos air concentrations were measured using a pump to draw air through a filter and examining the filter under a microscope to estimate the number of asbestos fibers on the filter. We used a Kestrel Weather Monitor to provide meteorological context to this sampling.

We monitored the air at six separate locations (Figure 3; Table 6), all within 1.5 miles of the landfill, over a total of five days between March 12th and March 23rd, 2018. At each location we measured weather conditions including wind speed and direction, temperature, humidity, and cloud cover (a table displaying all collected weather data is in Appendix II). A small number of community volunteers offered to allow us to monitor on their private properties. Among these locations, we prioritized properties by distance from the landfill and availability of the property owners while we monitored.

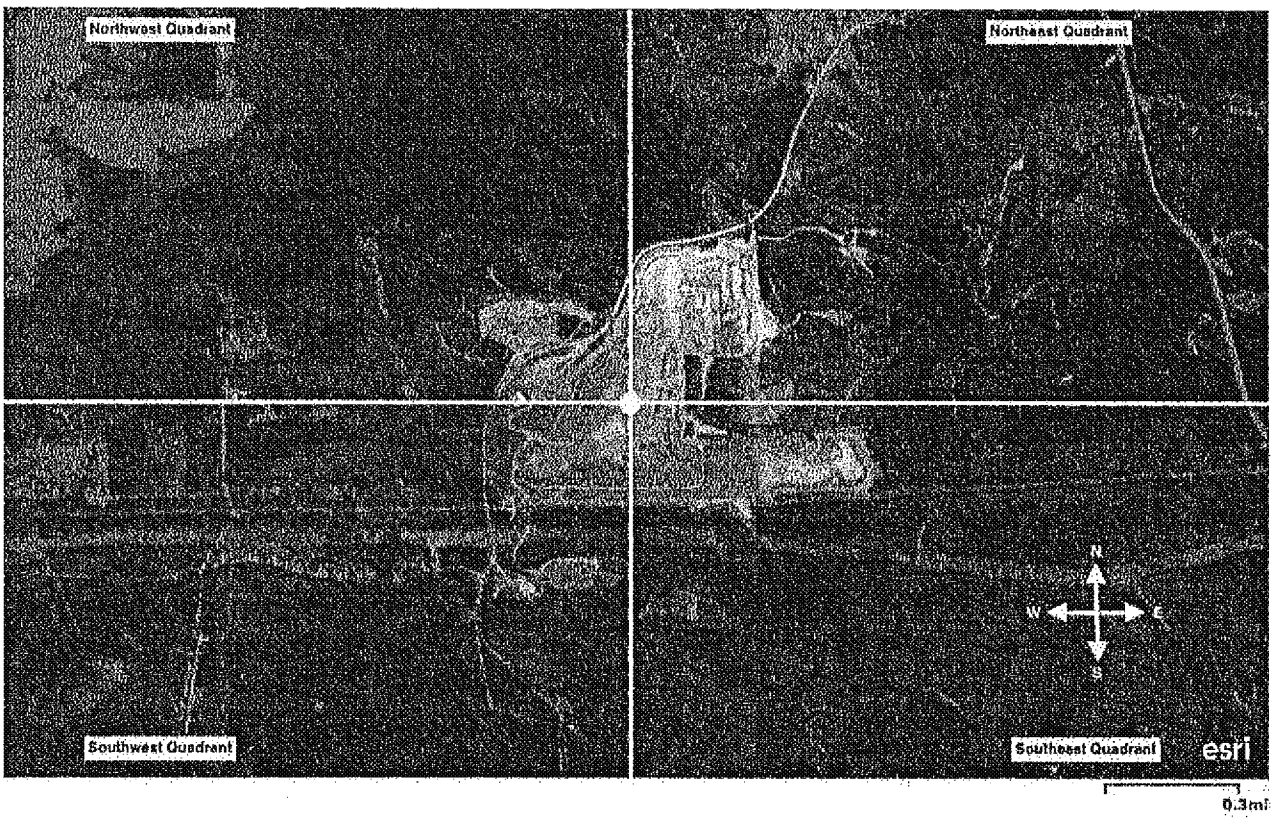

Figure 3: A map of the region in which air sampling occurred. Three monitoring sites were located in the northeast quadrant and three were in the southwest quadrant. Exact locations have been omitted from the map in order to protect the privacy of landowners.

Table 6: Geographic description of each sampling location

Location	Distance from center of landfill (mi)	Direction from landfill	Along major truck route (Y/N)	Special Features
A	1.24	SW	Y	Landfill not visible but can hear in the background.
B	0.48	SW	Y	Portions of the landfill are visible, can hear clearly.
C	0.87	NE	N	Property borders landfill. Trees are present but do not block view completely. Can hear landfill operations in background.
D	0.77	NE	Y	On a hill, elevation higher than landfill. Site of landfill blocked by trees, visibility is low. Can hear landfill operations distantly in the background, truck noise very present.
E	0.32	NE	Y	100% visibility and noise exposure to landfill.
F	0.58	SW	Y	Landfill not visible, but can hear in background.

We chose to do a majority of the sampling at one location (Location D) because the landowner was particularly receptive to our monitoring on the property and the location is less than 0.25 miles from the entrance of the landfill. During monitoring, an active landfill cell— that faced the road on which the property was located — was open. It is important to note that although the entrance of the landfill is within 0.25 miles of the front porch of Location D, this property is located on a hill with trees in the direct path to the landfill. Although the landfill cannot be seen from the property, constant noises like the beeping when a truck is backing up, as well as smells, are detectable from it. This location was also particularly useful for monitoring noise and truck

traffic because it is located on the road on which landfill trucks travel to get from Interstate 85 to the landfill.

The Kestrel Weather Monitor revealed similar trends across all of the monitoring periods. Overall, the rain that fell the week before the team arrived in Tallassee may have caused a decrease in the amount of PM we were able to sense with the Purple Air Monitors. Further, windy conditions may have decreased the amount of pollutants detected when monitoring locations were not downwind from the landfill.

The NIOSH noise app[40] was used to monitor noise levels at Location D and Location B, which are located on roads with the most truck traffic. Open-top garbage truck traffic counts were also conducted at Location D.

Our original sampling plan included monitoring air quality for long consecutive periods of time; however, we were unable to monitor in the very early morning and late into the evening. It was difficult to monitor during these hours because of poor weather and our desire to respect the landowners' privacy. In addition, we were unable to capture weekend days due to poor weather and travel conflicts. Finally, we note that it is likely that our presence became known in this small community fairly quickly and may even have been made known to the landfill in advance of our arrival. It is possible that landfill practices might have been modified by our presence and monitoring activities.

Community Health Survey

In addition to conducting air monitoring at various locations in close proximity to the Stone's Throw landfill, we developed a questionnaire for the purpose of collecting information about the health of the community as well as measuring the perceptions among community members about the landfill. Questions included on the community health survey were informed by a literature review of questionnaires conducted to collect similar information and a review of preliminary open-ended surveys collected in the Ashurst Bar-Smith neighborhood of Tallassee by Earthjustice and the NAACP Legal Defense Fund in March 2016. Participants in our survey were asked to answer questions about their health, perception of the landfill and its impact on the community, and demographics, in addition to questions about incidence of asthma among children that live in their household. In total, the final community health survey was comprised of 35 multiple choice and short answer questions (see Appendix IV).

When designing the community health survey, special attention was paid to the protection of identifiable information. As a result of the recruitment of men from this community to the US Public Health study on syphilis in Tuskegee and the historical mistreatment of the community by academic institutions, our research design considered that community members might be understandably distrustful of the collection of personal information. In order to protect the confidentiality of all survey participants, addresses were the only identifiable information that was collected over the course of this study. This information was used to establish distance and direction of the participant's residence in relation to the landfill. This information was located on the first page of the survey. Per this study's IRB protocol, following the completion of the survey the participant was assigned a participant ID number. The first page of the survey was then

detached from the remainder of the survey responses and stored separately. This method ensured that even if lost or stolen, the survey responses could not be linked to the respondents. Addresses will be destroyed after the distance and direction information has been incorporated into the database.

Persons were eligible to participate in the community health survey if they were over the age of 18 and provided verbal consent. We did not collect written consent as this would have qualified as identifying information. In order to ensure that children were not counted twice by surveys filled out by adults that live in the same residence, we cross checked all addresses for duplicates.

Community health surveys were administered either verbally by a trained community member or member of the research team or self-administered on paper. Surveys were completed and collected at a community meeting held on March 10th at the New Zion AME Zion Church in Tallassee and at a gathering held by the pastor of the church on March 12th. Additionally, our team collected surveys door-to-door and at the Wall Street Community Center with a community member who is thought to be trusted in the neighborhood. Finally, some surveys that were distributed between March 12th and March 23rd 2018 were collected by a trained community volunteer and forwarded to the team. The distribution of the residences of survey respondents is shown in Figure 4.

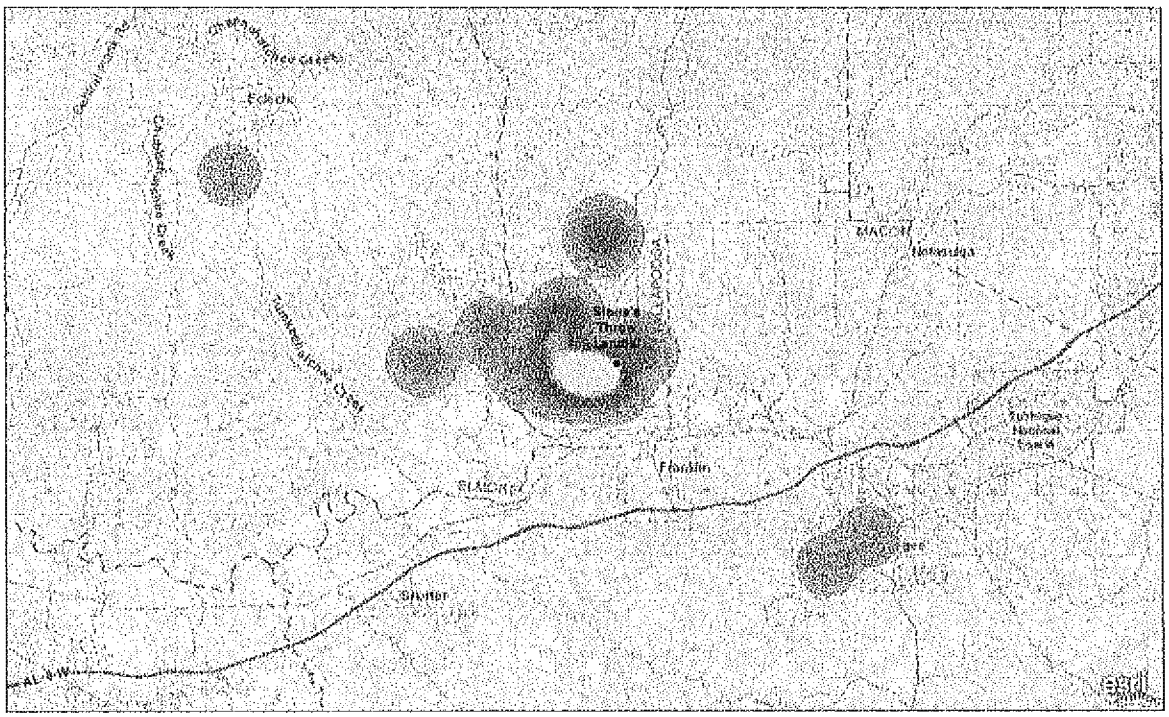

Figure 4. Heat map showing concentration of residential addresses belonging to survey participants in relation to the Stone's Throw Landfill. Yellow represents the highest concentration of residences while blue represents the lowest concentration.

V. Findings & Discussion: Air Monitoring

Hydrogen Sulfide

During the monitoring sessions, H_2S levels ranged from 0 ppb to 5 ppb (Table 7). The highest levels (5 ppb) were observed on March 21st, 2018 at Location D (Sample 7) where the monitor was placed facing the road, 3 meters away, at ground level. At this time, the location was downwind of the landfill. The highest average during a single monitoring period (3.3 ppb) was observed on March 22nd, 2018 also at Location D (Sample 8), with similar monitoring positioning, though the location was *not* downwind from the landfill at this time.

The highest level we observed of 5 ppb is slightly below the lower limit for olfactory effects of 8 ppb, per the Agency for Toxic Substances and Disease Registry. On most days, the monitoring locations were not downwind of the landfill, which may have impacted our results. In the future, we suggest monitoring for H_2S for longer sampling periods in different times of day, weekdays vs. weekends, locations, weather conditions, and seasons (especially in the summer months when the air is warmer and more humid as these characteristics speed up microbial processes and may increase the amount of H_2S detected).

Table 7: H_2S was monitored at six locations between March 12th and March 23rd, 2018. Sample is a unique identifier. Location A-F are the six anonymous locations at which we sampled. Location downwind from landfill (Y or N) indicates whether the sampling location was downwind from the landfill.

H_2S Sample Number	Location	Distance to Landfill (miles)	Duration (hours)	Time of Day	Minimum (ppb)	Maximum (ppb)	Average (ppb)	Location is downwind from the landfill (Y or N)	Wind Speed (mph)	Date (2018)
1	A	1.24	1	14:15 to 15:15	0	1	0.2	N	8.4	Tuesday, 3/20
2	B	0.48	1.5	10:15 to 11:45	2	4	3	n/a	n/a	Thursday, 3/22
3	C	0.87	1.5	18:00 to 19:30	0	4	2	n/a	n/a	Wednesday, 3/21
4	C	0.87	1.5	11:30 to 13:00	0	2	0.4	N	n/a	Tuesday, 3/20
5	D	0.77	6	12:00 to 17:52	0	3	1.8	N	3.2	Tuesday, 3/13
6	D	0.77	1	17:00 to 18:00	0	0	0	N	1.6	Tuesday, 3/20
7	D	0.77	3.5	14:45 to 18:15	0	5	2.4	Y	3	Thursday, 3/22
8	D	0.77	2.25	14:30 to 16:45	2	4	3.3	N	4.8	Thursday, 3/22
9	D	0.77	1.5	9:45 to 11:15	0	3	1.4	N	1.1	Friday, 3/23
10	E	0.32	.5	17:00 to 17:30	2	3	2.5	n/a	n/a	Thursday, 3/22
11	E	0.32	2	7:20 to 9:20	0	3	1.5	N	0	Friday, 3/23
12	F	0.58	1	12:45 to 13:45	2	4	2.6	Y	2	Thursday, 3/22

Non-Methane Volatile Organic Compounds

Table 8 summarizes minimum, maximum, and average total NMVOC values in ppb for the various monitoring periods conducted at five locations. The monitor we used for this data collection, the PID ppbRAE 3000, took measurements every five minutes during monitoring periods. It provided a readout of ppb for total NMVOCs.

NMVOC levels ranged from 0 ppb to 4336 ppb. This highest level of 4336 ppb, as well as the highest average level of 2601 ppb was observed for Sample 10. During the Sample 10 monitoring period (6:37 am to 8:42 am), the monitoring location— which was along the road leading to the landfill— was situated upwind from the landfill. We recorded vehicle counts from 8:20 to 9:20 on this morning, and it is possible that vehicle emissions, especially from diesel trucks, contributed to the ambient NMVOC levels. Twenty-three 18-wheelers,[41] local garbage trucks, and logging trucks were counted, while 14 cars were counted.

For comparison, in 2013, the national annual average NMVOC concentration across Canada was 8.5 ppb (measured as toluene equivalents).[2] As discussed previously, there are no standards for total NMVOCs in ambient air. However, for indoor air, NMVOC concentrations greater than 2200 ppb are considered to be hygienically unacceptable in German schools, with an exposure limit of <1 hour per day for levels 2200-5500 ppb and no permitted exposure for levels >5500 ppb. We observed maximum levels in the 2200-5500 range during 3 separate monitoring sessions (2341, 3770, and 4336 ppb) and we observed average levels in this range during one monitoring session (2601 ppb). Furthermore, NMVOC levels in the 660-2200 ppb range are considered to be hygienically significant, with an exposure limit of 1 month. We observed

maximum NMVOC levels in this range during 5 monitoring sessions and average NMVOC levels in this range during 3 monitoring sessions. For levels greater than 660 ppb, it is recommended that an assessment of individual NMVOC levels be conducted.

Future research should focus on longer sampling periods in different seasons, times of day, weekdays vs. weekends, locations, and weather conditions. To determine the toxicological significance of the NMVOC exposure being experienced by the community, it is crucial that future research assess levels of individual NMVOCs.

Table 8: NMVOCs values collected at six separate locations near Stone's Throw Landfill on six different days between March 12th and March 23rd, 2018. (Y or N) indicates whether the monitoring location was downwind from the landfill.

NMVOC Sample Number	Location	Distance to Landfill (mi)	Duration (hours)	Time of Day	Minimum (ppb)	Maximum (ppb)	Average (ppb)	Location is downwind from the landfill (Y or N)	Wind Speed (mph)	Date (2018)
1	A	1.24	1.25	13:32 to 14:47	0	571	3	N	8.4	Tuesday, 3/20
2	B	0.48	1.9	9:05 to 11:00	0	229	0	n/a	n/a	Thursday, 3/22
3	B	0.48	3.8	9:55 to 13:45	0	1625	42	n/a	n/a	Monday, 3/12
4	C	0.87	1.8	10:15 to 12:05	0	1978	358	N	n/a	Tuesday, 3/20
5	D	0.77	1.25	9:04 to 10:19	0	3770	830	N	1.1	Friday, 3/23
6	D	0.77	5.75	11:18 to 17:03	0	1552	1	N	3.2	Tuesday, 3/13
7	D	0.77	3.5	13:55 to 17:25	0	2341	681	Y	2	Wednesday, 3/21
8	D	0.77	0.16	14:11 to 14:21	0	1432	13	N	4.8	Thursday, 3/22
9	D	0.77	1.25	15:54 to 17:09	0	2119	1141	N	1.6	Tuesday, 3/20
10	E	0.32	1.25	6:37 to 8:42	0	4336	2601	N	0	Friday, 3/23
11	E	0.32	0.08	16:25 to 16:29	0	0	0	n/a	n/a	Thursday, 3/22
12	F	0.58	0.5	12:02 to 12:32	0	124	0	Y	2	Thursday, 3/22

$PM_{2.5}$

$PM_{2.5}$ concentrations ranged from 0 to 58.5 μg/m^3, with average concentrations ranging from 3.2 to 14.5 ug/m^3 (Table 9). During most of our sampling, the wind direction was blowing towards the landfill (NW to NNW), meaning that the air we sampled had not passed directly over the landfill before reaching our monitors; we do not know whether $PM_{2.5}$ levels are higher when the wind blows directly from the landfill to the community. It should be noted that the diesel truck traffic is part of the landfill operation, so pollution from these trucks are the result of the presence of the landfill.

According to the World Health Organization (WHO) 2005 guideline limits, the maximum exposures of $PM_{2.5}$ is 10 μg/m^3 annual mean and 25 μg/m^3 24-hour mean. The EPA limits are 12 μg/m^3 annual mean and 35 μg/m^3 24-hour mean. Although the highest average concentration we recorded of 14.5 ug/m (over a period of 6 hours) did not exceed the 24-hour limits, we note that because negative health impacts from $PM_{2.5}$ have been observed even at the lowest levels of exposure, the levels observed in the Ashurst Bar/Smith community are a cause for concern.[4]

Future sampling should focus on longer sampling periods (i.e., at least 24-hours) in different seasons, times of day, weekdays vs. weekends, locations and weather conditions (especially dryer weather, warmer temperatures, and wind direction from the landfill to the community).

Table 9: $PM_{2.5}$ values collected at three separate locations[42] near Stone's Throw Landfill on six different days between March 12th and March 23rd, 2018. Location ID is a unique, anonymous identifier for each sampling location. Distance to landfill is the straight-line distance from point A to the center of the cell in the landfill that is currently accepting waste. Min, max, and average are the averages of the min, max, and average of multiple monitors at one location on one day. For instance, when we monitored PM using 3 Purple Air monitors in the same location on the same day, the values from the 3 monitors were averaged together to provide the numbers in the table. Location downwind from landfill (Y or N) indicates whether the sampling location was downwind from the landfill.

PM Sample Number	Location	Distance to Landfill (mi)	Duration (hours)	Time of day	Min ($\mu g/m^3$)	Max ($\mu g/m^3$)	Average ($\mu g/m^3$)	Location downwind from landfill (Y or N)	Wind speed (mph)	Date (2018)
1	B	0.48	5	9:50 to 14:40	0	8.1	5.7	n/a	n/a	Monday, 3/12
2	B	0.48	2	9:40 to 11:50	2.3	9.1	6.1	N	n/a	Thursday, 3/22
3	D	0.77	6	12:00 to 18:00	6.9	58.5	14.5	N	3.2	Tuesday, 3/13
4	D	0.77	1	17:00 to 18:00	3.2	6.6	4.5	N	1.6	Friday, 3/23
5	D	0.77	3	15:20 to 18:30	0	6.3	3.2	N	2	Wednesday, 3/21
6	D	0.77	1	14:20 to 15:30	6.4	21.3	14.2	Y	4.8	Thursday, 3/22
7	D	0.77	4	7:30 to 11:15	1.5	15.8	10.8	N	1.1	Friday, 3/23
8	E	0.32	1.5	15:45 to 17:20	1.7	15.7	10.3	Y	n/a	Thursday, 3/22

Noise

The devices with the NIOSH app were placed near the other pollutant monitors (near roads) and measured in one-or two-hour increments. During monitoring sessions, the highest maximum level of sound observed was 98.1 dBA on March 22nd, 2018 at 2:30 pm at Location D. This was on a quiet day with little wind and we suspect the noise came from large trucks traveling by at fast speeds.[43] The lowest maximum level of sound observed was 76.5 dBA, measured on March 22, 2018. The highest and lowest time-weighted average noise levels were 57.3 dBA and 35.2 dBA (Table 10).

Table 10: Noise data by date and location.

Date	Duration (hours)	Time of Day	Location	Laeq (A-weighted equivalent Sound Level)	Max Level dBA	TWA (Time Weighted Average)	Observations
Wednesday, 3/21	1	15:25 to 16:25	D	63.8	90.5	54.9	Busy truck time, many 18 wheelers and trucks
Wednesday, 3/21	1	16:25 to 17:25	D	59.1	82.8	50.3	Same as above.
Thursday, 3/22	1	10:00 to 11:00	B	45.2	76.5	N/A	Very quiet area, clearly hear beeping and truck dumping in background. Sounds of motors (truck climbing hill maybe or tractors flattening garbage?) and dumping.
Thursday,3/22	1	11:00 to 11:52	B	52.5	86.6	35.2	Same as above.
Thursday, 3/22	2	14:30 to 16:30	D	72.5	98.1	57.3	Not a windy day. Mainly truck traffic noise.
Friday, 3/23	1	7:20 to 8:20	E	57.6	82.4	N/A	Directly across from landfill.
Friday, 3/23	1	8:20 to 9:20	E	58.2	81.3	N/A	Directly across from landfill.
Friday, 3/23	1.33	9:40 to 11:00	D	56.1	84.1	38.0	

It is difficult to contextualize the observed noise measurements given that this landfill is located in a rural residential community and most noise regulations are related to highways and occupational sites (construction, etc.), and not often written as community standards. The Federal Highway Administration describes a "substantial increase in noise level" as noise levels within a

range of 5 to 15 dBA increase over existing noise levels.[44] Further monitoring related to the noise disturbances associated with the landfill and truck traffic may be developed to determine whether there are observable increases compared with ambient or preexisting levels.

We were unable to find a community noise standard for the state of Alabama or for Alabama municipalities. However, Connecticut's Department of Environmental Protection has a Noise Standard,[45] which includes standards for various classes of land and land uses. Class A Lands are defined as: "generally residential areas where human beings sleep or areas where serenity and tranquility are essential to the intended use of the land." This would be most applicable to the homes of people in Tallassee. A landfill would likely be classified as Class C, or "generally industrial where protection against damage to hearing is essential, and the necessity for conversation is limited."

The Connecticut Noise Standards stipulate that:

I. Sound Pressure:

- No person shall cause or allow the emission of impulse noise in excess of 80 dBA peak sound pressure level during the nighttime to any Class A Noise Zone
- No person shall cause or allow the emission of impulse noise in excess of 100 dBA peak sound pressure at any time to any Noise Zone.

II. Noise:

- No person in a Class C Noise Zone (industrial) shall emit noise exceeding 61 dBA (during the day) and 51 dBA (during the night) to adjacent Class A Noise Zones

(residential). Levels emitted above these values shall be considered excessive noise.[46]

If Connecticut's noise standards were applied to Tallassee, Stone's Throw Landfill (a Class C emitter) would be in violation of exceeding the noise levels to the adjacent Class A zone (residential areas) with each daytime maximum noise level (range: 76.5 to 98.1 dBA) greater than the guideline of 61 dBA. Further daytime. monitoring is recommended to determine whether the 100 dBA peak sound pressure guideline is ever surpassed. In addition, nighttime monitoring is recommended to determine whether noise at night near Stone's Throw Landfill exceeds the 80 dB peak sound pressure level limit or the 51dBA night time noise limit.

Traffic and Hourly Car/Truck Counts

As part of the monitoring plan, we conducted hourly vehicle counts with careful attention to how many and what kinds of vehicles are using Washington Boulevard, the narrow county road leading to the landfill. Many community members expressed concerns associated with trucks, including their speed, noise, frequency, and damage to the road due to the ongoing traffic. According to community members, the speed limit on Washington Blvd was previously 20 mph, but was raised to 35 mph.

The highest hourly vehicle count observed was 48 (including fourteen 18-wheeled semi-trucks), on March 21st, 2018 from 3:30 pm to 4:30 pm at Location D (Appendix III). Anecdotally, community members indicated that the highest truck traffic hours are between 5:00 and 7:00 am and between 2:00 and 4:00 pm, which coincides with when children are getting on and off school buses. We observed open-top garbage trucks with construction materials, as well as trucks

regularly crossing the yellow center dividing line, particularly while going around corners. We note that it is possible that frequency of truck traffic might have been impacted by our presence and monitoring activities.

When comparing truck activity with emissions we found a slight increase in $PM_{2.5}$ when trucks were passing by; however, we do not feel the data are conclusive enough to make definitive statements about the effects of truck traffic on air quality. Future monitoring should consider taking careful notes of when trucks are passing and when there are spikes in NMVOCs or $PM_{2.5}$ in order to test for correlations.

Asbestos

According to the Advanced Disposal website,[20] Stone's Throw Landfill accepts friable and non-friable asbestos. Due to the severe impact asbestos can have on human health, we chose to test the ambient air for asbestos. We did not detect asbestos in the ambient air; however, our sampling was limited to one location on one day. Concentrations of asbestos in outdoor and indoor air are inherently variable over time and space and long-term and frequent monitoring should be considered for the future.

Asbestos air concentrations are measured using a pump to draw air through a filter and examining the filter under a microscope to estimate the number of asbestos fibers on the filter. In the future, we suggest monitoring for asbestos on a bi-weekly or monthly basis to establish any trends that may be seasonal or due to particular weather conditions. Monitoring can also be considered within a time period after the landfill has been approved for the receipt of asbestos,

though materials received at the landfill without special permission may also contain asbestos. Asbestos fibers act similar to dust and PM and are most likely to be found in the air on dry days where dust is more likely to moving around. The best time to monitor for asbestos would be during the days or weeks after an asbestos shipment arrives at and is dumped into the landfill, if that could be determined.

Weather Summary

The weather information that we collected revealed fairly consistent trends across monitoring time periods. Over all monitoring time periods and locations, the temperature ranged from 56.2 to 72.9° F. Sky conditions were either sunny with minimal clouds or partly cloudy, except for the afternoon of March 20th, which was fully cloudy. Winds were generally blowing from the NW, NNW, or WNW, except for two monitoring periods during which they were blowing from the SW and WSW (March 21st and the first monitoring period on March 23rd, respectively). Average wind speed across all monitoring periods was 3.1 mph, and the average humidity percentage was 37.5. A complete table of weather data can be found in Appendix II.

VI. Findings & Discussion: Community Health Survey

This section provides a brief summary of the community health survey results. The complete data set is provided in Appendix IV.

Demographic Information

The number of surveys completed and returned was 74. Survey respondents were overwhelmingly African American and low income (Table 11). The average distance between the landfill and residences of survey respondents was 3.78 miles. However, when excluding outliers who live more than 9 miles from the landfill (n=8), this distance drops to an average of 1.97 miles. (These outliers were former residents of the Ashurst Bar/Smith neighborhood and non-resident owners of plots of land in the community who are concerned about the community, may visit regularly, may have moved recently from the community, and attended the community meeting at which 24 surveys were completed. Survey questions did not allow distinguishing which respondents may have lived in the community and moved only recently.) Because we do not have access to census data for the population living within the geographic boundary of the Ashurst Bar/Smith neighborhood of Tallassee, AL, we compiled a collection of census data and estimates from the community members in order to determine of the demographic makeup of the area (Table 11).[30,47] Based on this information, it appears that respondents to the community health survey were a demographically representative sample of the population of the area.

Table 11. Comparison of demographic information from US Census, estimates from community members, and the community health survey.

Demographic Information				
Area Being Measured	**Total Persons**	**Households in Area**	**Percent Below Poverty Level**	**Percent African American**
1-mile radius around Stone's Throw Landfill	117[30]	38[30]	99%[30]	71%[30]
3-mile radius around Stone's Throw Landfill	1,649[30]	612[30]	68.5%[30]	52%[30]
Ashurst Bar/Smith Neighborhood	591[47]	No estimate available	No estimate available	98%
Survey Respondents (average distance of 3.78 miles from landfill)	74 (18 of the participants who completed the survey live within 1 mile of the landfill; 52 live within 3 miles of the landfill)	50 (10 of the households captured by the survey are located within 1 mile of the landfill; 36 are within 3 miles of the landfill)	82%	91%

Perception of Environment

Survey respondents largely reported negative perceptions and attitudes about the landfill and its impacts. When asked to describe the overall impact of the landfill on the community, 78.4% answered "negative." Similarly, 84.9% of survey respondents rated the health of the environment in which they live as unhealthy. This attitude was also evident on the questions gauging concern about the landfill, with most respondents very or extremely concerned about every issue covered

(Table 12). Also striking was the 82.4% of respondents who report avoiding going outside because of poor air quality.

Table 12. Level of concern measured by question 8 on the community health survey.

How concerned are you about each of the following issues relating to the Stone's Throw Landfill and its impact on your community?						
	Not concerned at all	Not concerned	Concerned	Very concerned	Extremely Concerned	Chose not to respond
Smell	3 (4.5%)	1 (1.3%)	8 (10.8%)	10 (13.5%)	51 (68.9%)	1 (1.3%)
Noise	2 (2.7%)	5 (6.8%)	8 (10.8%)	22 (29.7%)	33 (44.6%)	4 (5.4%)
Animals	0 (0.0%)	5 (6.8%)	8 (10.8%)	15 (20.3%)	43 (58.1%)	3 (4.1%)
Traffic	1 (1.3%)	2 (2.7%)	10 (13.5%)	10 (13.5%)	49 (66.2%)	2 (2.7%)
Air Pollution	2 (2.7%)	2 (2.7%)	3 (4.5%)	6 (8.1%)	60 (81.0%)	1 (1.3%)
Decrease in Property Value	0 (0.0%)	2 (2.7%)	6 (8.1%)	13 (17.6%)	51 (68.9%)	2 (2.7%)
Litter	1 (1.3%)	3 (4.5%)	6 (8.1%)	15 (20.2%)	48 (64.9%)	1 (1.3%)
Health Impacts	0 (0.0%)	2 (2.7%)	5 (6.8%)	7 (9.5%)	58 (78.4%)	2 (2.7%)

Health

Survey respondents reported a high prevalence of asthma and chronic obstructive pulmonary disease (COPD) compared with the population of Alabama (Figure 5). In total, 29.2% reported

being told by a doctor that they have asthma, almost double the statewide prevalence in Alabama measured by the 2015 Behavioral Risk Factor Surveillance System (BRFSS)[48] (15.6%). 20.8% of survey respondents reported being told by a doctor they have COPD, chronic bronchitis, or emphysema, again almost double the statewide prevalence of 10.5%.

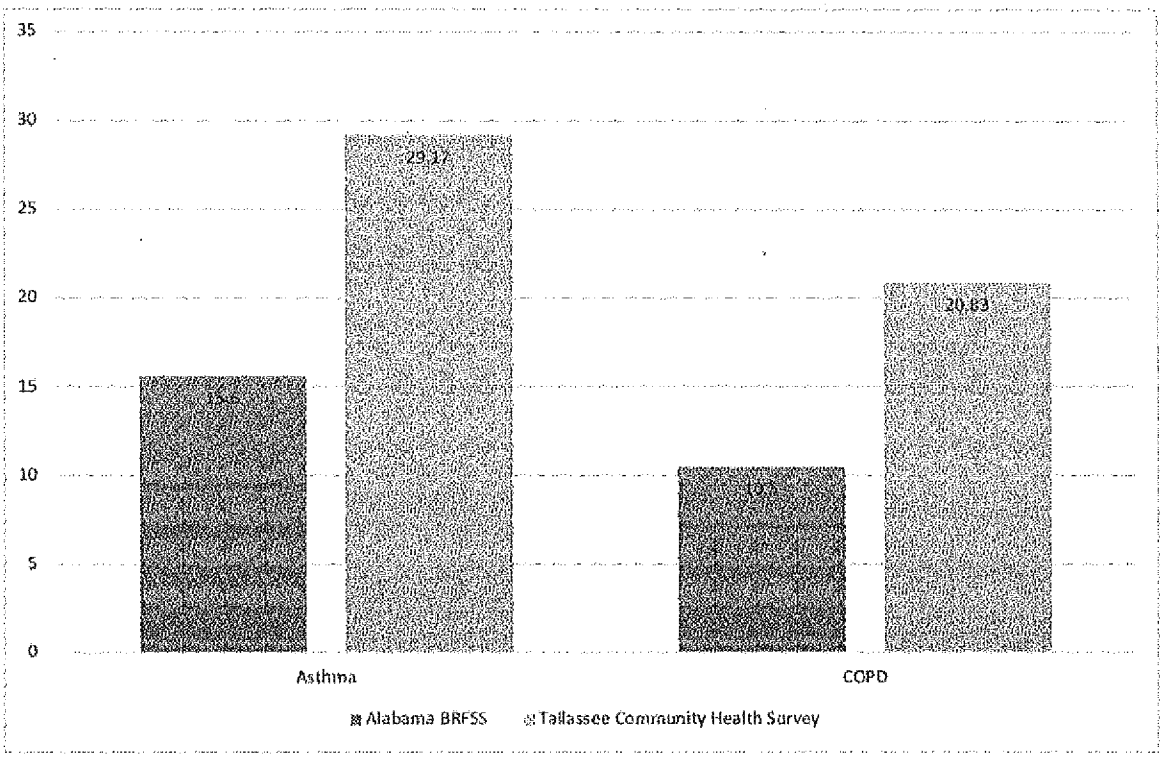

Figure 5. Comparison of asthma and COPD prevalence measured by the community health survey with statewide prevalence reported by the Alabama BRFSS Survey.

Limitations

The main limitation was the relatively small sample size (n=74), which hampered our statistical power and our ability to assess the relationship between health conditions and relevant factors such as distance of residence from landfill and to control for potential confounders, such as workplace exposures, socioeconomic status, education level, and lifestyle.

Additionally, survey results could be influenced by our recruitment methods. Twenty-four of the 74 surveys were collected at a community meeting organized by members of the community who are concerned about the impact of the landfill. By attending the meeting and demonstrating concern, the sample has self-selected. However, it is significant that such a large proportion of the community attended the community meeting. As mentioned, eight of the attendees of this meeting who completed surveys are not currently residents of the Ashurst Bar/Smith neighborhood, but rather former residents of the Ashurst Bar/Smith neighborhood or non-resident inheritors of plots of land in the community. These participants live 9 to 24 miles from the Stone's Throw Landfill, and skewed the average distance to the landfill. While their current exposure may be different than full-time residents of the community, their responses may still be relevant and as a result their responses were included in the final data set.

VII. Next Steps

In this section we outline recommendations for consideration by the Ashurst Bar/Smith Community as well as the universities involved in this study. In general, the research presented in this pilot study is highly preliminary and limited. However, we were able to identify some key warning signs, including hydrogen sulfide levels approaching the odor threshold, high non-methane volatile organic compound (NMVOC) levels of unknown composition, transient elevated $PM_{2.5}$ levels, high noise levels in relation to community standards, high prevalence rates of asthma and COPD, and, importantly, high levels of concern in the community about smell, noise, traffic, air pollution, health impacts, property values, animals, and litter. The following next steps could be taken to build upon and improve this research.

Expand Upon Pilot Air Monitoring

Further air monitoring for H_2S, NMVOCs, $PM_{2.5}$, and asbestos is clearly indicated. In general, we suggest that air quality monitoring should be performed for longer periods of time at various locations both daily and annually because air quality can change dramatically according to time of day, day of week (weekdays versus weekends), season, landfill activity, and weather conditions. In addition, it is particularly important to monitor at locations downwind of the landfill, which was difficult to do with our limited amount of time and knowledge of the community. We suggest prioritizing future planning and research through collaborative partnerships with the Yale School of Public Health, the Department of Graduate Public Health at Tuskegee University, and Ashurst Bar/Smith community members, using a community-based participatory research approach if favored by the community. Furthermore, we suggest that the community consider seeking support form ADEM, the landfill, the City of Tallassee, or the county, for monitoring efforts.

Hydrogen Sulfide Sampling Recommendations

H_2S is known to cause serious health issues and smells like rotten eggs. In one study, odor was strongly associated with alteration of daily activities, negative mood states, mucosal irritation, and upper respiratory symptoms.[8] Because odor is a common complaint from the community members, we suggest monitoring in summer months when temperature and humidity are high, as well as when odors are particularly potent. Emissions are likely to change significantly throughout the day due to changes in temperature and humidity and we suggest prioritizing monitoring in the early morning (5am to 11am) and late evening (4pm to 10pm).

NMVOC Sampling Recommendations

To better understand which NMVOCs are present in the ambient air near the Stone's Throw Landfill, as well as their potential health effects, future research could assess individual NMVOCs, with a focus on HAPs and NMVOCs that are specifically associated with landfills. Benzene and vinyl chloride are HAPs that are commonly emitted from landfills and are known for causing health issues. Information on the levels of these individual compounds could provide a more nuanced picture of the health risks that the landfill poses to the community. Linkages could be made between the waste that the landfill accepts and the levels of these and other specific HAPs and NMVOCs. Finally, an effort should be made to determine how much of the NMVOC pollution is from landfill-associated vehicle traffic.

Particulate Matter, Noise, and Truck Traffic Recommendations

For community members who are interested in continuing air pollution monitoring to gather more data, we see the greatest opportunities in monitoring particulate matter and noise, due to the low cost and technical accessibility of the monitoring devices: Purple Air Monitor for $PM_{2.5}$ (approximately $250) and the NIOSH Noise App (available free for download on iPhones).

As mentioned, future sampling for $PM_{2.5}$ should focus on longer sampling periods (i.e., at least 24-hours), under a wide variety of weather conditions (especially dryer weather, warmer temperatures, and wind direction from the landfill to the community). We also suggest taking detailed notes on any potential PM sources near the sampling location such as open fires, diesel truck traffic, or disturbance to dry soils as these sources may influence air monitoring results. If resources can be made available, we suggest monitoring for PM_{10} in addition to $PM_{2.5}$ because

these two types of PM can be created by different activities and may provide important information about what is causing PM to be in the ambient air.

For noise sampling, we recommend engaging community members willing to carry out sampling for a prolonged period of time, in order to gather sufficient data points to strengthen findings. Given the need to use a smartphone to run the NIOSH app, this type of monitoring might be suitable for local teenagers who are "tech-savvy." We also recommend potentially engaging local high schools and teachers to design and enhance the quality of the study as part of a science curriculum. Also feasible would be truck traffic counts by community members to provide additional information on the impacts of the landfill on quality of life and health, as well as provide data on the potential correlation between truck traffic and emissions.

Asbestos Sampling Recommendations

Our sampling of asbestos was very limited and the fact that we did not detect asbestos in our one sample does not show there is no asbestos exposure in the community, given that the landfill is permitted to accept asbestos waste. Future asbestos monitoring should be done over an extended period of time to determine whether or not exposure occurs due to the presence of asbestos in the landfill. Asbestos monitoring equipment consists of a high-volume pump, plastic tubing, and phase contrast microscopy (PCM) filters. A set can be purchased for $200 to $500 from an environmental equipment supplier.[49] We suggest using the following resources to design and implement an asbestos monitoring program:

- EPA— "Asbestos Sampling" :https://archive.epa.gov/region9/toxic/web/pdf/epa-ert-asbestos-sampling-sop-2015.pdf

- EPA — "Summary of Outdoor Ambient Air Monitoring For Asbestos at the Libby Asbestos Site:" https://www.epa.gov/sites/production/files/documents/AmbientAirReportFinal09Feb2009.pdf
- OSHA - "Detailed Procedures for Asbestos Sampling and Analysis:" https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9997

Additional Monitoring

In addition to expanded monitoring of air quality and landfill-related activities such as truck traffic, we suggest developing a more comprehensive pollution monitoring plan that takes into account other modes of landfill pollution as well as possible sources of pollutants other than those emitted directly by the landfill (e.g. unpaved roads, mold in houses, outdoor/indoor air exchange, burning of trash and firewood, traffic). A strategy moving forward could include:

1. Water Testing: Runoff from the landfill could potentially contaminate local streams and drinking water. Due to the rural nature of the Ashurst Bar/Smith community, many residents own property that was historically used for agriculture, raising animals, or home gardening. Water sources may be impacted by the landfill. Ashurst Bar/Smith Community Organization and the Department of Graduate Public Health at Tuskegee University have faced resource and technological limitations in implementing water sample testing. We recommend further collaboration across stakeholder groups to determine next steps in researching drinking water quality and interpreting results. Additionally, non-potable water sources should be tested.
2. Soil Testing: Tuskegee University researchers recently received approval to proceed with soil sampling at one site, which may reveal pollutants associated with the landfill as well as other pollutants that may be impacting community health. It is important to understand if the soil is contaminated, given that food is grown in soil and children may ingest soil

directly. We recommend further cross-stakeholder collaboration to determine next steps for additional soil sampling or remediation.

3. Indoor air quality monitoring: As a result of poor air quality in the area surrounding Stone's Throw Landfill, members of the community now spend most of their time indoors in an effort to avoid exposure to polluted air. Indoor air quality data are therefore useful for evaluating exposure to harmful pollutants, as well as risks of explosions. Indoor air quality may be especially compromised in the Ashurst Bar/Smith Community, if emissions from the landfill are lingering in homes. When monitoring indoor air quality, emissions from household products such as a gas stove or hairspray also need to be taken into account. Incorporating indoor air quality monitoring into the monitoring plan would require an extensive amount of research into indoor air monitoring equipment and the common types of pollutants that linger in homes.

Community Health Surveys

The elevated prevalence of asthma and COPD, although based on a relatively small sample size, are of obvious concern. Collecting more information about the status of the health of the community is a necessary step moving forward. This information is important for all stakeholders in understanding the impacts of the landfill on health. One approach would be to increase the participation rate for the survey used for this report by working to add respondents. Additional research might include a survey of a nearby comparison community that is not exposed to the landfill. Community leaders could also collect additional qualitative data by distributing personal diaries for community members to track daily activities, mood states, and irritant and other physical symptoms, similar to the Heaney et al. study.[8] Finally, because

community members have expressed concerns about a high incidence of cancer and birth defects, epidemiological studies of these health outcomes should be considered.

Other Actions

Ashurst Bar/Smith Community members are already engaged in advocacy, particularly around the permitting of the landfill. The following recommendations might inform additional steps to mitigate effects of landfill operations and related activities.

1. Community representatives or researchers should consider requesting that ADEM and/or the Stone's Throw landfill publicly release emissions history data as well as information about landfill contents. For example, it is unclear whether the landfill monitors H_2S, despite this chemical being a common landfill emission with known human health impacts.
2. Community representatives should consider requesting that the landfill or government agencies provide resources for offsite air, soil, dust, and water monitoring.
3. Community representatives should consider proposing policies on the city, county or state level that might mitigate impacts, including the following:
    a. A community noise ordinance for Tallassee, which could be modeled after the CT standards discussed in Section VI.
    b. Improved enforcement of landfill permit terms, such as enforcement of hours of operation and ensuring adequate cover of any open face of the landfill.
    c. More stringent landfill policies including i) requiring that any open face of the landfill be covered at night; ii) withdrawal of the current permit variance that allows the landfill to have two simultaneous open faces; and iii) requirement that

the landfill clean up trash from the sides of the road, particularly along Washington Boulevard

d. Improvements in traffic safety (e.g.: traffic lights, lower speed limits, speed bumps, restricted hours for trucks, a dedicated private road for landfill truck traffic) and resources for community-based traffic monitoring efforts

e. Increased buffers and/or restrictions in any future expansion of size of the landfill.

4. The daily traffic volume of landfill vehicles may continue to increase as the size of the landfill increases. We suggest designing a traffic monitoring plan that measures speed of trucks with speed cameras and summarizes characteristics of the roads used by these landfill vehicles including width and curvature. This information could inform local authorities and legislators on the negative impacts of the increased truck traffic through the community.

5. Findings of the health survey merit further study, including the possibility of testing and monitoring of health status, as well as efforts to ensure that all community members have access to comprehensive health care. Public health involvement is a necessary precursor to any testing and monitoring program and development of health care services. Given the particular history of this community, it would be imperative that any study start with community involvement, informed consent, and adherence to ethical standards, more generally.

Community Recommendations

The following interim strategies are available to reduce the negative impact of the landfill on health. We acknowledge that many community members believe that the most effective public health protective measure would be for the landfill to close, and that eliminating emissions is a

better preventive strategy than the suggestions in this section. We also appreciate that some options may not be feasible for community members. Where costs are a barrier, the Ashurst Bar/Smith Community Organization might propose that these costs by covered by the landfill or governmental agencies. Because the future of the landfill remains unresolved, we are providing a sample of steps that could be taken by individuals in the community to mitigate negative health impacts.

Improve Home Air Quality with Air Filtration Devices

Home air quality improvement strategies and products can range in price and efficacy and may be cost prohibitive for many community members. However, we feel that it is important at least to offer potential strategies that can be explored for short-term, personal mitigation, and community members may seek to have the landfill or government agencies provide these products. We see these strategies as not only able to mitigate potential toxic emissions from the landfill that may be entering homes, but also to eliminate other potential sources of indoor air pollution that are common to indoor home environments and may be adding to community members' total pollutant exposure. These pollution sources include cleaning and pest control products, household dust, consumer products, building materials, and furnishings.

Air filtration devices could be used in homes in the community to improve indoor air quality. We note that the New Zion A.M.E. Zion Church has already installed air filters, and recommend that in the future the community consider requesting that Advanced Disposal or ADEM provide these devices. Alternatively, air filter manufacturers may be receptive to providing free or reduced-cost filters, given the air quality conditions in the community. Finally, the community could fundraise

to purchase air filters, or purchase them individually, if possible: The following are two options for filters:.

1. HVAC System Filters
    - Look for MERV (Minimum Efficiency Reporting Value), a measure of efficiency for filters installed in HVAC systems. Ratings range from 1 to 20. According to the EPA, filters with a MERV rating between 7 and 13 are likely to be nearly as effective as true HEPA filters at controlling most airborne indoor particles. A pack of two MERV 13 filters costs approximately $50.
    - High Efficiency Particulate Air (HEPA) Filters mechanically remove particles from the air. They have a MERV Value of 17-20. HEPA air filters for HVAC systems cost between $100-$200.
2. Portable Air Cleaners can be moved from room to room. Effectiveness is measured by the clean air delivery rate (CADR). Portable air purifiers range from $100 to $800, though the effectiveness of lower cost models is questionable. Portable air purifiers with a high CADR rate (300+) currently for sale in the United States include:
    - Whirlpool AP45030K - $209
    - Kenmore 85264 - $219
    - Whirlpool AP51030K - $230-$349
    - Blueair 650E - $569
    - Blueair 503 - $659
    - Blueair 603 - $769

For more information, see:

1. USEPA's *Guide to Air Cleaners in the Home*, available at: https://www.epa.gov/indoor-air-quality-iaq/guide-air-cleaners-home-printable-version
2. EWG's *Healthy Living: Home Guide - Air Filters*, available at: https://www.ewg.org/healthyhomeguide/air-filters/#.WuCKzdPwZE5

Safe Cleaning and Purchasing Tips

1. Vacuum carpets and soft furniture often to control dust and other pollutants.
2. Use non-toxic safe cleaning products. Look for EPA's "Safer Choice" label (shown to the right) on cleaning products. These products are certified by EPA scientists to be safer for human health and the environment.
3. Choose low-NMVOC toys, paint, and furniture. Though there is no government certification label for products meeting this standard, consider purchasing products such as Green Seal-11 certified paint.
4. For more information, see Environmental Working Group's (EWG) *Top Tips for Better Air Quality*, available at: https://static.ewg.org/ewg-tip-sheets/EWG-AirQualityTips.pdf?_ga=2.81535895.1687753434.1524663873-538422630.1524663873

Limit Outdoor Exposure at Certain Times

We advise that, as already practiced by many community members, individuals avoid spending extensive amounts of time outside during periods of increased traffic, during extreme heat, and when smells are particularly noticeable— or if an individual is experiencing extreme dizziness and headaches. We recognize that this practice is already in place for many households and places a significant burden on lifestyle; thus, we recommend that individuals continue to use their best judgement and discretion to decide what is most appropriate for their wellbeing, especially in light of the general benefits of outdoor recreation and play, particularly for children. Further research efforts may be able to illuminate more specific and scientifically-backed recommendations about specific times to stay indoors.

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37. VOCs, including methane, are natural byproducts of biological and chemical processes including decomposition. When these processes take place in large quantities the compounds released can pose significant health impacts on humans and the environment. Hazardous air pollutants are compounds known to have negative health impacts, especially in low quantities and include some NMVOCs such as benzene and vinyl chloride. Methane itself is a potent greenhouse gas but is not directly hazardous to human health.
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42. Due to a combination of logistical considerations and suitability of locations, for example proximity to a road or wind direction, we chose not to monitor PM at locations A, C, and F.
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Acknowledgements

We would like to give a special thank you to all of the collaborators on this project including Robert Dubrow, Marianne Engelman-Lado, Yume Hoshijima, Katherine Wolf, John Heath, Crystal James, Ronald Smith, and the Ashurst Bar/Smith community. We would also like to thank the extended network of air quality monitoring professionals whose advice was instrumental to our success throughout the process. We hope this report will inform future actions to prevent the Stone's Throw Landfill from negatively impacting the Ashurst Bar/Smith community.

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Appendices

I. Tallassee/ the Ashurst Bar/Smith Community Organization (ABSCO) Timeline

Prepared by the Yale Environmental Justice Clinic, 2-12-2018

1980-1986	Landfill was a privately owned and operated 30-acre facility.
1986	Landfill was sold to Waste Away, Inc. The Landfill, at this time, serviced an 18-county area.
June 10, 1991	First host agreement between Tallapoosa County and Tallassee Waste Disposal Center, Inc. is signed. This approves an expansion of the Landfill. Subsequently, citizens organize and request a hearing.
September 1991	Citizens express concerns to a Waste Away representative about the Landfill. They are given a verbal agreement for improvements, which was not fulfilled.
April 1992	Waste Away seeks to purchase more landfill for expansion.
Around 1993	ADEM and Tallapoosa County release a range of studies about the Landfill.
September 1993	Landfill closes, partly due to federal regulations, wetland problems, and Waste Away's inability to buy additional land.
September 1999	TCC approves a proposal to reopen the Landfill. ABSCO is reestablished, and a Steering Committee is formed.
November 15, 1999	Host agreement renewed.
December 17, 1999	ABSCO joins a Title VI complaint against ADEM filed by the Center for Race, Poverty & the Environment.
August 2000	ABSCO conducts water testing in the area.
October 2001	ADEM grants the Landfill's permit – the facility is now operated by Sunflower Waste.
August 22, 2002	The Landfill receives a wetland fill permit from the Army Corps.
June 2003	"Yerkwood Report" is released, in which EPA recommends that ADEM improve its civil rights-related practices.

June 13, 2003	ADEM releases a public notice for a proposal to fill 7.46 acres of wetlands in recently purchased land tracts.
August 26, 2003	ADEM holds a public hearing regarding the proposed modification of the Landfill's permit
September 3, 2003	Ex. 6 Personal Privacy (PP) files Title VI complaint with EPA on behalf of ABSCO.
September 30, 2003	EPA confirms receipt of ABSCO complaint
December 8, 2003	Ex. 6 Personal Privacy (PP) sends a more formal and detailed Title VI complaint to EPA.
February 8, 2005	Ex. 6 Personal Privacy (PP) files Title VI complaint with EPA against the Mobile District of the Army Corps of Engineers and ADEM.
September 7, 2005	EPA accepts Ex. 6 Personal Privacy (PP) September 2003 Title VI complaint.
December 6, 2005	EPA rejects Ex. 6 Personal Privacy (PP) February 2005 Title VI complaint on the basis that the Army Corps has withdrawn its permit application.
October 12, 2006	In an e-mail to David Ludder, EPA claims that it is investigating Ex. 6 Personal Privacy (PP) Ex. 6 Personal Privacy (PP) September 2003 Title VI complaint.
January 25, 2013	EPA partially dismisses the intentional discrimination prong of Ex. 6 Personal Privacy (PP) Ex. 6 Personal Privacy (PP) September 2003 Title VI complaint.
August 2016	The ADEM director said—at an ADEM commissioners' meeting—that ADEM had no responsibility to comply with Title VI.
November 2016	Ex. 6 Personal Privacy (PP) and others submit comments to oppose the renewal of the Landfill's permit from 2017-2022.
February 22, 2017	ADEM renews the Landfill's permit until 2022.
April 28, 2017	EPA closes Ex. 6 Personal Privacy (PP) s September 2003 Title VI complaint. ABSCO files another complaint to challenge the 2017-2022 renewal of the Landfill's permit.

II. Weather Data

Location	Time of Recording	Wind Direction	Wind Speed (mph)	Headwind	Crosswind	Humidity (%)	Temp (F)	Barometric Pressure (Hg)	Altitude (ft)	Conditions	Date
D	12:42	NNW	3	1.9	0.8	33.1	60.1	29.7	195	clear, sunny, minimal clouds	3/13/ 2018
D	13:42	NW	3	2.2	1.1	26.5	61.8	29.64	195	clear, sunny, minimal clouds	3/13/ 2018
D	14:45	NW	3	1.1 @ 008	0	21.1	64.6	n/a	195	clear, sunny, minimal clouds	3/13/ 2018
D	16:00	NNW	4	2.5 @ 332	4	25.9	60.4	n/a	195	clear, sunny, minimal clouds	3/13/ 2018
D	17:25	NNW	3	1.6 @ 334	1.4	27.2	61.8	n/a	195	clear, sunny, minimal clouds	3/13/ 2018
C	11:00	NNW	n/a	n/a	n/a	58.8	66.2	29.23	638	clear, sunny, minimal clouds	3/20/ 2018
A	14:20	NNW	8.4	3	0	43.6	73	29.28	583	clear, sunny, minimal clouds	3/20/ 2018
D	17:45	WNW	1.6	0.8	1.4	60	56.6	29.26	608	cloudy	3/20/ 2018
D	15:35	SW	3	0	0	37	72.9	29.57	315	partly cloudy	3/21/ 2018
F	13:20	NW	2	3	3.1	30.1	60.7	29.85	53	clear, sunny, very few clouds	3/22/ 2018
D	14:30	NW	4.8	5	1.6	30	63	29.81	88	clear, sunny, very few clouds	3/22/ 2018
E	7:20	WSW	0	0	0	52.6	43	29.86	48	partly cloudy	3/23/ 2018
D	9:50	NW	1.1	1.6	1.5	41.1	56.2	29.9	15	partly cloudy	3/23/ 2018

III. Traffic and Hourly Car/Truck Counts Data

Start Time	End Time	Location	18 Wheelers	Local Garbage Trucks	Open Top Garbage Trucks	Logging Trucks	Cars	Misc.	Total
13:15	14:15	D	7	5	2	1	5	2	22
14:15	15:15	D	14	3	5	2	9	4	37
15:15	16:15	D	8	6	1	0	20	5	40
16:15	17:15	D	6	1	0	0	9	2	18
14:15	15:15	A	0	1	0	0	24	5	30
15:15	15:40	A	0	0	0	0	13	2	15
15:35	16:35	D	14	9	0	0	20	5	48
16:40	17:40	D	3	0	0	0	28	1	32
14:30	15:30	D	8	3	4		9	8	32
15:30	16:30	D	10	9	2		6	5	32
7:20	8:20	E	8	4	2		10		24
8:20	9:20	E	10	4	8		14	1	37

IV. Community Health Survey Responses

Q1. Participant ID Number			
Q2. How many people live in your household, including you?			
	Answer	%	Count
	0	1.39	1
	1	16.67	12
	2	29.17	21
	3	13.89	10
	4	15.28	11
	5	16.67	12
	6	2.78	2
	7	2.78	2
	8	1.39	1
	Missing		2
Q3. How many people living in your household are under the age of 18?			
	Answer	%	Count
	0	55.88	38
	1	14.71	10
	2	13.24	9
	3	8.82	6
	4	4.41	3
	5	1.47	1
	25	1.47	1

	Missing		6
Q4. How long have you lived in Tallassee? (If you have moved away from the area and returned, please answer for total amount of time lived in Tallassee over the course of your life.)			
	Answer	%	Count
	3	3.08	2
	6	1.54	1
	7	1.54	1
	8	1.54	1
	10	3.08	2
	12	1.54	1
	15	4.62	3
	18	1.54	1
	17	3.08	2
	20	1.54	1
	21	1.54	1
	22	1.54	1
	24	1.54	1
	25	6.15	4
	26	1.54	1
	27	3.08	2
	29	1.54	1
	30	3.08	2
	35	3.08	2
	36	4.62	3
	39	1.54	1
	40	1.54	1

	43	1.54	1
	44	1.54	1
	45	4.62	3
	46	1.54	1
	47	1.54	1
	48	1.54	1
	50	3.08	2
	54	1.54	1
	55	1.54	1
	59	3.08	2
	60	4.62	3
	63	3.08	2
	67	1.54	1
	68	3.08	2
	69	1.54	1
	75	1.54	1
	81	1.54	1
	83	1.54	1
	88	3.08	2
	Missing		9
Q5. About how close do you live to the Stone's Throw Landfill?			
	Answer	%	Count
	Very close (within 1,000 feet, which is about a quarter of a mile)	13.51	10
	Close (within 2,500	5.41	4

	feet, which is about a half mile)		
	Within a mile	32.43	24
	Over 1 mile	37.84	28
	Not sure	10.81	8
	Missing		0
Q6. How often do garbage trucks traveling to or from the Stone's Throw Landfill pass your residence?			
	Answer	%	Count
	Multiple times a day	55.71	39
	Once a day	2.86	2
	Several times a week	18.57	13
	Once a week	20.00	14
	Never	2.86	2
	Missing		4
Q7. How would you describe the overall impact of the Stone's Throw Landfill on your community?			
	Answer	%	Count
	Positive	9.54	7
	Negative	79.45	58
	Not sure	10.96	8
	Missing		1
Q8.1 How concerned are you about each of the following issues relating to the Stone's Throw Landfill and its impact on your community? Smell coming from the landfill			
	Answer	%	Count
	Extremely concerned	69.86	51

	Very concerned	13.70	10
	Concerned	10.96	8
	Not concerned	1.37	1
	Not concerned at all	4.11	3
	Missing		1
Q8.2 How concerned are you about each of the following issues relating to the Stone's Throw Landfill and its impact on your community? Noise created by the landfill			
	Answer	%	Count
	Extremely concerned	47.14	33
	Very concerned	31.43	22
	Concerned	11.43	8
	Not concerned	7.14	5
	Not concerned at all	2.86	2
	Missing		4
Q8.3 How concerned are you about each of the following issues relating to the Stone's Throw Landfill and its impact on your community? Animals drawn to the area by the landfill			
	Answer	%	Count
	Extremely concerned	60.56	43
	Very concerned	7.04	5
	Concerned	11.27	8
	Not concerned	7.04	5
	Not concerned at all	0.0	0
	Missing		3
Q8.4 How concerned are you about each of the following issues relating to the Stone's Throw Landfill and its impact on your community? Traffic traveling to and from the landfill			

	Answer	%	Count
	Extremely concerned	68.06	49
	Very concerned	13.89	10
	Concerned	13.89	10
	Not concerned	0.0	0
	Not concerned at all	1.39	1
	Missing		2

Q8.5 How concerned are you about each of the following issues relating to the Stone's Throw Landfill and its impact on your community? Air pollution

	Answer	%	Count
	Extremely concerned	82.19	60
	Very concerned	8.22	6
	Concerned	4.11	3
	Not concerned	2.74	2
	Not concerned at all	2.74	2
	Missing		1

Q8.6 How concerned are you about each of the following issues relating to the Stone's Throw Landfill and its impact on your community? A decrease in property value since the creation of the landfill

	Answer	%	Count
	Extremely concerned	70.83	51
	Very concerned	18.06	13
	Concerned	8.33	6
	Not concerned	2.78	2
	Not concerned at all	0.00	0

	Missing		2
Q8.7 How concerned are you about each of the following issues relating to the Stone's Throw Landfill and its impact on your community? Litter falling out of garbage trucks traveling to the landfill			
	Answer	%	Count
	Extremely concerned	65.75	48
	Very concerned	22.55	15
	Concerned	8.22	6
	Not concerned	4.11	3
	Not concerned at all	1.37	1
	Missing		1
Q8.8 How concerned are you about each of the following issues relating to the Stone's Throw Landfill and its impact on your community? Adverse health effects caused by exposure to the landfill			
	Answer	%	Count
	Extremely concerned	80.56	58
	Very concerned	9.72	7
	Concerned	8.22	6
	Not concerned	2.78	2
	Not concerned at all	0.0	0
	Missing		2
Q9. Do you ever avoid going outside because of poor air quality?			
	Answer	%	Count
	Yes	84.72	61
	No	12.50	9

	Not sure	2.78	2
	Missing		2
Q10. How would you rate the health of the environment in which you live?			
	Answer	%	Count
	Very healthy	0.0	0
	Healthy	2.74	2
	Somewhat healthy	12.33	9
	Unhealthy	38.36	28
	Very unhealthy	46.58	34
	Missing		1
Q11. How would you rate your personal health?			
	Answer	%	Count
	Very healthy	6.76	5
	Healthy	18.92	14
	Somewhat healthy	31.08	23
	Unhealthy	36.49	27
	Very unhealthy	6.76	5
	Missing		0
Q12. How do you pay for health care?			
	Answer	%	Count
	Pay cash (no health insurance)	10.81	8
	Private health insurance (e.g. insurance provided	29.73	22

	through your employer or spouse's employer)		
	Medicaid	16.22	12
	Medicare	28.38	21
	Veterans Administration (VA)	4.05	3
	Indian Health Service	0.0	0
	Other	6.76	5
	I prefer not to answer	4.05	3
	Missing	0.0	0
Q13. What hospital do you go to most of the time?			
	Answer	%	Count
	Community Hospital, Tallassee AL		45
	Elmore Community Hospital, Wetumpka AL		1
	VA Medical Center, Tuskegee AL		2
	VA Medical Center, Montgomery AL		2
	Baptist Medical Center, Montgomery AL		15
	Lake Martin Community Hospital, Dadeville AL		0
	Jackson Hospital, Montgomery AL		4
	Prattville Baptist Hospital, Prattville AL		0
	Bullock County		0

	Hospital, Union Springs AL		
	East Alabama Medical Center, Opelika AL		13
	Russell medical, Alexander City AL		1
	Other		7
	Prefer not to answer		0
	Missing		1
Q14. Has a doctor, nurse, or other health professional ever told you that you that you have asthma?			
	Answer	%	Count
	Yes	29.17	21
	No	68.06	49
	Prefer not to answer	2.78	2
	Missing		2
Q15. If yes, at what age were you diagnosed?			
Q16. Has a doctor, nurse, or other health professional ever told you that you that you have chronic obstructive pulmonary disease (COPD), chronic bronchitis, or emphysema?			
	Answer	%	Count
	Yes	20.83	15
	No	73.61	53
	Prefer not to answer	5.56	4
	Missing		2

Q17. If yes, at what age were you diagnosed?			
Q18. Has a doctor, nurse, or other health professional ever told you that you that you have cancer?			
	Answer	%	Count
	Yes	6.85	5
	No	90.41	66
	Prefer not to answer	2.74	2
	Missing		1
Q19. If yes, what type of cancer were you diagnosed with?			
Q20. How many biological children do you have?			
	Answer	%	Count
	0	23.44	15
	1	12.50	8
	2	17.19	11
	3	25.00	16
	4	10.94	7
	5	4.69	3
	6	4.69	3
	7	1.56	1
	Missing		10
Q21. Has a doctor, nurse, or other health professional ever told you had a miscarriage?			
	Answer	%	Count

	Yes	11.43	8
	No	70.00	49
	Prefer not to answer	1.43	1
	Missing		4
Q22. If yes, how many miscarriages have you experienced?			
	Answer	%	Count
	1		6
	Missing		68
Q23. Has a doctor, nurse, or other health professional ever told you that your child was born with a birth defect?			
	Answer	%	Count
	Yes	8.22	6
	No	75.34	55
	Prefer not to answer	2.74	2
	Missing		1
Q24. If yes, were you living in the Ashurst Bar/Smith Community when the child was born?			
Q25. Has a doctor, nurse, or other health professional ever told you that a child (under the age of 18) living in your household has asthma?			
	Answer	%	Count
	Yes	25.35	18
	No	63.38	45
	I do not have children living in my household	11.27	8
	Missing		3

Q26. If yes, how many children (under the age of 18) living in your household have been diagnosed with asthma?			
	Answer	%	Count
	1	81.25	13
	2	12.50	2
	3	6.25	1
	Missing		58
Q27. Do you smoke?			
	Answer	%	Count
	Yes, I smoke regularly	7.04	5
	No, but I smoked regularly in the past	19.72	14
	No, I have never been a smoker	69.01	49
	I prefer not to answer	4.23	3
	Missing		3
Q28. Please check all symptoms that YOU have experienced in the past month.			
Q29. Has a member of your household died in the past 5 years?			
	Answer	%	Count
	Yes	16.18	11
	No	82.35	56
	Prefer not to answer	1.47	1
	Missing		6

Q30. If yes, what was their cause of death?			
Q31. What is your gender?			
	Answer	%	Count
	Female	66.67	46
	Male	33.33	23
	Prefer not to answer		5
Q32. What is your age?			
	Answer	%	Count
	25 or younger	10.96	8
	26-39	17.81	13
	40-54	21.92	16
	55-64	20.55	15
	65 and over	27.40	20
	Prefer not to answer	1.37	1
	Missing		1
Q33. What is your annual household income? The combined income of all wage earners in your household.			
	Answer	%	Count
	Less than $20,000	39.44	28
	$20,000-$29,000	9.89	7
	$30,000-$39,000	11.27	8
	$40,000-$49,000	1.41	1

	$50,000 or above	18.31	13
	Prefer not to answer	19.72	14
Q34. What ethnicity do you most identify yourself as?			
	Answer	%	Count
	African American/Black	90.41	66
	Asian/Pacific Islander	0.0	0
	Hispanic/Latino	0.0	0
	Native American	0.0	0
	White/Caucasian	8.22	6
	Mixed	1.37	1
	Other	0.0	0
	Prefer not to answer	0.0	0
	Missing		1
Q35. Are there any additional comments that you would like to provide?			

EXHIBIT 7

FOIA 2021-001987

In The Matter Of:

Alabama Department of Environmental Management
Permit Hearing

November 10, 2016

Baker Realtime Reporting, Video and Litigation Support
250 Commerce Street
Third Floor, Suite One
Montgomery, Alabama 36104
www.BakerRealtime.com

Original File 11-10-16 ADEM Permit Hearing.txt

ED_006727_00008856-00159

1 ALABAMA DEPARTMENT OF
2 ENVIRONMENTAL MANAGEMENT
3
4
5
6 * * * * * * * * * *
7 PUBLIC HEARING
8 APPLICATION TO MODIFY PERMIT
9 STONE'S THROW LANDFILL
10 LANDFILL PERMIT NO. 62-11
11 November 10, 2016
12 6:00 p.m.
13 * * * * * * * * * *
14
15
16
17
18 Tallassee City Hall Courtroom
19 3 Freeman Avenue
20 Tallassee, Alabama 36078
21
22
23

1 HEARING OFFICER: If everyone
2 would come to order, please. At this
3 time, I would ask everybody to please
4 mute or turn off your cellphone.
5 Good evening and welcome --
6 PUBLIC: Good evening.
7 HEARING OFFICER: Thank you.
8 -- and welcome to the public hearing of
9 the Alabama Department of Environmental
10 Management. My name is Rebecca Patty and
11 I am designated to be the hearing officer
12 for these proceedings. The role of the
13 hearing officer is limited to ensuring an
14 orderly hearing so that an accurate
15 record of the hearing may be developed
16 for the Department's --
17 UNIDENTIFIED MALE: Can't hear
18 you.
19 UNIDENTIFIED MALE: Hold the mic
20 a little closer.
21 UNIDENTIFIED MALE: You've got to
22 speak directly into it.
23 UNIDENTIFIED MALE: Yeah.

1 HEARING OFFICER: Okay. Sorry
2 about that. Can you hear me now? Can
3 you hear me now? Should I just yell?
4 I do not make the decision on the
5 issuance of this permit. On behalf of
6 the director, Lance LeFleur, and the
7 Department, we appreciate your attendance
8 and participation in tonight's hearing.
9 The subject of this hearing is the
10 proposed renewal of Municipal Solid Waste
11 Landfill Permit No. 62-11 for Hodges,
12 Harbin, Newberry & Tribble, Incorporated,
13 on behalf of Tallassee Waste Disposal
14 Center, Incorporated, to operate a
15 municipal solid waste landfill known as
16 the Stone's Throw Landfill located in
17 Sections 26 and 27, Township 18 North,
18 Range 22 East on Washington Boulevard in
19 Tallapoosa County. The permitted
20 facility consists of 175.39 acres with
21 124.57 acres permitted for MSW disposal
22 operations and 5.80 acres permitted for
23 C&D disposal operations.

1 The purpose of this hearing tonight
2 is to provide the public with an
3 opportunity to present oral testimony on
4 the proposed issuance of this permit. In
5 addition to oral testimony, the
6 Department will also consider all written
7 comments submitted before the close of
8 the public comment period. The
9 Department has requested your comments
10 and we appreciate you taking the time to
11 make them known to us.
12 Notice of the date, time, place, and
13 purpose of this hearing was published in
14 the Alexander City Outlook on October 6,
15 2016. In addition, the Department also
16 sent notice of this hearing by direct
17 mail to 41 individuals and organizations
18 and by electronic mail to approximately
19 1290 individuals and organizations who
20 had previously requested advance notice
21 of permit proceedings. A copy of that
22 notice, the certification of publication,
23 and the mailing list will be entered into

1 the record of these proceedings.
2 Copies of the public notice permit
3 application and proposed permit have been
4 made available for inspection by the
5 public and at the Department of
6 Environmental Management's office at 1400
7 Coliseum Boulevard in Montgomery. The
8 notice and permit have also been
9 available on the Department's website.
10 This hearing is open to the public
11 and anyone wishing to present oral
12 testimony or submit a written statement
13 may do so. Those who have not previously
14 completed a registration card here at the
15 front should do so at this time and
16 present it to the Department
17 representatives at the registration
18 table.
19 Thank you, Ms. Bevers.
20 Those who wish to receive the
21 Department's response to comments should
22 also fill out a registration card.
23 Lengthy statements or those

1 containing considerable technical or
2 other complex data should be submitted in
3 writing. Summaries of such statements
4 may be presented orally. All testimony
5 and written comments should be as factual
6 as possible and should address the
7 subject of this hearing.
8 This hearing is an opportunity for
9 members of the public to offer comments
10 to help assure that all relevant factors
11 are considered before a final permit
12 decision is made. Persons giving
13 testimony tonight will not be subject to
14 questioning by the public but may be
15 questioned by the hearing officer or the
16 Department staff to clarify points and to
17 develop a better understanding of what is
18 being presented.
19 This proceeding today is not an open
20 forum as in a question-and-answer
21 session; rather, it's an opportunity for
22 you to submit comments that you wish the
23 Department to consider in the final

1 review of this proposed permit. However,
2 you may pose a comment in the form of a
3 question which will be complied -- I'm
4 sorry -- compiled and addressed by the
5 Department in its complete response to
6 comments. It is important to note that
7 written comments submitted through the
8 mail are given the same consideration as
9 those that are presented in person at
10 this hearing. All oral and written
11 testimony will be included in the final
12 hearing record.
13 In addition to oral testimony,
14 written comments may also be submitted.
15 All written statements previously
16 submitted and those received by the
17 hearing officer before 5 p.m. Thursday,
18 November 17, 2016, will be included in
19 the hearing record.
20 Once completed, the hearing record,
21 including a transcript of this hearing
22 tonight and all written submissions
23 received by the Department before the

1 close of the comment period, will be open
2 to public inspection at the Department's
3 offices in Montgomery.
4 After giving full consideration to
5 the hearing record, the Department of
6 Environmental Management will announce
7 its decision on the proposed permit.
8 Now, on to the purpose of the
9 hearing this evening, which is the
10 receipt of the public comments. The
11 order of appearance of persons giving
12 testimony will be as follows: First, a
13 representative of the Department of
14 Environmental Management. Then I'll call
15 on any elected officials or their
16 representatives who have registered to
17 speak. All remaining members of the
18 public will be heard in the order in
19 which they filed their registration
20 cards. If you wish to testify and have
21 not already registered to do so, again,
22 please register at this time. I would
23 ask each person when you make a statement

to step up to the microphone, please give your name, any interest or organization that you represent.

And I am requesting that everyone limit their comments to five minutes since I have asked for lengthy statements to be submitted in writing. If anyone feels like they would like to make additional comments, I will appropriate more time after everyone in attendance has had a chance to speak.

I now recognize Mr. Devin Jenkins to present a statement on behalf of the Department of Environmental Management.

Mr. Jenkins.

MR. JENKINS: Good evening.

PUBLIC: Good evening.

MR. JENKINS: Can y'all hear me all right?

PUBLIC: Yes.

MR. JENKINS: My name is Devin Jenkins, and on behalf of the Alabama Department of Environmental Management,

1 we thank you for your participation in
2 the permitting process for the Stone's
3 Throw Landfill, Permit 62-11.
4 Hodges, Harbin, Newberry & Tribble,
5 Incorporated, on behalf of Tallassee
6 Waste Disposal Center, Incorporated, has
7 submitted to the Alabama Department of
8 Environmental Management an application
9 to renew its solid waste disposal
10 facility permit for the Stone's Throw
11 Landfill located in Tallapoosa County,
12 Alabama. The Stone's Throw Landfill
13 facility is located in Sections 26 and
14 27, Township 18 North, Range 22 East on
15 Washington Boulevard in Tallapoosa
16 County.
17 The waste stream for the Stone's
18 Throw Landfill would remain nonhazardous
19 solid wastes, noninfectious, putrescible
20 and nonputrescible waste including but
21 not limited to household garbage,
22 commercial waste, industrial waste,
23 construction and demolition debris,

1 sludge from wastewater treatment plants,
2 and other similar-type materials.
3 Special waste approved by ADEM may also
4 be accepted. The service area for the
5 Stone's Throw Landfill would remain all
6 counties in the state of Alabama, and the
7 state of Georgia counties: Harris,
8 Muscogee, and Troup. The maximum average
9 daily volume of waste allowed to be
10 disposed at the Stone's Throw Landfill
11 would remain 1,500 tons per day. All
12 previously-approved variances and special
13 conditions would be granted in the
14 renewed permit.
15 Based on our review of the permit
16 renewal application, the Department has
17 made a preliminary determination that the
18 proposed renewal would be in compliance
19 with the applicable state and federal
20 solid waste disposal requirements and
21 thus protective of public health and the
22 environment. The proposed permit
23 includes the following conditions:

1 One, upon reissuance, the permit
2 would be valid for a five-year period.
3 Two, the permittee would construct a
4 composite liner and leachate collection
5 system as described in the permit
6 application.
7 Three, the permittee would continue
8 to conduct groundwater monitoring
9 semiannually.
10 Four, the permittee would continue
11 to conduct explosive gas monitoring
12 quarterly.
13 Five, the permittee would at all
14 times properly operate and maintain the
15 facility and all systems in accordance
16 with the application and the permit.
17 Six, the permittee would maintain
18 the integrity of the final cover system
19 throughout the life of the permit and
20 post-closure period.
21 Seven, the permittee would obtain
22 the approval of ADEM for any change or
23 modification to the facility or a system

which might otherwise result in noncompliance with the permit or ADEM's administrative codes.

The purpose of tonight's hearing is to provide an opportunity to receive public comment regarding the application and proposed permit. The Department welcomes your input to this process and will consider all technical comments prior to making a final decision concerning the issuance of this permit and will provide a written response to each commenter and those requesting specific notice of our decision.

Thank you again for participating in the hearing.

THE COURT: Thank you, Mr. Jenkins. Okay. I will now recognize Ex. 6 Personal Privacy (PP)

Ex. 6 Personal Privacy (PP) Good evening, everybody. You said it. My name is Ex. 6 Personal Privacy (PP) And while I am not a resident of the affected community, I am

1 a resident of Elmore County. I currently
2 serve as the president of Elmore County's
3 NAACP of which several of our members are
4 residents of this county and the affected
5 community.
6 My concern today is similar to the
7 concern of many of the residents. Those
8 concerns filter around the fact that the
9 presence of this landfill results in the
10 residents having to curb outdoor
11 activities, air pollution from the
12 landfill as well as increased pollutants
13 from heavy and oversized vehicle traffic,
14 playing of their children outside and the
15 offensive odors, especially on warm and
16 hot days, the possible impact that it may
17 have on the drainage systems -- despite
18 your earlier comments -- the spillover
19 impacting to water systems, increased
20 presence of pests and vultures and other
21 vermin and the diseases that oftentimes
22 accompany such creatures.
23 Another concern is the constant

1 degrading effect that the presence of a
2 landfill has on property values. When
3 people try to move either in or out, the
4 strain that they already have on hard-
5 earned dollars then to find that the
6 property that they bought some time ago
7 is no longer valued not because
8 necessarily the landfill may be deemed
9 illegal because it meets current
10 ordinances, but the presence of the
11 landfill itself brings about these kinds
12 of things.
13 And what's perhaps more important is
14 the unknown impact this kind of hazardous
15 situation may have on pregnant women and
16 their unborn babies. One of the
17 questions -- even though, ma'am, you said
18 that it's not necessarily a question-and-
19 answer session, I do have some questions
20 for -- am I allowed to ask?
21 HEARING OFFICER: You can ask if
22 they're in writing. If you'd like to
23 submit them, I will make them a part of

1 the record and the Department will
2 respond to them.
3 Ex. 6 Personal Privacy (PP) I can submit them in
4 writing after tonight. Would that be
5 acceptable?
6 HEARING OFFICER: Yes.
7 Ex. 6 Personal Privacy (PP) Okay.
8 HEARING OFFICER: The public-
9 comment period ends Thursday the 17th at
10 5 p.m., so if you could make those
11 available, I will make them a part of the
12 record.
13 Ex. 6 Personal Privacy (PP) I will. Okay. I will
14 end my comments at this point. And I
15 suppose I can obtain the e-mail address
16 where I should submit?
17 HEARING OFFICER: Eric? Thank
18 you, Ex. 6 Personal Privacy (PP)
19 Thank you, ma'am.
20 HEARING OFFICER: Okay. The next
21 person is Ex. 6 Personal Privacy (PP)
22 Ex. 6 Personal Privacy (PP)
23 HEARING OFFICER: Say that again.

1 Ex. 6 Personal Privacy (PP)

2 HEARING OFFICER: Thank you.

3 Ex. 6 Personal Privacy (PP): Thank you. I

4 stand today on behalf of Ex. 6 Personal Privacy (PP)

5 Ex. 6 Personal Privacy (PP) presiding prelate of

6 the Alabama-Florida Episcopal District,

7 which spans from Huntsville, Alabama to

8 Key West, Florida and about 300 churches.

9 We are -- he's just recently assigned.

10 He's been here about three months. This

11 news came to us about two weeks ago in

12 Opelika, Alabama, during our annual

13 conference.

14 We're quite appalled, one, that this

15 landfill in Tallassee is in the middle of

16 the black community and now more property

17 is purchased. That's one appalling fact.

18 Was secondly appalled that it hasn't

19 mattered that there's a stench from the

20 landfill that has infiltrated our church

21 properties and our members' homes.

22 Ex. 6 Personal Privacy (PP) is present who owns

23 property one-half mile from the landfill.

1 Our church New Zion, AME Zion, Reverend
2 Ex. 6 Personal Privacy (PP) is present. They are
3 less than 30 yards, so the stench of this
4 landfill is present whenever they
5 assemble to worship. We're absolutely
6 certain that the environmental management
7 agency would never do that to their
8 property or the citizens around their
9 property nor their churches.
10 Thirdly, this cannot be healthy. I
11 contacted my brother, Ex. 6 Personal Privacy (PP)
12 who is a soil scientist, retired, from
13 Alabama A&M University. So we'd like to
14 know what kind of leakage is getting into
15 the soil, how it's affecting the water
16 table, because all of this, as you very
17 well know, affects our health. Because
18 of the stench, we're reported that the
19 church now has to have purifiers inside
20 of the church.
21 Ex. 6 Personal Privacy (PP) -- I'm told by
22 Ex. 6 Personal Privacy (PP) - two weeks ago has had the
23 police to come and shoot buzzards from

1 the top of her home. To put it very
2 bluntly, it's quite appalling but also
3 despicable that these faithful people who
4 bought property, who maintain their
5 properties, such as Ex. 6 Personal Privacy (PP), and our
6 church members are ignored for the past
7 14 years. The stench gets greater, the
8 buzzards increase and I'm sure other
9 vermin, as my Elmore County friend
10 Ex. 6 Personal Privacy (PP) said.
11 So we are appealing that it would be
12 denied. We will do everything legally
13 possible to make sure all America knows
14 that our residents and citizens, our
15 Zionites and our other brothers and
16 sisters in Christ would not suffer this
17 at the hand of an agency which is
18 supposed to represent the interest first
19 of the citizens of the state of Alabama.
20 Thank you very much.
21 HEARING OFFICER: Thank you,
22 Ex. 6 Personal Privacy (PP)
23 Ex. 6 Personal Privacy (PP) Good evening.

1 HEARING OFFICER: Good evening.
2 Ex. 6 Personal Privacy (PP) Since we only have
3 five minutes, I'm going to make this as
4 brief as I possibly can. One of the
5 things I want to start off with is just
6 give everybody a little bit of taste of
7 what's going on here. We've been dealing
8 with this issue now since -- since the
9 late '90s, and we've made all these
10 appeals and we haven't really got
11 anywhere. And my issue is here that
12 Title VI has been violated. I'm going to
13 show you a picture.
14 HEARING OFFICER: Do you want
15 to --
16 Ex. 6 Personal Privacy (PP) My issue is Title VI
17 has been violated. It has been. You've
18 been seeing it for a long time. And the
19 sad thing about it is, the folks that are
20 supposed to enforce it don't do it. And
21 I'm talking about the EPA. Actually, I'm
22 talking about the Department of Justice
23 on down to the local county. Anybody who

1 gets a federal dollar is supposed to be
2 compliant with Title VI.
3 What I have here -- this is not a
4 new picture. We've shown it to ADEM
5 before. I had it blown up so you can see
6 what I'm talking about. This orange
7 right here is the landfill. All this
8 pink stuff is black-owned land. That
9 land, it should never have been
10 permitted. People down there with a
11 problem with the landfill knows. The
12 landfill didn't permit themselves. ADEM
13 permitted the landfill. Tallapoosa
14 County purposely sought out this property
15 where black folks live to put their
16 landfill. And they documented it.
17 That's the issue here.
18 We don't have the money to buy
19 lawyers. We don't have the money to
20 fight this. And we're dealing with an
21 unfair share of the State of Alabama and
22 Georgia's burden. And from what I hear,
23 told me, when Katrina hit, get to deal

1 with their burden also.
2 Now, I don't say anything I can't
3 back up. There are trucks running
4 through that landfill at three o'clock in
5 the morning, 3:38. I have pictorial
6 documentation on it. Now, why would they
7 be going to a landfill that's only
8 supposed to operate from six to six at
9 three o'clock in the morning? And it's
10 not just one truck. And I clock the
11 trucks going by our neighbor's house, and
12 there were at least 140 landfill-related
13 trucks that went past their house within
14 almost 60 to 80 feet of their home on
15 winding, narrow roads that have not been
16 improved. These decisions were made in
17 the absence of any consultation between
18 the Department of Transportation,
19 Department of Health, and any other
20 agencies that should have been consulted
21 on this.
22 And I think that's why Governor
23 Bentley has recently developed this task

1 force, because they're realizing here
2 that even though ADEM only wants us to
3 talk about technical stuff in the
4 landfill, the impacts go beyond the
5 landfill. Now, the stench they talk
6 about, I've smelled it as far away as
7 Highway 14. That's almost three miles
8 from the landfill. And then when folks
9 realized what it was, I started getting
10 reports from Wall Street that people were
11 smelling the landfill. And we also have
12 full documentation on what's happening
13 there as well. Drone technology is
14 amazing. It really is, you know. And
15 there's a reason for it happening, and
16 ADEM's not enforcing it.
17 So we've got an unfair burden of
18 people who can't afford lawyers, who
19 can't afford to defend themselves, and
20 we're looking at agencies that are
21 mandated to do that. You guys know what
22 your mission statement says? Let me read
23 it to you. ADEM's mission says -- the

1 mission at ADEM is to ensure that all
2 citizens of the state a safe, healthful,
3 and productive environment. That's the
4 mission of ADEM. And you see what we got
5 here.
6 And my five minutes is up, I'm
7 probably sure, by now. I have a list of
8 things here. I will put it in writing.
9 And we will be asking for an extension
10 based on the fact we don't have time to
11 cover everything that needs to be
12 covered. One more thing I want to tell
13 you. There's a school bus -- two of
14 them -- that travel that road, and the
15 bus driver can't get anybody to drive for
16 her because the road's too dangerous.
17 When they get to the school, I'm told
18 that she has to clean up the vomit from
19 the students smelling the stench from the
20 landfill. See what I'm saying? And our
21 problem's not with the landfill. They're
22 just doing what they're supposed to do.
23 They're businesspeople. They're making

1 money hand over fist while we suffer.
2 The job you guys got is very
3 important. If you don't do it, we're
4 going to suffer. And the pitiful thing
5 about this here, if you look at the
6 strategy of where it's placed, near the
7 community here it's about 85 percent
8 black folk. And if you're sitting right
9 there on the county line, right on the --
10 right on the fall line, now, mind you --
11 everything runs downhill, right, and it
12 filters right into Macon County, right
13 into the Black Belt. That's what our
14 problem is. Thank you.
15 HEARING OFFICER: Thank you,
16 Ex. 6 Personal Privacy (PP)
17 Ex. 6 Personal Privacy (PP) Thank you.
18 My name is Ex. 6 Personal Privacy (PP) and I
19 am the chairman of the legal redress
20 committee of the NAACP for Tallapoosa
21 County. Good evening.
22 PUBLIC: Good evening.
23 Ex. 6 Personal Privacy (PP) When

1 Ex. 6 Personal Privacy (PP) mentioned Title VI, he's
2 referring to Title VI of the Civil Rights
3 Act of 1964. And I'm sure that you know
4 that, but I wanted the audience to also
5 know that. We feel that so many things,
6 so many injustices, have been committed
7 by the landfill per ADEM who is supposed
8 to protect and provide safety and even
9 health concerns for the citizens of this
10 area.
11 I travel 49 every Sunday morning and
12 I have personally witnessed buzzards
13 landing on homes on 49. I'm sorry I
14 don't have any pictures, but I'm sure
15 that somebody has some. This problem has
16 gone on. I have been involved in and out
17 of this situation since 2001, and it has
18 gotten worse, not better. It's gotten
19 worse.
20 My other concern is the task force
21 that Governor Bentley just recently
22 appointed in September of this year.
23 There -- to my knowledge, there are no

1 black representatives and particularly
2 anybody that represents the area on that
3 task force. You have a lot of
4 professional people, professors, and what
5 have you who are members of that task
6 force. And we feel that it's a
7 violation, a violation of trust if
8 nothing else, that there's not a
9 representative from the community as a
10 member of that task force. Everybody
11 that's on that task force, I'm sure,
12 don't live in this area. Don't live in
13 this area.
14 And it's impossible to get in all
15 the facts you might be able to gather in
16 some documentation, but I would
17 personally invite the committee through
18 ADEM to send somebody just to live with
19 some of the neighbors or just to come and
20 visit on Sunday morning at New Zion AME
21 Zion Church just for one hour, and I
22 guarantee if you come just for one hour
23 you will really understand the impact of

1 the community.
2 This area was a thriving area. And
3 I understand that the mill is closed. It
4 was a thriving area back in 2001. If you
5 ride through the area, it looks like --
6 almost like somebody dropped a bomb on
7 the area. Trees are dying. You don't
8 hardly even see any -- people had
9 chickens in their yards. There's nobody
10 that has a chicken in their yard anymore
11 in that area. Something is seriously
12 wrong. And we really invite ADEM to go
13 back to the governor and say to the
14 governor -- because too much of this is
15 going on in the state of Alabama. Too
16 much has gone on. You talk about
17 Anniston. When they went through
18 Monsanto, they provided help and senators
19 for the people that live in that area.
20 There's nothing in any records concerning
21 health or for the protection and safety.
22 You talk about Uniontown and what they're
23 going through and other areas around the

country. Flint, Michigan and the water contamination. Part of these companies are involved with that contamination in Flint, Michigan.

Too much has gone on. Enough is enough. And we as the NAACP are asking that this permit would be denied, will be denied tonight. Thank you.

HEARING OFFICER: Thank you.

Ex. 6 Personal Privacy (PP)

Ex. 6 Personal Privacy (PP) Good evening.

PUBLIC: Good evening.

HEARING OFFICER: Good evening.

Ex. 6 Personal Privacy (PP) Good evening, my family and my community. I'm going to be longer than five minutes because -- I'm going to try, but it's impossible to discuss what has happened since I got involved with this in 2003.

But, anyway, my name is Ex. 6 Personal Privacy (PP) Ex. 6 Personal Privacy (PP) I'm here on behalf of my family who has been in the Ashurst Bar/Smith Community for six generations.

1 Stand up back there, baby. The baby
2 standing up is the sixth generation of my
3 family. If you ask her what does the
4 landfill do (indicating). In other
5 words, it stinks.
6 According to the 1870 census, my
7 parental great-grandparents were born in
8 the 1850s, making them slaves. And they
9 have been in this community for about 146
10 years. What happened to us? Why do we
11 get targeted? By the way, the approval
12 of the permit and the renewal application
13 by the Tallapoosa County Commission for
14 the operation of Stone Throw's Landfill
15 in Ashurst Bar/Smith Community has
16 impacted our quality of life. Is there
17 any member of the Tallapoosa County
18 Commission here tonight? And by the way,
19 this landfill is in east Tallassee,
20 Alabama, but the organization is in
21 Tallassee, Alabama, Elmore County. The
22 money comes to Elmore County and none
23 comes to Tallapoosa County where we have

1 been impacted since the 1980s at least.
2 The destruction of our environment
3 and our property, in my opinion, is a
4 violation of the 14th Amendment. Our
5 soil, our air, our personal safety, and
6 the value of our land have been
7 negatively impacted. Therefore, we are
8 being deprived of a good quality of life.
9 The 14th Amendment provides that for
10 every citizen regardless of your color.
11 Why were we targeted and our rights taken
12 away?
13 In my opinion, in August 2003 -- I
14 was here for the public hearing then.
15 Nothing has changed. As a matter of
16 fact, I have a complaint before the EPA
17 that goes back to January -- back until
18 December 8, 2003. Part of that
19 hearing -- part of that complaint is
20 still pending 13 years later. What was
21 the issue? My allegation -- there were
22 two. The second allegation is the one
23 that's still pending, and that second

1 allegation is ADEM's failure to require
2 the Tallapoosa County Commission to
3 properly use deciding factors listed in
4 the EPA June 2003 Title VI investigative
5 report that it created discriminatory
6 effects for the African-American citizens
7 since most of the Tallapoosa County
8 Municipal solid waste landfills are
9 located in our community. That's been
10 lingering at the EPA since 2003. So it
11 is amazing to me to come here tonight and
12 hear as I heard August 2003 that you only
13 discuss technical issues when my
14 community, my family, my friends, my land
15 have been destroyed, and it's getting
16 worse.
17 That's some beautiful pictures you
18 have over there, but that landfill does
19 not look anything like that. It's not
20 maintained like that and it never has
21 been. If you look at that landfill in
22 January of this year when you-all were
23 dumping all of that water across the road

1 and we were traveling back and forth down
2 it and you were coming from the face of
3 the landfill and tracking across the
4 road, wasn't that contamination? You
5 don't care, apparently.
6 Following -- and I don't have enough
7 time, but I will submit it in writing.
8 In your own direct response to the
9 Durkwood investigation, which is what I
10 wrote my complaint about in 2003,
11 Mr. James Warr, director of ADEM,
12 response to the allegation that your --
13 that the EPA made in regards to why you
14 just deal with technical issues.
15 Mr. Warr said Alabama statutory extend
16 for landfill permitting requires local
17 governments, not ADEM, to consider
18 impacts to affected communities in
19 locating the landfill.
20 One more thing. Y'all said that all
21 our land was targeted because we had the
22 most reasonable land. Alabama is a
23 majority rural area. There are more

1 white citizens than black, so why is it
2 there are not more reasonable land in the
3 white community? Thank you.
4 HEARING OFFICER: Thank you,
5 Ex. 6 Personal Privacy (PP)
6 Ex. 6 Personal Privacy (PP) Good evening.
7 HEARING OFFICER: Good evening.
8 PUBLIC: Good evening.
9 Ex. 6 Personal Privacy (PP)
10 Ex. 6 Personal Privacy (PP) and I'm the president of
11 Tallapoosa County NAACP on the other
12 side, and I'm here with these people to
13 represent.
14 And if you look around, you see
15 young people as well. We want you to
16 consider what you're doing and the
17 methane gas that's burning most of the
18 night. I don't know if it's burning in
19 the daytime. But I saw the flow just by
20 the way and the seepage that's getting
21 through to the water, the fish. All the
22 wildlife is being affected. And we ask
23 you again to reconsider denying this

1 permit because it's no way that if this
2 was your community that you would allow
3 the things that are going on over
4 there -- the odor, the stench, even the
5 buzzards flying around like they're
6 having a Happy Meal. It's wrong. And
7 please consider that when you make your
8 decision. Thank you.
9 HEARING OFFICER: Thank you,
10 Ex. 6 Personal Privacy (PP)
11 Ex. 6 Personal Privacy (PP): Good evening.
12 HEARING OFFICER: Good evening.
13 PUBLIC: Good evening.
14 Ex. 6 Personal Privacy (PP): And I'm very
15 delighted to stand here before you and
16 have the privilege to speak as pastor of
17 the historic Butler Chapel AME Zion
18 Church in Tuskegee, Alabama, which was
19 the birthplace of Tuskegee University.
20 I moved here from Mobile where I
21 studied environmental issues at Spring
22 Hill College in Mobile, Alabama, because
23 we have a number of environmental issues

1 in the lower part of the state. Moving
2 to Tuskegee to a national forest, to this
3 area, I thought would be clean air,
4 fresher water, and people living well,
5 space, food that can be grown here. And
6 what I found is completely, completely
7 different.
8 As pastor of Butler Chapel, New Zion
9 AME Zion Church is on our district. I
10 made an attempt to go to worship at one
11 of their afternoon services during the
12 summer months. I couldn't even go into
13 the church. I had to turn around before
14 I could even get to the church and go
15 back because the air was just so bad.
16 It's got to be affecting the health of
17 these young people.
18 Now, somebody has to throw a little
19 something into the game, and I guess
20 that's my place, my place tonight. But
21 it's interesting to me that most of the
22 environmental issues in the state of
23 Alabama happen disproportionately in

1 African-American communities. And as I
2 stand here tonight and look at those of
3 you that I'm addressing, then it seems
4 interesting to me that not one person of
5 color is represented to hear the
6 complaints of the African-American
7 community. There seems to be an
8 insensitivity to the needs of the people
9 of Alabama. I want to make America, and
10 particularly Alabama, great again, but I
11 want it to be great for everybody. God
12 bless you. Thank you.
13 HEARING OFFICER: Thank you.
14 Ex. 6 Personal Privacy (PP)
15 Ex. 6 Personal Privacy (PP) Good evening.
16 HEARING OFFICER: Good evening.
17 PUBLIC: Good evening.
18 Ex. 6 Personal Privacy (PP) I'm a resident of
19 Ashurst Bar/Smith Community, a
20 predominantly black, African-American
21 community in Tallapoosa County. My
22 family has lived in this community
23 recently because we built a house here

1 right next door to my mother-in-law's
2 house. And we first moved here in 2001,
3 so we've been here at least over 15
4 years. My husband has been here a lot
5 longer because he was born here. But
6 over those 37 years, when we first moved
7 here, their well water here was
8 wonderful. I could drink cool water
9 right out of the faucet and don't taste
10 any chemicals in it. Now we pipe in our
11 water, so we pay for our water to be
12 delivered to us.
13 But it impacts our life, so I'm here
14 today to tell you how the Stone's Throw
15 Landfill has impacted me and my community
16 and why the Civil Rights Act and other
17 laws require that you consider the impact
18 of the landfill on me and my family as
19 well as the other black communities
20 before you continue to allow the landfill
21 to operate in our important historic
22 community.
23 The landfill has impacted my life.

1 We lived in South Carolina, we've lived
2 in Florida. My allergies here are really
3 bad. I have to see a specialist for the
4 last five years just in order to get
5 myself under control so I'm not having
6 sinus infections every month, every
7 month. My doctor didn't know what to do
8 with me. She sent me to a specialist,
9 and that specialist sent me to the
10 allergist. So my health has been
11 impacted a lot since I've been here.
12 And the noise. I know there's got
13 to be a landfill representative here.
14 And I know -- we live in a residential
15 community. We don't live in a business
16 district where you can come and roll in
17 at any time of hours at night you want
18 to. I wake up -- my alarm clock is set
19 at 5:30 in the morning. I don't need an
20 alarm clock to get up. This thing starts
21 kicking at 4:30 in the morning. I have a
22 brand-new house and I can still hear the
23 noise coming through. I can hear the

1 great big ole gravel truck thingies,
2 whatever those trucks are. I can hear
3 all that noise from 4:30 in the morning.
4 And if you want to come spend the night
5 at my house, you can have the guest room
6 on that side.
7 I haven't had a barbecue at my house
8 in several years. I have to plan and
9 decide whether I'm going to have a
10 barbecue we're going to come inside to
11 eat. It all depends on how it smells
12 outside. And I can smell the landfill
13 when I come home from work all the way
14 down to the gas line. And I don't know
15 how far it is away from my house, but I
16 know we're a mile and a half away from
17 that landfill.
18 So my important thing also is that
19 the roads are residential. The roads are
20 equipped for cars, for family cars.
21 They're not equipped for trucks/18-
22 wheelers coming around the corner. I met
23 a truck, an 18-wheeler truck, driving

1 down those curved roads on 49 going
2 towards the interstate on those little
3 narrow bridges. If you're going out, go
4 that way so you can see what we're
5 talking about. They are narrow bridges,
6 they're curved bridges, and you put these
7 great big ole 18-wheeler trucks in there.
8 They drive in the middle of that road. I
9 will stop on my side of the road before I
10 go over that bridge because that truck is
11 right smack in the middle of the road.
12 There are some safety issues in there,
13 and I need y'all to look at it. Thank
14 you.
15 HEARING OFFICER: Thank you.
16 Ex. 6 Personal Privacy (PP)
17 Ex. 6 Personal Privacy (PP) Good
18 afternoon. I won't be but five minutes.
19 I promise you. I come to you on behalf
20 of New Zion AME Zion Church that sits on
21 Ashurst Bar Road. There are 21 cozy
22 members. Everybody knows everybody,
23 everybody is related to everybody. There

1 are 15 children in that congregation.
2 Worship service used to start at
3 eleven o'clock. We've had to move it to
4 eight o'clock to try to prevent the
5 stench from stopping us from worshipping.
6 We operate now with two purifiers in the
7 sanctuary. We operate with one purifier
8 in the fellowship hall. We're only
9 allowed to worship twice a week. We come
10 for worship service at eight o'clock on
11 Sunday morning, and when you come -- on
12 your way to church, if you travel down
13 Washington Boulevard, you will not make
14 it to the church. Most of the
15 congregation comes by way of the lower
16 part of Washington Boulevard where it's a
17 dirt road in order to avoid the landfill.
18 If you make it to the church by
19 eight o'clock, you have to wait to
20 determine if you're going to be able to
21 get out of your car, because the landfill
22 stench is so strong at 8 a.m. on Sunday
23 morning. And if you go to the corner

1 back of the property, you can see the
2 flames from the torch burning on Sunday
3 morning. I can prove that.
4 Not only do you experience that, but
5 you talk about solid waste, deposit
6 lines, ground water, and gas monitoring.
7 I'm going to make it simple as pie. It
8 ain't happening, because on Sunday
9 morning, if you cannot walk from your car
10 to a church, it ain't happening. That
11 makes it just as plain as I can.
12 Ex. 6 Personal Privacy (PP) mentioned his
13 inability to worship with us. Can you
14 imagine a church of 21 people trying to
15 evangelize and encourage others to come
16 and worship with us when they can't come?
17 Can you imagine not being able to have a
18 picnic on a church ground because the
19 stench is so strong that you don't allow
20 the children to play outside the
21 sanctuary?
22 You talked to me about air quality.
23 You talked to me about the grounds. The

1 last few Sundays, the buzzards have
2 started to come to church. They don't
3 pay tithes, but they're starting to come
4 to church. Complaints on increased
5 respiratory issues among children. When
6 you have 15 children in a congregation,
7 they bring lots of things, but in the
8 last few years, those respiratory issues
9 have increased.
10 We don't drink the water. I meant
11 to bring you a bottle that you might
12 share, but we don't drink the water. We
13 have to provide bottled water for
14 worship/fellowship, any time. And in
15 terms of baptism, we have to go to
16 another church to baptize because we're
17 concerned about the water supply and our
18 inability to baptize the children. I had
19 five to join this year, but we had to
20 bring in bottled water and not the water
21 of the community.
22 So I come to you not on behalf of
23 brilliant people. I don't come to you on

1 behalf of a building. I come to you on
2 behalf of 21 members of the AME Zion
3 Church who attempt to worship twice a
4 week in a little place called New Zion
5 that sits on a hill that we can't go out
6 and breathe fresh air. Thank you.
7 Ex. 6 Personal Privacy (PP)
8 Ex. 6 Personal Privacy (PP) My name is
9 Ex. 6 Personal Privacy (PP) I'm the assistant
10 national coordinator for the T.O.P.S.
11 organization, I'm a member of the NAACP,
12 and I'm the president of the Concerned
13 Citizens for Equal Justice and I'm a
14 civil rights activist.
15 I was reading ADEM's statement, and
16 one of the things that you said was that
17 you was protecting the water, the air,
18 and the land. I've marched with a lot of
19 people, and here we are tonight concerned
20 about what's going on in this community.
21 And I asked, Where's all the press? This
22 is just like being in Flint, Michigan
23 when we got these people cannot even

1 drink the water that they're supposed to
2 be able to drink. And to hear a church
3 talking about that they can't even
4 baptize in their water that they're
5 paying water for.
6 And I want to know, how many of you
7 have been in that community? And now
8 they're saying buzzards are coming to
9 church. I bet you buzzards are not
10 coming to your church. When I got out of
11 the car, a young lady said -- I said,
12 What is that smell? And she said, It's
13 the landfill. And she said, I got a
14 headache. And here it is tonight. We
15 are asking you to not have this permit
16 granted. And I'm willing to stand with
17 these people to block the roads so they
18 can live peacefully in their community,
19 because we got a problem in -- in
20 Tallassee, we got a problem in
21 Tallapoosa, and it's a cancer. And that
22 cancer is this Stone's Throw Landfill.
23 I don't see no front pages. And I

1 heard somebody say, We need to make
2 America great again. And they need to
3 start with this landfill or we're going
4 to go back and contact people to march
5 until we get something done about this
6 landfill. And we're asking that you do
7 not grant this permit.
8 And I was asked by the NAACP --
9 which one of you has ever been in that
10 community on this panel?
11 (No response.)
12 Ex. 6 Personal Privacy (PP) Now, how can you
13 make a decision about something that
14 you've never been to? You said in
15 your -- in ADEM's prepared statement, you
16 said that you were going to protect the
17 water, the land, and the air and that
18 alone in your statement will tell you
19 that you need not to grant this permit.
20 And I'm willing to stand with the NAACP
21 and anybody in here tonight. We need to
22 stand up for something or fall for
23 anything and we are not going to let this

1 go with this landfill and this Flint-like
2 flavor that it has. ADEM need to get
3 some of these people's children tested to
4 make sure that their health is okay.
5 We're going to go back and call on
6 Ex. 6 Personal Privacy (PP) the national president
7 of T.O.P.S., to contact his brother, a
8 reverend up in New York City, to come
9 down here and that we are going to be
10 concerned about what's going on in
11 Tallassee. And I will promise you that
12 we'll be back. Do not allow this thing
13 to go any forward to -- forward tonight.
14 Dismiss this landfill and let these
15 people live that they may be free. We're
16 in America.
17 HEARING OFFICER: Thank you.
18 Ex. 6 Personal Privacy (PP)
19 Ex. 6 Personal Privacy (PP): Thank you so much
20 for this opportunity. My name is Ex. 6 Personal Privacy (PP)
21 Ex. 6 Personal Privacy (PP) I am pastor of St. John AME Zion
22 Church in Tuskegee, Alabama. I don't
23 know much about the Roll Tide or the War

1 Eagle of Alabama because I'm new, but I
2 traveled here from Marietta, Georgia.
3 And I came because I thought that this
4 situation was important enough to come
5 and see about.
6 As I'm driving on the highway,
7 sometimes I can pick up an odor and it
8 gets into the car, so I'm able to turn
9 off my vents because it gets pretty bad,
10 and then I kind of check and see if I
11 stepped in something while I was getting
12 in my car. But then it will pass, so I
13 can turn my vent back on and get the
14 fresh air. And then sometimes I'll drive
15 a little further -- coming here tonight
16 it was the same thing -- it was, Oh, I
17 smelled something bad. I turned off the
18 vent, I was able to breathe. It was hot,
19 but I was able to breathe, and then,
20 like, a little -- couple of miles down
21 the road, I can turn it back on and smell
22 the fresh air.
23 I guess the point that I'm making

1 is, for the people who are suffering with
2 this situation, they don't have the
3 ability to turn it on and off, but you
4 have the power to do it. So I'm hoping
5 with all this being said tonight -- I
6 appreciate this time, but I'm hoping that
7 the wisdom that carries with the
8 responsibility and the accountability
9 that you have in your office that you
10 will find it in your hearts to turn off
11 this odor. Thank you so much.
12 HEARING OFFICER: Thank you.
13 Ex. 6 Personal Privacy (PP)
14 Ex. 6 Personal Privacy (PP) Good
15 evening.
16 HEARING OFFICER: Good evening.
17 PUBLIC: Good evening.
18 Ex. 6 Personal Privacy (PP) Thank you
19 certainly for this time to share. I am
20 Ex. 6 Personal Privacy (PP) I am an eighth-
21 generation Zionite. I am a son of
22 Alabama who just returned to Alabama out
23 of the Michigan area. And we have dealt

1 with this matter just less than 18 months
2 ago in Flint, Michigan. You know like I
3 know, after all that's been said and
4 after sharing terms like submit them
5 technical with people who are here
6 possibly who don't even operate computers
7 who own land and this concerns them but
8 yet it affects those who are
9 forthcoming -- their children, their
10 grandchildren, their great-grandchildren.
11 We're talking about what happens today,
12 but we're forgetting about tomorrow.
13 There are children who are unborn who are
14 directly affected by this. You heard the
15 stats from Ex. 6 Personal Privacy (PP) you heard from
16 Ex. 6 Personal Privacy (PP) and other -- those who have
17 come before us, and more directly
18 Ex. 6 Personal Privacy (PP) of the New Mt. Zion
19 Church. I am the pastor of Wall Street
20 AME Zion Church whom I've just took
21 charge on Sunday. And I came in armed
22 with these people. And I stood from a
23 sacred desk that I would do as your

1 leader whatever I can do to protect your
2 spirit man that the rest of you might
3 grow. This affects spirituality. When
4 people cannot get to the house of prayer
5 where we have learned to assemble by
6 commitment, this is directly an injustice
7 beyond any title, any other amendment.
8 We -- as we know, Elmore County 25
9 years ago have dealt with this very same
10 matter in the Redland Community. Now
11 it's back, a stone's throw away in
12 Tallassee, Alabama. This is not only a
13 social injustice but it also affects our
14 direct equality as voters and taxpayers,
15 so I'm asking, too, like those my
16 brothers and sisters here tonight, that
17 this permit will not be granted.
18 HEARING OFFICER: All right.
19 There are no more registered speaker
20 cards indicating a desire to speak this
21 evening. If there are any more members
22 of the public who wish to speak tonight
23 who have not already given public

1 comment -- would you like to? And if you
2 would, just since I don't have a comment
3 card, if you would fill one out and just
4 give your name for the record. Thank
5 you.
6 Ex. 6 Personal Privacy (PP) Good afternoon.
7 PUBLIC: Good afternoon.
8 Ex. 6 Personal Privacy (PP) My name is
9
10 Ex. 6 Personal Privacy (PP)
11
12
13 I have many concerns about the
14 highway. Trucks come in -- and I live
15 right at the corner of Washington
16 Boulevard, and I live in the curve of it.
17 And when the trucks come in, it's not no
18 one, no two, no three, no four; it's too
19 many of them. I have two grandkids that
20 gets on a bus every morning. I would
21 like for you to have to be there to watch
22 them for the safety of their well-being
23 getting on the bus when a truck comes and

1 won't even stop. The fear of my
2 grandkids of getting killed by one of
3 those 18-wheeler trucks or even a trash
4 truck. They don't even have the audacity
5 to slow up if I'm out there watching.
6 They don't have the audacity to slow up
7 if my daughters, who is not here, are
8 walking.
9 We can't even grow food on our land
10 like we used to. We used to have collard
11 greens this wide (indicating) where they
12 won't even grow high. It's -- something
13 is going on, and the thing is that I know
14 that I've been there for 30-something
15 years and I know when it was peaceful. I
16 have seen that when they came in, then it
17 was stopped, and then it was allowed back
18 to come in. And it have put a tremendous
19 impact on my life, on my community, on
20 all of the black people that's there.
21 I'm not against, now, a white person
22 because I can love you just like I love
23 anybody else, but I am right about

1 fairness and justice. Where is the
2 justice at? Because the thing is, when
3 you have someone that you love and it's
4 another generation coming, you want them
5 to be able to grow up and have a safe
6 environmental life. And it's not there.
7 It's not there.
8 If y'all live over there -- and I'm
9 telling you, my house is right beside
10 that road. Them trucks starts at
11 three o'clock in the morning. I hear
12 them. They act like they in the house
13 with me. I have got to the point that I
14 could not sleep because I couldn't get
15 rest because of them going up and down
16 the road. And there's a big ole hole
17 that -- where they say they're going to
18 fix, keep this road up. Ain't nothing
19 done there. But you can tell me that
20 when you come up there and you're going
21 to ridicule my husband about when he had
22 somebody to dump something on our land
23 but then there go a big trash dump down

1 the road. And it's like a mountain now.
2 It ain't no little hill no more. It's a
3 mountain. You can see it from 49 all the
4 way over there from the interstate. And
5 when you go across this bridge coming out
6 of Tallassee, you can see it. That's a
7 mountain. That's not a hill no more.
8 And that much trash in there and
9 trash all up and down the road beside my
10 house. You know, it'd be sad for you to
11 come out your door and you see unsanitary
12 things that shouldn't be there and you
13 got little children and all of this and
14 then you got all this stuff from GKN and
15 Neptune, all this stuff fall out by your
16 house. You wouldn't like it. I'm
17 telling you you wouldn't like it, because
18 I don't like it. And I know if you lived
19 there, you wouldn't like it. And I thank
20 you for listening to my concern.
21 Ex. 6 Personal Privacy (PP) Good afternoon.
22 My name is Ex. 6 Personal Privacy (PP) I am a
23 resident and a member of New Zion AME

1 Zion Church. I have been a resident of
2 the Ashhurst community for 30 years. I
3 worship at New Zion. And I have three
4 small children. If you drive your
5 vehicles when you leave here tonight and
6 come to our community, it looks like we
7 live in poverty. The trash is
8 disgusting. The boys, the girls can't
9 even play football or soccer ball outside
10 because the smell is hindrance. I come
11 to you-all tonight asking you to step
12 inside our shoes, walk in our lives, talk
13 with us. Not just talk with us and sit
14 here before the panel, but come and
15 experience what we're experiencing. I
16 come to you-all tonight thanking you for
17 this opportunity, but also to ask you-all
18 to take into consideration the people
19 that live there. We want our community
20 back. We want to fellowship with one
21 another. We want other members to gain
22 trust in our community. We want other
23 churches to come and worship with us. We

1 want to share the goodness of God, but
2 how can we when you can't even get
3 outside of your vehicle? I come to you-
4 all tonight asking you-all to take into
5 consideration what we're dealing with on
6 a day-to-day basis. As the man mentioned
7 before, we can't turn it on and off. We
8 live in it.
9 My expenses for water is ridiculous.
10 We can't drink water. I can't cook with
11 the water. I can't even water -- feed my
12 dogs the water. It's just that bad.
13 When you ride up and down the street, the
14 trash, the potholes. How many vehicles
15 are we going to let get damaged? And
16 when we try to file it on our insurance
17 company, they can't do anything about it.
18 The boys and girls can't walk up and down
19 the street. I can't go visit my
20 neighbors. We've got to stay inside on a
21 hot, summery day. We can't turn on a
22 grill. We can't turn on music. We can't
23 fellowship. So I'm asking everybody here

1 today, walk in our shoes. Take a walk
2 over there, take a ride over there. My
3 door is open. The doors of New Zion are
4 open. Come worship with us. Come sit in
5 my house and have dinner and see what we
6 have to go through. Thank you.
7 Ex. 6 Personal Privacy (PP) My name is
8 Ex. 6 Personal Privacy (PP) I serve as
9 the presiding elder of the Opelika
10 district, the Alabama conference,
11 Alabama-Florida Episcopal District.
12 I stand before you because I'm
13 heartbroken. I'm heartbroken primarily
14 because the Tallassee community is very
15 dear to my heart. Twenty-six years ago,
16 I started pastoring in this community, so
17 these are my people, my family. As we
18 reflect -- and you've heard about New
19 Zion AME Zion Church. My father built
20 that church. And I'm heartbroken to hear
21 how the life and the well-being of this
22 community has been destroyed as a result
23 of this landfill. And I really think

1 that this agency, whoever approved it,
2 owes this community an apology but even
3 restitution. They're owed something,
4 because their quality of life has been
5 negatively impacted. That's not civil.
6 That's not Christian. That's not even
7 humanity.
8 At this point, I'm even reflecting
9 that if this has been going on for a
10 number of years, somebody has failed to
11 hold accountable those people that needed
12 to be held accountable for maintaining
13 this landfill, because I know that there
14 are other landfills where people don't
15 have to experience what this community is
16 experiencing. I have not heard anybody
17 in this community who are stakeholders,
18 property owners, and live in this
19 community agree to have the permit
20 approved. And as a result of that, I
21 think the fair and right thing to do is
22 to allow them to live in peace, to have
23 some happiness and well-being of life by

1 not approving this permit. But, also,
2 somebody owes them something.
3 HEARING OFFICER: All right.
4 Thank you. Please be advised that the
5 public comment period will end at 5 p.m.
6 Thursday, November 17th, 2016. All
7 comments must be received at the office
8 of the Department of Environmental
9 Management in Montgomery by that time.
10 After consideration of all the oral
11 comments and written comments, the
12 Department will make a determination
13 regarding the proposed permit issuance
14 and prepare a document responding to all
15 relevant comments received. If you have
16 not marked your registration card today
17 indicating that you wish to receive the
18 Department's response to the comments,
19 you should notify the Department in
20 writing immediately. You can send it to
21 the attention of Mr. Russell Kelly of the
22 Permits and Services Division. Comments
23 may also be e-mailed to

1 hearing.officer@adem.alabama.gov. In
2 addition, the Department will notify all
3 persons who request in writing notice of
4 the final permit decision.
5 And I thank you for your attendance
6 tonight and your participation this
7 evening and this hearing is adjourned.
8 Ex. 6 Personal Privacy (PP) Ma'am, may I -- for
9 point of clarification and procedure,
10 when you have received all of the
11 comments from people in writing as well
12 as the comments that you have gotten
13 tonight, when you have reviewed them, it
14 would be my request and hopefully the
15 request of this body here that a decision
16 on this request for an extension of that
17 permit not be made until after you have
18 informed those persons who have submitted
19 comments of what your intended decision
20 is, because if your intended decision is
21 to approve the request, then I would like
22 to think that these persons would have
23 the opportunity to speak against that

1 before you make that decision. Is that
2 acceptable to you, ma'am?
3 HEARING OFFICER: I have -- I
4 will allow that to be added to the record
5 and the Department will respond to that
6 if it's a relevant comment. That is not
7 for me to make that decision tonight.
8 Ex. 6 Personal Privacy (PP) Well, I would think
9 that it is indeed relevant.
10 HEARING OFFICER: So I will allow
11 that in the record.
12 Ex. 6 Personal Privacy (PP) Thank you.
13 HEARING OFFICER: Thank you.
14 Ex. 6 Personal Privacy (PP) But in the
15 meantime, what are these people, ma'am,
16 supposed to do? People have --
17 COURT REPORTER: Hold on.
18 HEARING OFFICER: Okay.
19 Ex. 6 Personal Privacy (PP) -- things still
20 running.
21 HEARING OFFICER: Okay.
22 Ex. 6 Personal Privacy (PP) Who has the
23 power --

1 HEARING OFFICER: I have --
2 Ex. 6 Personal Privacy (PP) -- to do a
3 temporary stay on this? because our
4 concerns are -- is that all of this going
5 on, what are they supposed to do, ma'am,
6 in the meantime? Who has the power to
7 say these people's cries and they put a
8 temporary stay on it until this decision
9 could be made and that this permit be not
10 granted. These people are suffering.
11 What are they supposed to do? Would any
12 of you-all come and spend the night at
13 their house or eat a barbecue in their
14 yard? What are they supposed to do and
15 wait this long? Who has the power, we're
16 trying to find out, that we can contact
17 and say, You got the power. This is an
18 elected official or who do we need to
19 contact, because this is a disgrace here,
20 ma'am.
21 Ex. 6 Personal Privacy (PP) Ma'am, a
22 point of reference.
23 COURT REPORTER: Could you state

1 your name, please?
2 Ex. 6 Personal Privacy (PP) Yes.
3 Ex. 6 Personal Privacy (PP)
4 COURT REPORTER: Thank you.
5 Ex. 6 Personal Privacy (PP) I would like
6 to just enter as part of the record that
7 I did contact WSFA News a few days ago
8 and I did ask for some news coverage of
9 this meeting; and normally when we call,
10 they respond. Something is very
11 mysterious that we call in plenty of time
12 and gave them advanced notice of this
13 meeting and then the news failed to come
14 and give coverage. And all of these
15 people here, something is -- something is
16 seriously wrong. And I just want it to
17 be part of the record. Thank you.
18 HEARING OFFICER: Okay. Thank
19 you. All right. Thank you for your
20 attendance and your participation. This
21 hearing is adjourned and the record of
22 tonight is closed.
23

1 REPORTER'S CERTIFICATE

2

STATE OF ALABAMA)
3)
ELMORE COUNTY)
4

5

6 I do hereby certify that the above
and foregoing transcript was taken down
7 by me in stenotype, and the questions and
answers thereto were transcribed by means
8 of computer-aided transcription, and that
the foregoing represents a true and
9 correct transcript of the testimony given
by said witness.
10

11 I further certify that I am neither
of counsel, nor any relation to the
12 parties to the action, nor am I anywise
interested in the result of said cause.
13

14
I further certify that I am duly
15 licensed by the Alabama Board of Court
Reporting as a Certified Court Reporter
16 as evidenced by the ACCR number following
my name below.
17

18

19 /s/ Bridgette W. Mitchell
Bridgette W. Mitchell
20 Certified Court Reporter and
Commissioner for the State of
21 Alabama at Large
ACCR No. 231 - Expires 9/30/17
22 MY COMMISSION EXPIRES 12/19/17

23

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EXHIBIT 8

Ex. 6 Personal Privacy (PP)

CONFIDENTIAL

ASHURST BAR / SMITH COMMUNITY ORGANIZATION
TALLASSEE WASTE DISPOSAL FACILITY

PRELIMINARY ENVIRONMENTAL INVESTIGATION

AUGUST / SEPTEMBER 2000

MST Project No. 2334-001

Prepared for:

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(256) 351-7900

May 2000

Ex. 6 Personal Privacy (PP)

SECTION 1: INTRODUCTION AND SCOPE OF ACTIVITIES

During August, 2000, the firm of Whatley Drake, L.L.C., Attorneys at Law of Birmingham, Alabama, contracted with Mid-South Testing and Environmental Engineering to conduct a preliminary environmental investigation of certain lands within the Ashust Bar / Smith Community which are in close proximity of the Tallassee Waste Disposal Facility. The effort was designed to provide baseline analytical data to address concerns of the Ashust Bar / Smith Community Organization of the potential for environmental / chemical impact to local water supplies and lands from the Tallassee Waste Disposal Facility.

The initial effort was to collect water samples from wells and springs, particularly those still utilized for domestic supply, which may have the potential to be impacted from landfill activities. During this effort, which was conducted on August 24, 2000, water samples from some four (4) sites were collected. The sites consisted of three (3) wells and one (1) spring. The sites included one (1) well sample from the Cleghorn property, two (2) well samples from the Stewart property and one (1) spring sample from the Linear property.

In order to address any potential public health concerns, the two (2) sample sites which are currently being utilized for full domestic (drinking, cooking, washing, etc.) purposes were chosen for analysis. These samples were analyzed for Primary and Secondary Drinking Water Standard parameters as put forth by the U. S. Environmental Protection Agency (USEPA) and the Alabama Department of Environmental Management (ADEM). The analyses consisted of some one hundred thirty four (134) individual tests for specific inorganic elements and compounds, synthetic organic chemicals, volatile organic compounds and radionuclides. Based on the analytical data, certain parameters were found at concentrations greater than the aforementioned standards. These parameters are presented and discussed in later tables and sections.

In order to better assess the site conditions and identify potential sources (man-made or natural) for the noted drinking water parameters, additional sampling and analysis of soils and water was authorized. Some seventeen (17) soil samples and two (2) additional water samples were collected and analyzed for the parameters of concern. The sample collection event took place on September 27, 2000. These analytical results are presented and discussed in later tables and sections.

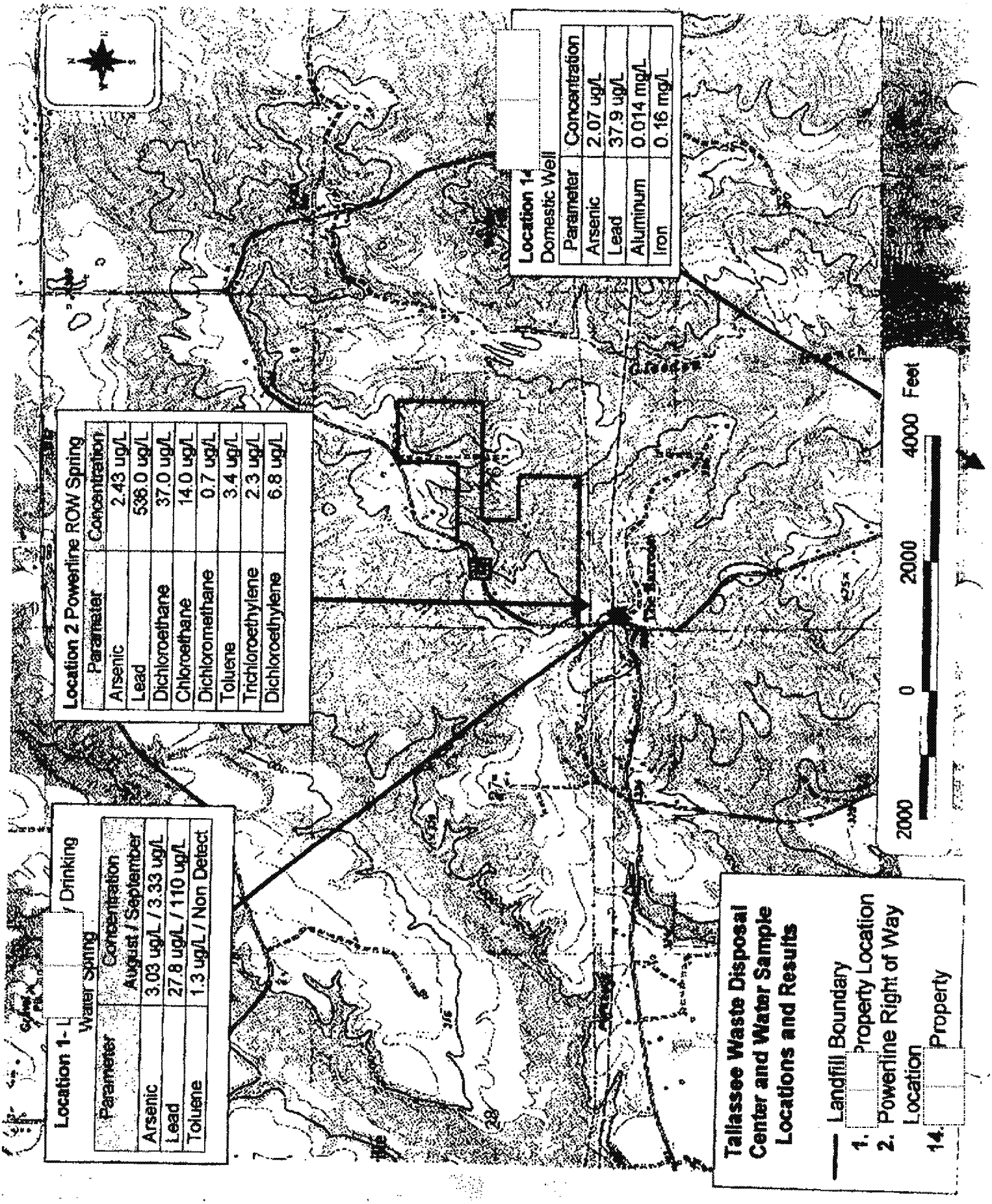
SECTION 3: CONCLUSIONS AND RECOMMENDATIONS

Based on this information and a concern for the public health, it is highly recommended that th Ex. 6 Personal Privacy (PP) family utilize an alternate source of drinking and domestic use water. It is understood that the local water authority has provided service to the property, but at this time has not been routed into the residence. It is further recommended that the Stewart family consider utilizing a water purification system, which removes elemental and particulate metal contamination from their well water supply. Such systems come in various use ranges, configurations, cost ranges and have been proven to be highly effective with this type of contamination.

This initial phase of assessment, indicates that there is the potential of environmental / chemical trespass along the landfills southern boundary. The parameters of primary concern are the halogenated and aromatic hydrocarbons listed in Table E. At this time, it appears that the properties of concern would be limited to the Ex. 6 Personal Privacy (PP) located to the south and south east of the landfill site.

Based on the data and information contained within this report, a more formal assessment and delineation of potential soil and groundwater contamination is recommended. Any additional assessment work should be initiated on the

Ex. 6 Personal Privacy (PP)


Location 1- Drinking Water Spring
Parameter | Concentration August / September
Arsenic | 3.03 ug/L / 3.33 ug/L
Lead | 27.8 ug/L / 110 ug/L
Toluene | 1.3 ug/L / Non Detect
Location 2 Powerline ROW Spring
Parameter | Concentration
Arsenic | 2.43 ug/L
Lead | 536.0 ug/L
Dichloroethane | 37.0 ug/L
Chloroethane | 14.0 ug/L
Dichloromethane | 0.7 ug/L
Toluene | 3.4 ug/L
Trichloroethylene | 2.3 ug/L
Dichloroethylene | 6.8 ug/L
Location 14 Domestic Well
Parameter | Concentration
Arsenic | 2.07 ug/L
Lead | 37.9 ug/L
Aluminum | 0.014 mg/L
Iron | 0.16 mg/L
2000 0 2000 4000 Feet
Tallassee Waste Disposal Center and Water Sample Locations and Results
Landfill Boundary
1. Property Location
2. Powerline Right of Way Location
14. Property

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Ex. 6 Personal Privacy (PP)

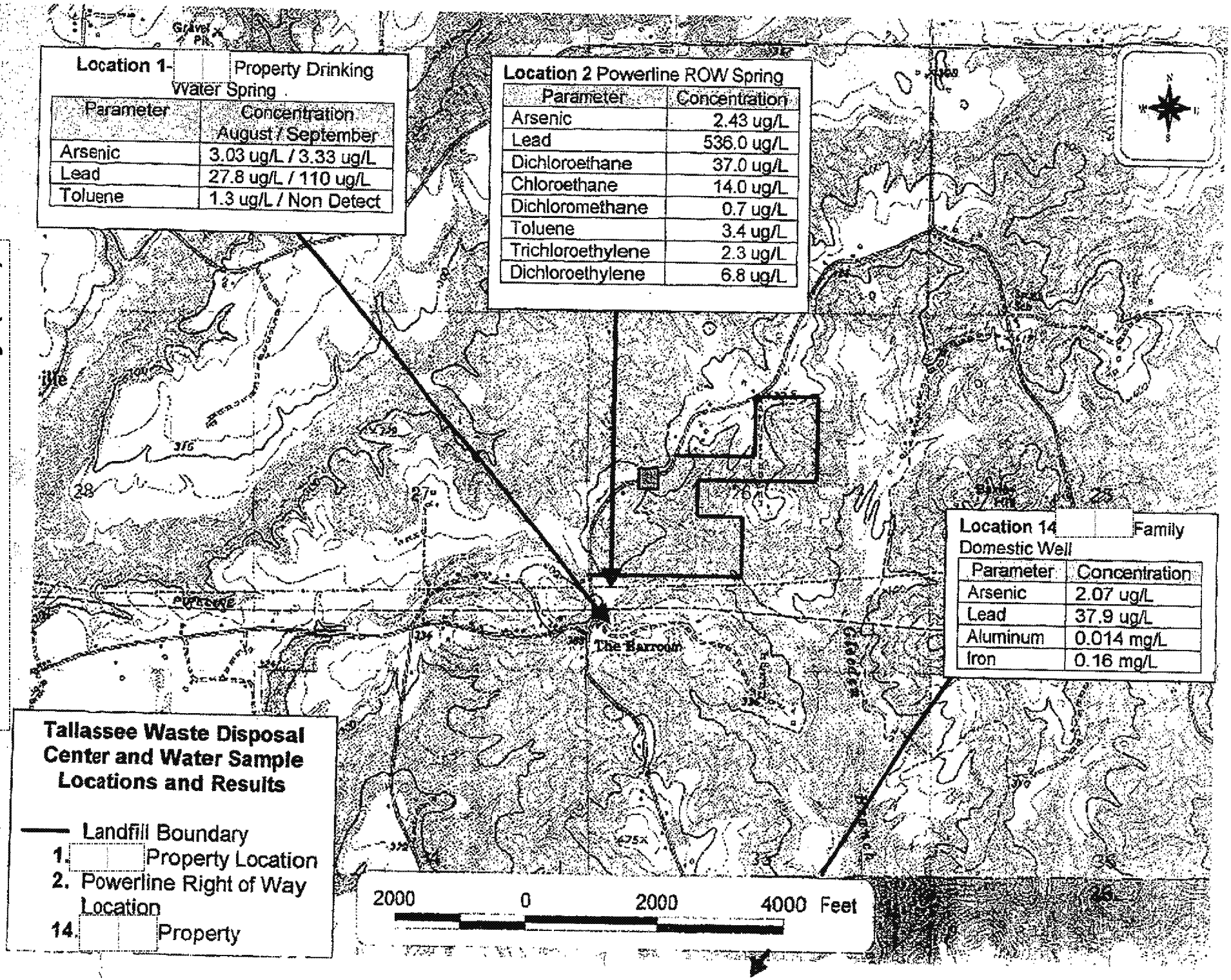

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EXHIBIT 9

Privileged & Confidential
Attorney Client Work Product

DECLARATION OF Ex. 6 Personal Privacy (PP)

Pursuant to 28 U.S.C. § 1748, I declare under penalty of perjury that the subsequent is true and correct:

1. My name is Ex. 6 Personal Privacy (PP) African-American resident of Virginia Beach, Virginia. I was born, raised, and lived in the Ashurst Bar/Smith Community in Tallassee, Alabama continuously until December 1981. I enlisted in the United States Navy where I retired after spending 20 years and 2 months. I had occasional visits home and spoke with my Ex. 6 Personal Privacy (PP) Ex. 6 Personal Privacy (PP) Due to educational and other opportunities for my children I have not moved back to Tallassee. I still have many life-long friends and family members who still live in the Ashurst Bar/Smith community.
2. I recall the clean simple life characteristics of my childhood where gardening and farming was very common. It was a community of hardworking people who were taught to live off the land, raise livestock, and grow crops like cotton, corn, tomatoes, and other vegetables. We knew where the plum trees/bushes, the blackberries, Muscadine and Scuppernong grapes grew wild. The families that had pears, apple, fig, pecan, and walnut trees. Pomegranate bushes and random growing Poke Salad plants. My family personally grew corn, sweet potatoes, tomatoes, watermelons, and beans. Being more aware of the importance of what we allow into our bodies in the foods we eat I know that it was a blessing to grow up in that simple wholesome environment.
3. Being in such a close proximity of the landfill my Mother and Sister organized and assisted in the efforts to stop the landfill's existence. Some of the residences looked at the situation as just a problem for my family as they did not experience the inconvenience and discomforts. I recall my Sister speaking of being followed and intimidated for her efforts. Since the landfill has come into our community, my family members and other members of the community fear that farming, gardening and raising livestock is no longer safe. As a result, many people have given up on these traditions and no longer have the option of growing and providing fresh vegetables to help feed themselves and their families.
4. My Mother and Sister sold their properties as not many people want to live with a landfill and all that goes with across the street from their homes. This was not a sign of approval but an option for personal survival. My sister build a home in another county however, my mother built another house within 2 miles of that residence. As the landfill has grown and the effects have followed to family owned land directly attached to the landfill again. Land which has been in our family for three generations. The landfill has resulted in the devaluing of the property that we own in the community as well as devaluing the property of all the community members. Additionally, the smells that come from the Landfill and its methane flare are horrific and overpowering. I cannot help but smell these odors when I go home to visit my family and friends.
5. Also during my visits to my home town, I cannot help but notice the frequent sighting of trucks coming and going from the landfill and the impact that these trucks have on the roads and quality of like in the community. As I have noticed that the roads are rough and unmaintained, and that the garbage trucks often drive down the roads very fast. I

EXHIBIT 10

DECLARATION OF Ex. 6 Personal Privacy (PP)

Pursuant to 28 U.S.C. § 1748, I declare under penalty of perjury that the subsequent is true and correct:

1. My name i Ex. 6 Personal Privacy (PP) African-American resident of Acworth, Georgia. I was born, raised, and lived in the Ashurst Bar/Smith community in Tallassee, Alabama until approximately 1988, when I moved to Tennessee for employment. While in Tallassee, my family and I lived at Ex. 6 Personal Privacy (PP) Ex. 6 Personal Privacy (PP) I have not moved back to Tallassee since that time because I have not come across employment opportunities there. But my friends and family members, such as my cousin Ex. 6 Personal Privacy (PP) still live in the Ashurst Bar/Smith community.
2. I remember from my childhood that gardening was very common in the Ashurst Bar/Smith community. We are a community of hardworking people who were taught and became accustomed to living off the land, raising livestock, and growing crops like cotton and corn. I distinctly remember the smell of the fresh earth when it was planting season and the delicious smell and taste of the fresh fruits and vegetables that we grew. My family did not have much, but we had our cotton, corn, cows, and pigs. The garden was located at ou Ex. 6 Personal Privacy (PP) property.
3. Since the Landfill has come into our community, my family members and other members of the community fear that gardening and raising livestock is no longer safe. As a result, many people have given up on these traditions.
4. The smells that come from the Landfill and its methane flare are horrific and overpowering. I smell these when I go home to visit my family and friends.
5. Whenever I go home, I also notice that the roads are rough and unmaintained, and the garbage trucks drive down these roads very fast. I worry for my family and community members that it is unsafe for them to be on these roads with the trucks going by so fast.
6. I also often notice water being discharged from the Landfill from a pipe that is between Ex. 6 Personal Privacy (PP) Photographs of this pipe are attached here in Attachment 1. This water is discharged into a waterway that flows down to the residential area of our community. Photographs of this waterway are attached in Attachment 1. The water flows to a catch basin and, eventually, into the woods. Photographs of this catch basin and adjoining woods are attached in Attachment 1. I am concerned that this discharge may be contaminated, and could be affecting the health of community members.
7. The Landfill attracts vermin such as buzzards that lessen the quality of life of the Ashurst Bar/Smith community. Photographs of buzzards flying above the Landfill are attached in Attachment 1.
8. The Ashurst Bar/Smith community is and always will be my home. I had plans to build my dream home there for my retirement so that I could enjoy the family land and spend time with my family and friends in the community. But I have no desire to retire to the Ashurst Bar/Smith community if the Landfill is in operation, fouling our air and water and changing our ways of life.

EXHIBIT 11

November 10, 2016

ADEM Public Hearing - 422

Good evening. My name is Ex. 6 Personal Privacy (PP) I am a resident of the Ashurst/Bar Smith Community. I live on Washington Blvd. about a mile from the landfill. My family has lived in this community for over 200 years, through multiple generations.

I'm here this evening to object to the renewal of a permit for the Stone's Throw Landfill and any further expansion of the landfill because of the impacts it has had on our community during this current operation and since it opened as a municipal landfill in 1978. Unfair citing of the landfill and permitting regulations by ADEM has caused the Ashurst Bar/Smith Community to bear a disproportionate burden of environmental and social impacts to our community, a low-income and predominately Black community. This pattern of placing solid waste landfills and hazardous waste facilities in poor and minority communities is common around the state and the nation. I know this to be true because I have met residents of other communities who face the same situation, including Lowndes County, Yerkwood, Birmingham, Anniston, Moody and Chastang Alabama.

The Stone's Throw Landfill continues to degrade our quality of life. Garbage trucks, transfer trucks and other landfill-related traffic continually flow up and down Washington Blvd. Traffic starts at 3-4 a.m. and goes until 4-5 p.m. Washington Blvd. has never been properly upgraded to handle this type traffic. For our safety, the residents who drive on Washington Blvd. are forced to move over or drive less than the 35 mph speed limit to avoid collisions with the landfill trucks. We recognize the moving trucks, however they seem to have no disregard for those of us who live in the community. My family and I have tried to walk for fitness purposes but do not feel safe because of the landfill traffic. Furthermore, driving on the road near the landfill entrance is hazardous because of the loose gravel and soil that spills out on it. Since the landfill reopened in 2003, I can only recall one time that the road near my house was re-surfaced. And that work was recently done in 2015 just to fix a few potholes and bad spots.

In addition to the traffic, our community is ridiculed with noise from the constant flow of trucks and the heavy machinery operating at the landfill. We are also concerned about possible health issues as a result of living near the landfill. Our air is foul, the sky is full of buzzards and our land is now valueless. Land that was once used for farmland and recreation to play community softball no longer exists. The site where the landfill sits was once fertile acreage full of natural springs and branches but now is nothing more than a mountain of trash.

As a resident and land-owner in the Ashurst Bar/Smith Community, I am opposed to renewing the Stone's Throw landfill permit. Title VI prohibits agencies receiving Federal funding from discriminating on the basis of race, ethnicity or national origin. Why would ADEM renew the landfill permit in our predominately Black community, while the residents are experiencing all of these negative impacts including concerns for our health, our well-being and for the future of generations to come?

Ex. 6 Personal Privacy (PP)

Tallassee, Alabama 36078

EXHIBIT 12

DECLARATION OF Ex. 6 Personal Privacy (PP)

1. My name is Ex. 6 Personal Privacy (PP) I am of legal age and competent to give this declaration. All of the information herein is based on my own personal knowledge unless otherwise indicated.

2. For the reasons related to the operation of the Stone's Throw Landfill (landfill) that I explain below, I have lived in Selma, Alabama, which is more than 80 miles from Tallassee, since 1978.

3. I am a Ex. 6 Personal Privacy (PP) Black woman, who was born and raised, along with my seven siblings, in the Ashurst Bar/Smith community. Six generations of my family have lived in this remarkable, close-knit community.

4. Ashurst Bar/Smith is an unincorporated, predominantly African American community that is located at the southernmost tip of Tallapoosa County, Alabama and adjacent to the northern Macon County border.

5. I remain deeply connected to the Ashurst Bar/Smith community, in spite of living in Selma, in part because my family's property at Ex. 6 Personal Privacy (PP) is located about 1.5 miles from the landfill (as of the landfill's last expansion). My mother, who was born in a nearby community and moved into this area as a child with her 13 siblings and parents, died on February 1, 1990 from cervical cancer. Today, my brother, Ex. 6 Personal Privacy (PP) and his family, continue to live on this property on Ex. 6 Personal Privacy (PP) which, following the landfill's expansions, is now extremely close to the landfill. I also have many friends and extended family who live in Ashurst Bar/Smith, and bear the negative effects of living close to the landfill, including Ex. 6 Personal Privacy (PP) an elder in my community, her son, Ex. 6 Personal Privacy (PP) s.

6. When I was growing up, we were surrounded by family on Washington Boulevard. For example, my great-aunt and her son lived on property on Washington Boulevard where my great-grandfather also had lived. Today, my cousin and my brother and his family are the only families that physically live on Washington Boulevard.

7. Our family property means everything to us. My great-grandparents were slaves who came to the community in the 1800s as documented by the 1880 U.S. Census. **Attached** is a copy of that census. The land in the Ashurst Bar/Smith community is one of the only tangible, valuable things that my great-grandparents, as former slaves, were able to pass on to their descendants. My parents lived through Jim Crow segregation in Alabama, the cradle of the confederacy. Their land is all that they had to pass onto me and my siblings in terms of wealth. To take this land away from their descendants, like me and my brother, who live on and maintain ownership of the land—by the landfill essentially making our family's land unbearable to live on— is to extinguish everything that we have to connect us to our heritage and history.

8. Despite being forced to live away from my family's property, my family, and my friends in the Ashurst Bar/Smith community, I consider myself a leader in the community I have continued to raise my voice in opposition to the landfill and its expansions in my capacity as a member of the Ashurst Bar/Smith Community Organization (ABSCO). ABSCO's mission initially was to prevent the re-opening of the landfill in the 1990's. For example, in the late 1990's, ABSCO was led by a steering committee and represented the community who lived near the landfill. Despite that some of the original members moved away or died, ABSCO's mission has since been to challenge any expansions of the landfill and protect against the harm caused by the landfill in the community.

The Landfill

9. I believe that the landfill first opened in the 1980's when I was a young adult. My mother was outraged about what the existence of the dump in our community meant then and would mean going forward for our community. It started out as a small brush dump and eventually was purchased and expanded upon by a waste management company sometime in the mid-to-late 1990's (maybe 1999). I recall that some members of the community still used well water. I am not sure when the dump closed, but my understanding is that it closed because it was not properly designed. I can only imagine what Ashurst Bar/Smith community members were exposed to in terms of health hazards during the initial operation of the dump. In or around the year 2000, the landfill came under new management and proposed to reopen without the community's knowledge or a proper assessment of the social, environmental, or economic impacts to the affected majority-Black community. To this day, that assessment has never happened as far as I am aware.

10. In 2003, the U.S. Army Corps of Engineers sent me a map that showed that the landfill planned to encroach on two acres of my family's land, the only land left directly across from the then-existing landfill, by redesigning Washington Boulevard to expand their operation. Based on the map that I saw, not only did the landfill plan to take over my two acres of land, but they also planned to move the road—which was the road of my childhood—to have access to additional land. They were apparently going to use eminent domain to take my land against my will. Since the death of my mother in 1990, I have refused to sell those acres despite repeated inquiries. I realized that if I let the landfill expand by allowing it to buy part of my family's land, my family and I won't ever be able to go back to where my family has lived since the 1800s.

11. Although the landfill's management never contacted me directly seeking to buy our land, I felt that these inquiries were made on behalf of the landfill. My feeling is not unreasonable based on other landowners being approached to sell their land. Other acreage on the same side of the original landfill site was expanded to the property of my first cousin's grandparent. That property was sold as a result of a legal matter, and the landfill came to own that land.

12. Since around 2003, when I first began complaining about the landfill, there have been multiple modifications to the landfill such that it now spans more than 175 acres in East Tallassee with a new disposal site of more than 124 acres. It is literally in the front yards and backyards of my family's property and that of their neighbors like the Smiths, Edwards, Brooks, and Haynes.

The Title VI Complaint Against the Alabama Department of Environmental Management

13. In 2003, I filed a Title VI of the Civil Rights Act complaint with the Environmental Protection Agency's (EPA) Office of Civil Rights (OCR), challenging the Alabama Department of Energy and Management's (ADEM's) permitting of the landfill. By 2003, I also was concerned about the potential for contamination as a result of water runoff from the landfill onto Washington Boulevard. I saw that the landfill had not been properly covered with grass and it was washing over two acres of our family's land. Notably, as of January 2016, there still was a muddy path from the landfill across the road from the now-expanded site.

14. More than 10 years later, the EPA OCR is still investigating my complaint. I am providing this declaration in support of my complaint and, given the passage of time, what I have come to understand to be an unacceptable reality: ADEM and Alabama counties, like Tallapoosa, receive federal money *without* considering the racial and socioeconomic impact of their permitting

and siting decisions on Black communities in places like the Ashurst Bar/Smith community in East Tallassee. Indeed, of the five landfills that I was aware of in Tallapoosa County, Alabama - based on the Lani Merrett report that I believed has been submitted to the EPA OCR in support of the 2003 complaint - four of them were located in African-American communities. As far as I am aware, neither ADEM nor the Tallapoosa County Commission has *ever* conducted an impact or demographic study in advance of the reopening of the landfill or its subsequent expansions in East Tallassee.

15. Since before 2003, I have remained concerned with the failure of state agents to provide early, open, and meaningful participation from the citizens in the affected Ashurst Bar/Smith community.

16. Since around 2003, state officials have permitted the landfill to continuously expand to the acreage that I mention above and receive more and more garbage in our backyards, such that now we bear the burden of living surrounded by other people's waste, received from all of counties in Alabama (and I believe that there are 67) and three counties in Georgia (Harris, Muscogee, and Troup counties).

17. Since at least 2003, I have taken community complaints about the landfill to every elected official that I thought would and should listen, including the Alabama Governor, state legislative members, congressional representatives, and county commissioners, but I was brushed off.

18. I also took community complaints about the landfill to ADEM (for example, by submitting written comments), but to date they have repeatedly responded to them by stating that our concerns are outside of the scope of ADEM's authority to address. I also have been particularly shocked and angered by the feeling that I am being admonished by ADEM officials for even raising these complaints, based on the tone of their responses to my complaints to this agency.

19. I have all but given up that anyone will listen to us, including ADEM and the federal government. Things get worse but no one does anything. The last two times that the landfill applied to ADEM for approval to expand again, including in March of 2015, I didn't see the point of saying anything: no one ever listens anyway. I feel like we are disrespected.

Impacts

20. The community complaints that I am aware of related to the landfill and its continued expansion involve: (1) contaminated water and damage to natural resources and habitats; (2) foul odors and air quality; (3) scavengers, bugs, and wild animals; (4) health issues; (5) displacement of people, diminished property values, and enjoyment of land; and (6) safety concerns (traffic and accidents).

21. Water and damage to natural resources and habitats. Many people in the Ashurst Bar/Smith community believe that the landfill has contaminated the wells, springs, streams, and other waterways in the community (like Gleeden Branch) such that many people I know have stopped drinking from those free resources.

22. Prior to when the landfill initially started as a dump, we lived off of private wells, some of which were shallow (which also was typical of the wells of my neighbors), and had no water quality issues or problems. However, at least by the time that the landfill reopened, most everyone, I believe, switched over to public water and had to start paying for it.

23. I recall that on or around August 2000, tests were done on some residential water (based on my review of the Whatley Drake LLC report that I believed has been submitted to the

EPA OCR in support of the 2003 complaint) and an investigation found that water from one of the underground springs that people were drinking from contained arsenic, toluene, and lead. That means for nearly 20 years, between the 1980's and early 2000's, we didn't know what we were drinking.

24. Currently, private wells are open for use, even though many people do not use them, and, as far as I know, no one from the county health department has conducted inspections on the wells.

25. I understand that animals have stopped drinking water from the wells, streams, springs, and other waterways in our community. I have heard many individuals say that they have stopped gardening because of the fear of what they will be eating that has been "nourished" by contaminated water from these sources.

26. It should be understood that free water and the ability to garden are valuable resources in the Ashurst Bar/Smith community in which the majority of the people live in poverty. Since people have stopped using their wells, the public water serviced by the Wall Street Water Authority is used by many people. In a community where many people are impoverished, it is a shame that they feel that they have to pay for water when they used to have access to free water through the wells. I know from the experience of my brother that it is an extreme expense for people who have livestock to water their livestock off of paid water when they used to have free water. As a result, I know that many of these already under-resourced families buy bottled water to provide themselves with some peace of mind about what they are putting into their bodies and that of their children.

27. Odors and air quality. Whenever I visit my family and friends in the Ashurst Bar/Smith community, I am immediately struck by the foul odors that come from the landfill. The odors are of the natural decomposing of waste (i.e., rotting). Others have complained of chemical odors. The air is worse on some days than others, but it always stinks.

28. I have a document dated June 4, 2003 (**attached**) showing that the operators wanted an exception to the requirement that you cover the garbage with fill dirt so that they would only be required to use a tarp for coverage. I imagine that their reasoning for this request was to have more area to fill with garbage—that is to say, dirt fill takes up more space that otherwise could be used to fill with garbage—regardless of the impact, particularly the conditions people in the community are exposed to when non dirt-filled sites are rained on. That request reflected the lack of care with which landfill operators attempted to treat our community.

29. Also, early ADEM reports, which I believe are part of the public record, indicated that there were elevated methane gas levels at the landfill. At some point, a system was installed that flares into the community's air, and can be seen lighting up the dark night's sky. The flare also poses a major concern because there is a natural gas line that separates an active site on the landfill and other landfill property (that was bought from the Laniers) which is a critical safety issue.

30. As a result of the odors, my family and other members of the community have stopped gathering for barbecues outside because we cannot tolerate the foul odors.

31. Because of the foul odors coming from the landfill, the local church cannot function without having installed an air filtration system, which its members paid for. Outside activities that foster fellowship (for example, Easter egg hunts, Bible study, etc.) are now nonexistent because of the foul odors coming from the landfill.

32. Scavengers, bugs, and wild animals. Flying crows, wild animals, biting bugs, and rodents have transformed the beauty of the rolling red-clay hills and springs that run through the

Ashurst-Bar/Smith community. I have seen the swarms of crows that fly over the landfill as they feed on the garbage. Members of the community have talked about the annoying bugs that swarm in the area near the landfill. I have spoken to people about the presence of rodents and wild dogs that have become more plentiful in the community. All of these animals and insects have the potential to transfer diseases.

33. I have two great-nieces and I fear for their safety because of what could be in the woods that they cannot see due to the lack of street lighting.

34. Health. I have heard conversations concerning families in which more than one person has died from cancer and individuals with conditions like headaches, respiratory problems, itchy skin, and depression. My own mother died of cervical cancer, as I mentioned above, and though I don't know if it was caused by pollution from the landfill, I believe that the landfill has put all of the Ashurst Bar/Smith residents at risk.

35. In my conversations, I have been told that people avoid traveling the road past the landfill because it is depressing. However, the children during the school term have no choice but to pass by the landfill in the morning and in the afternoon. One can only assume the psychological harm imprinted in their mind by living in proximity to the landfill.

36. Displacement of people, and diminished property values and enjoyment of land. Since the landfill came into the Ashurst Bar/Smith community, I have learned that families (like the Ex. 6 Personal Privacy (PP) have sold their property to the landfill, and relocated farther away from the landfill or entirely out of the community. None of these families could stand to live near the landfill any longer.

37. Typically, no one else but the landfill wants to purchase property near the landfill. I believe that all of our land has lost value because of its proximity to the landfill. It is an eyesore. It disturbs the natural beauty of the land and quiet of the area.

38. I had once looked forward to retiring in the Ashurst Bar/Smith community to be able to spend time with our family and friends there. Ultimately, I did not retire to this community, which brings great pain to me, because of the burdens of living near the landfill and the fear of its health impacts. Indeed, when I referenced Ex. 6 Personal Privacy (PP) I also did so because we are all children of people who lived on the land, but most of us had to leave the land because of employment and education issues in the late 1960s and 1970s. And now would be the season of life for us to go back and enjoy our property. But how do you go back and be faced with a landfill in your front yard or your backyard? The only buyer for our property would be the landfill if we had to sell it. We can still live there now, as my brother, Ex. 6 Personal Privacy (PP) and Ex. 6 Personal Privacy (PP) do, but it's a hardship. That's why people are leaving – they get the offer and they leave. So now there is no value to our property other than the sentimental value of having it and trying to hold on to it.

39. Safety. Since the landfill came into the Ashurst Bar/Smith community, I know that parents, including my brother and sister in-law, worry that their grandchildren (such as my two great-nieces and great-nephew) will be injured or killed as they play or catch their school bus because of the garbage trucks, tankers, and other heavy equipment serving the landfill. I have heard my brother and sister-in law and other parents explain how they worry about sending their children out to play in their yards and or to get on and off of the school bus because of trucks and tankers that speed at 50-plus miles per hour along their curvy, narrow country roads, where there are many blind spots, en route to and from the landfill.

40. The trucks and tankers damage the narrow country roads and bridges, which were not built for vehicles of this weight. Except for some of the pavement, the structure of the roads has more or less been the same since I was born.

41. On February 5, 2005, a garbage truck caught on fire on Washington Boulevard in the front of my brother's house. But there was no emergency response in proximity for such an event.

42. Other trucks are uncovered so debris from them flies onto the roads and onto our land.

43. What also amazed me was that I initially just thought that the landfill would be serviced by regular household garbage pickup trucks. But when I started seeing transfer trucks full of garbage coming into our community, I could not believe that this government would do this to any American. I believe in the United States government's system, but to be defiled, humiliated, and disrespected like we don't matter is horrible.

Conclusion

44. Given all of these impacts on the Ashurst Bar/Smith community, I am not aware that anyone from any state, county, or local office has approached my brother or anyone else in the community about their deteriorating quality of life issues. The contaminated air, soil, and water, and the presence of wildlife, diminishes the quality of life that the 14th Amendment to the U.S. Constitution affords to all of us. As citizens, we are entitled to have the same property and enjoyment of life that everybody else does. But that has been taken away from our community because of the landfill.

45. I believe that these impacts are happening and are allowed to happen because we are Black people. The landfill is running Black people off of their property and leading to Black land loss. To me, this is all blatant racism.

* * *

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information and belief.

Executed in Selma (city), Dallas (county), Alabama on July 29, 2016.

Ex. 6 Personal Privacy (PP)

EXHIBIT 13

Comments

In opposition to Renewal Permit No.62-11

My name is Ex. 6 Personal Privacy (PP), a property owner in the Ashurst Bar Smith Community (ABSCO). In accordance to the 1870 census my paternal great grandparents were born in the 1850's making them slaves, and they or their descendants have been in this community about 146 years. This is our inheritance, while this is not a technical issue it is a human rights issue.

The approval of the permit and any renewal applications by the Tallapoosa County Commission for the operation of the Stone's Throw Landfill in the Ashurst Bar Smith Community has impacted our quality of life. The Fourteenth Amendment was adopted in 1868 to offer equal protection and the rights of freed slaves. This amendment also limits the actions of state and local officials which inhibit due process, and prevents citizens from being illegally deprived of life, liberty or property. The Tallapoosa County Commission has never engaged our community in any process to discuss any business concerning this landfill. This is not a technical issue but the issue of inclusiveness to forward an approval from the host community should have included input from the impacted citizens. Therefore, in my opinion ADEM has failed to enforce one of the requirements of the host community (not just the county commission), which is at a minimum to ensure that the impacted community is aware if an analysis has been conducted. The destruction of our environment and property in my opinion is a violation of our Fourteenth Amendment right. Our air, soil, water, personal safety, and the value of our land have been negatively impacted, therefore we are being deprived of a good quality of life.

In my opinion I was never provided a response in my previous comments to ADEM that neither they or the Tallapoosa County Commission have followed the recommendations in the "The U.S. Environmental Protection Agency Office of Civil Rights Investigative Report For Title VI Administrative Complaint File No. 28 R-99-R4 (Yerkwood Landfill Complaint) June 2003", as to why an impact analysis report was not a part of the modification application in 2003.This report which I cited in the public hearing held in 2003 recommended three actions which included requiring consideration of siting factors by the local authority, and if not done or sufficiently done by the local authority then ADEM must do the analysis before permitting an application for a land fill.

Has the Local authority provided ADEM along with their approval of this renewal application a detailed analysis report of the six minimum siting factors as recorded in the Alabama Solid Wastes Disposal Act and ADEM's implementing regulations? This is not an EPA recommendation, but legislation from the State of Alabama. Does ADEM have on record their own detailed analysis if the local authority has not provided a report as a part of this application process or any previous applications? The EPA analysis of the Yerkwood report found nothing in ADEM's regulations that would "preclude this recipient of federal funds from considering the impacts of traffic and socio-economic factors, like noise from a landfill". Is it ADEM's continuing position that it does not have to comply with this recommendation? It is not technical, but it is a recommendation of the EPA to prevent ADEM from," a significant potential for failure to adequately consider safety or socio-economic impacts at any point in the siting and permitting process for municipal solid waste landfills in Alabama."

The ASBC is a 90 % African-American community and Title VI prohibits ADEM from allowing permitting decisions that produce a disparate impact on our community. In my opinion it would suggest there is a pattern of practice in siting landfills in majority African-American communities in Alabama, especially in Tallapoosa County. ADEM's admission in its February 2, 2000 response to the Yerkwood complaint stated," most of the reasonably available land for landfills is in rural areas which may have a large minority population". This response by ADEM to the allegation of pattern and practice sitings in minority communities does not seem valid, since Alabama's land mass is considerably rural, and the population is majority white. How could there be more minority land or black land ownership? Why is black land in the rural more reasonable and not appraised similar? This response is discriminatory because the then director, Warr of ADEM felt minority land owners were the targeted suppliers because their property was more reasonable.

In this same response, the then director also said that a Subtitle D regulated landfill was designed to prevent rodents, air pollution, and methane gas, etc. These environmental impacts have occurred at Stonethrow's, and yet no one in the community has ever been advised of any violation or compensated for direct property impacts. In 2015 there was sediment that went over on to adjacent properties that generated an enforcement citation by ADEM, but no one was notified or compensated for this damage to their properties. These are technical concerns.

In a fact sheet disseminated by ADEM at the November 10, 2016 public hearing for the Stone's Throw Landfill, the service area is listed as the State of Alabama, why not specify ALL 67 counties (specifically identifies the disproportionate burden) and three Georgia Counties. It is stated that Leachate is collected and treated by the City of Tallassee. However, in a letter dated June 4, 2003 from Environmental Consulting and Engineering, Inc. to Mr. Jonathan Cosby, "leachate recirculation.... This will allow a slow and level introduction of the liquid into the waste." "The facility is also requesting that the leachate be sprayed on the working face by using a spray bar attached to the pump discharge line". In this letter, also the use of a tarp was requested for daily cover instead of soil, (which I hope is clean and not contaminated with toxins). This is a concern for drainage which might wash off and/or driven on to our road by trucks depositing on the face of the landfill. I find this a public health issue and in my opinion these are legitimate environmental concerns which should not be ignored. These are technical issues. As reported by your staff at the hearing, a preliminary decision by ADEM to approve the permit is complete, because of technical compliance.

It is my opinion if the Stone Throw Landfill was sited and did not comply with the EPA's recommendations to do the detail analysis, then the permit should be denied. This landfill's overwhelming expansions to service 67 counties in Alabama, and three in Georgia has resulted in a devastating effect on our community. There has been non-compliance of the posted business hours, road maintenance, roadside litter accumulation, offensive orders, and buzzards. Over the years the facility has had many enforcement violations, such as methane levels, sediment deposits, erosion issues, etc. There is a tremendous amount of concern about our children's ability to load and safely unload their school buses, therefore if ADEM has not discussed this issue with the appropriate Tallapoosa county officials may I suggest that you consider doing so. This is an emergency which needs to be handle now in lieu of the fact that a Black 7-year-old school child in Jefferson was killed by a truck while crossing the road. Traffic safety is a responsibility of the permitting agency, while not a technical issue, traffic is a factor to be considered.

There is a decline in property values, and our quality of life continues to be impacted such that many are reluctantly moving away. Under Title VI we are being discriminated against, because this 90 % African-American community is disproportionately baring the burden of being the site for solid waste for this massive service area. Our community and rights are being violated and adversely impacted by this ever-expanding nuisance in our community, therefore I ask this permit be denied.

Ex. 6 Personal Privacy (PP)

Ashurst Bar Smith Community

EXHIBIT 14

DECLARATION OF Ex. 6 Personal Privacy (PP)

1. My name is Ex. 6 Personal Privacy (PP) I am of legal age and competent to give this declaration. All of the information herein is based on my own personal knowledge unless otherwise indicated.

Background Information

2. I am a Ex. 6 Personal Privacy (PP) Black resident of the Ashurst Bar/Smith community in Tallassee, Alabama. I was born in this community and have lived here most of my life.
3. I have only lived in one other place outside of Ashurst Bar/Smith. When I was in the seventh grade, in or around 1985, my family and I moved to Dekalb, Georgia. I recall that the name of the street on which we lived was Ex. 6 Personal Privacy (PP) but I do not recall our address. I recall that we returned home to Ashurst Bar/Smith before the school year was over.
4. Currently, I live at Ex. 6 Personal Privacy (PP) Tallassee, Alabama 36078. I moved into this house in or around 1995. Previously, I lived at my mother's place, described below at ¶ 8.
5. My house is within one (1) mile driving distance of the Stone's Throw Landfill (Landfill).
6. My daughter, Ex. 6 Personal Privacy (PP) , lives with me at this address. No one else lives with us at this address.
7. My eldest sister, Ex. 6 Personal Privacy (PP) Road, Tallassee, Alabama 36078. Ex. 6 Personal Privacy (PP) household consists of: her

8.

Ex. 6 Personal Privacy (PP)

9.

10

Health Issues

11. My daughter has breathing issues and eczema. The eczema flares up when she has been outside. Sometimes if she plays outside during the day, she'll wake up with breathing issues during the night.
12. We took my daughter to an ENT specialist to see if she needed to have her tonsils removed. He found that she has nasal swelling and she needs to use nasal spray. She also uses an inhaler when her breathing problems flare up.
13. My Ex. 6 Personal Privacy (PP) has asthma. She didn't have asthma when she was a little girl, before the Landfill was here. She developed asthma in her 30s.
14. Ex. 6 Personal Privacy (PP) children have asthma. This week, she had to take her daughter to Montgomery to see the asthma doctor.
15. My mother also has nasal and sinus issues.

Odors, Insects, and Interference with Enjoyment of Our Property

16. This land has been in my family for generations, at least from the time of my grandfather. Our property used to have cotton fields.
17. The Landfill has infringed on my ability to enjoy my property, particularly because of the smell it produces and because of the effect it has had on the local insect population.
18. When I was growing up, before the Landfill opened, my friends and I would spend a lot of time outside. Playing outdoors was a very important part of my friends' and my own childhood. Different farmers would rent part of our land when I was a kid and plant soybeans. I remember playing in these fields as a child.
19. It was not uncommon for us to pick apples, berries, pears, and plums from the surrounding area to eat while we spent time playing outside. As children, we usually did not return home until our mothers called us in at night.
20. Now that the Landfill is in our community, our children do not play outside as much as my generation did when we were children. If something drops on the ground, I don't feel that it's safe for the children to eat.
21. Nonetheless, in the present day my sisters and I will take a two- or three-mile walk on a pleasant day.
22. Both the smell of the Landfill and its effect on the local insect population has made it difficult for me and my family to engage in these forms of enjoyment of our property and neighborhood.
23. The Landfill smells really bad. Some days it smells like rotten eggs, other days it smells like spoiled milk. A few years back, National Geographic produced a report on Ashurst Bar/Smith, and one of the people affiliated with their team described the Landfill's smell as metallic. I heard that person say that it felt as if the smell lingered on your tongue. I think this is an accurate description of the smell.
24. I deal with the smell every day, particularly in the mornings, as I am driving by the Landfill to take my daughter and my niece, to school.
25. The smell is a lot stronger over the summer, particularly on cloudy days.
26. In addition to the smell, I believe the Landfill has created an insect problem for our community.
27. When my sisters and I take our walks on our properties, we often have to bring something with which to fan ourselves—not because of the heat, but because we need to fan away the gnats. We did not have such a gnat problem when I was growing up.
28. In one of our recent walks, I had to help my sister remove a gnat that had flown into her eye. In other walks, gnats have flown into our mouths and nostrils.
29. Our community has never before faced an insect problem like this one. The gnats have become more numerous and they have also become larger.
30. All of this means that my child and other younger family members are not able to enjoy the outdoors the same way that I did when I was growing up because of the operation of the Landfill. Walking around in our property is harder now because of the smell coming from the Landfill and because of the increased insect population.
31. Other outdoor activities are also more difficult now. For example, I can't have a barbecue or sit on my porch because of the smell and the insects. And my mother, who used to keep a garden, has stopped gardening because the activity has become unpleasant. In addition,

the presence of the trucks, detailed further below, has made it harder for our children to play on our front lawns. The Landfill has therefore infringed on our ability to enjoy our property.

32. We used to drink water from our well. At some point around the time that the Landfill came into the area, we saw bubbles on the water. My mother got the county to close off the well. She covered it with dirt.

Safety Risks Posed by the Truck Traffic to and from the Landfill

33. The trucks that take garbage to and from the Landfill pose serious safety risks to me and my community
34. Trucks frequently pass in front of my house on their way to the Landfill. I know they are headed to the Landfill because they often carry debris without any cover, and objects—like mattresses or doors—routinely fall out of the back onto the road.
35. When the trucks are marked "City of Tallassee," I call the City to demand that they collect debris they have dropped on the street. The process usually takes a few days.
36. Two specific instances of dealing with this debris come to mind. In one instance, a truck came through and a flurry of papers flew out the back of the truck. The papers were receipts from people who had bought furniture from a furniture store. As the wind blew, the papers covered my yard. I had to spend several hours collecting the pieces of paper. On another instance, the truck dropped some shrubbery—bushes, branches, and sticks—on the road. I recall that the City of Tallassee refused to send someone to pick up the debris.
37. In addition to the dangers posed by flying debris, these trucks are dangerous given the state of the infrastructure in Ashurst Bar/Smith.
38. The trucks going back and forth to the Landfill include eighteen-wheelers. The roads in Ashurst Bar/Smith are very narrow, and they are definitely not made for eighteen-wheelers.
39. The volume of trucks has degraded the roads, producing large potholes.
40. I have to drive past the Landfill to take my child and nieces to school. If it rained the night before, the road in front of the Landfill will be covered in mud and pavement signs and potholes are difficult to see.
41. As a result, it feels dangerous to drive around my community.
42. In addition to the risks posed by the effects on the trucks on the local infrastructure, the behavior of truck drivers also poses grave risks for people driving around Ashurst Bar/Smith.
43. I have to deal with trucks on a daily basis, particularly when I take my daughter, Ex. 6 Personal Privacy (PP) and my niece Ex. 6 Personal Privacy (PP), to school in the mornings. I always have to be on the lookout for these trucks, as they drive very fast on a road that has three or four very sharp curves.
44. When I see the trucks, it is often better for me to just pull over entirely. I learned this the hard way, as the behavior of the trucks has caused damage to my car in the past, and resulted in economic damage to myself.
45. In or around May 2016, I was run off the road by a truck and the front right wheel of my car went into two potholes as a result. The truck was headed down a hill, and there is a little curve as part of the hill. It creates a sort of blind spot. The truck was headed toward me on the other lane. The trucks often drive over the line dividing the road, as was the case in this instance. I was forced to go off the road in order to avoid a head-on collision with the truck. I was shaken, but managed to get myself back home. The next morning, I realized

that the front-right tire had gone flat. I took the car to the mechanic, and they told me the rim of the wheel was dented in two places. I was faced with a bill of $311, which I paid.

46. Around a month later, I began having car problems again. I took it to the mechanic, who said there was something wrong with my rear-right tire. I cannot recall exactly what the problem was. However, I do recall that I asked him if he thought the problems were related to the accident that took place in or around May 2016, and he said he thought this was the case. I had to pay around $400 to fix my car the second time around.
47. Finally, Around September 2016, I noticed that my breaks were not working properly. When I once again took the car to the mechanic, he told me that the right side of my break system was faulty. I had to pay around $500 to have my car repaired this third time.
48. The trucks do not even respect the school bus. I know this because I frequently drive behind the school bus in the mornings as I drive my daughter and my niece to school. I also know this because of an incident my daughter went through while riding the bus back home from school one afternoon.
49. On or around March 2018, my daughter was riding the school bus home from school. She told me that an eighteen-wheeler garbage truck pulled up behind the bus. She knew this was a garbage truck because the incident occurred on Washington Boulevard, and all truck traffic on Washington Boulevard in this area is either coming from or going to the Landfill. My daughter told me that the truck then proceeded to pass the school bus by moving on to the traffic lane going in the opposite direction. Because the road is so narrow, my daughter says that the truck hit the school bus's rearview mirror and ripped it off. My daughter says that the bus driver, Ex. 6 Personal Privacy (PP) stopped the bus and called her boss to figure out what to do Ex. 6 Personal Privacy (PP) was instructed to continue driving without a rearview mirror.
50. The Landfill has increased the presence of trucks in our community. In turn, these trucks strain our infrastructure, which was not designed to handle the large trucks that routinely travel through our roads. Additionally, the truck drivers' manner of driving poses important economic costs and safety risks to our community.

* * *

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information and belief.

Executed in Tallassee (city), Tallapoosa (county), Alabama on August 1, 2018.

Ex. 6 Personal Privacy (PP)

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DECLARATION OF Ex. 6 Personal Privacy (PP)

Pursuant to 28 U.S.C. § 1748, I declare under penalty of perjury that the subsequent is true and correct:

1. My name is Ex. 6 Personal Privacy (PP) old African-American resident of Virginia Beach, Virginia. I was born, raised, and lived in the Ashurst Bar/Smith Community in Tallassee, Alabama continuously until December 1981. I enlisted in the United States Navy where I retired after spending 20 years and 2 months. I had occasional visits home and spoke with my Ex. 6 Personal Privacy (PP) Ex. 6 Personal Privacy (PP) Due to educational and other opportunities for my children I have not moved back to Tallassee. I still have many life-long friends and family members who still live in the Ashurst Bar/Smith community.
2. I recall the clean simple life characteristics of my childhood where gardening and farming was very common. It was a community of hardworking people who were taught to live off the land, raise livestock, and grow crops like cotton, corn, tomatoes, and other vegetables. We knew where the plum trees/bushes, the blackberries, Muscadine and Scuppernong grapes grew wild. The families that had pears, apple, fig, pecan, and walnut trees. Pomegranate bushes and random growing Poke Salad plants. My family personally grew corn, sweet potatoes, tomatoes, watermelons, and beans. Being more aware of the importance of what we allow into our bodies in the foods we eat I know that it was a blessing to grow up in that simple wholesome environment.
3. Being in such a close proximity of the landfill my Mother and Sister organized and assisted in the efforts to stop the landfill's existence. Some of the residences looked at the situation as just a problem for my family as they did not experience the inconvenience and discomforts. I recall my Sister speaking of being followed and intimidated for her efforts. Since the landfill has come into our community, my family members and other members of the community fear that farming, gardening and raising livestock is no longer safe. As a result, many people have given up on these traditions and no longer have the option of growing and providing fresh vegetables to help feed themselves and their families.
4. My Mother and Sister sold their properties as not many people want to live with a landfill and all that goes with across the street from their homes. This was not a sign of approval but an option for personal survival. My sister build a home in another county however, my mother built another house within 2 miles of that residence. As the landfill has grown and the effects have followed to family owned land directly attached to the landfill again. Land which has been in our family for three generations. The landfill has resulted in the devaluing of the property that we own in the community as well as devaluing the property of all the community members. Additionally, the smells that come from the Landfill and its methane flare are horrific and overpowering. I cannot help but smell these odors when I go home to visit my family and friends.
5. Also during my visits to my home town, I cannot help but notice the frequent sighting of trucks coming and going from the landfill and the impact that these trucks have on the roads and quality of like in the community. As I have noticed that the roads are rough and unmaintained, and that the garbage trucks often drive down the roads very fast. I

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Attorney Client Work Product

worry for my family and community members that it is unsafe for them to be on these twisting narrow two lane roads with the big garbage disposal trucks going so fast.

6. My Ex. 6 Personal Privacy (PP) has personally visited home and noticed water being discharged and/or draining from the landfill from a pipe that is between Ex. 6 Personal Privacy (PP) Ex. 6 Personal Privacy (PP). This water is discharged into a waterway that flows down to and through the residential areas of our community. Any wild or domesticated animal will drink the waters that may be contaminated. This has to be adversely affecting the health of community members. Photos of these discharges have been provided.
7. The Ashurst Bar/Smith community is and always will be my home. The option to live or build my dream home there for my retirement is not there. I enjoy visiting my family and friends in the community and I am concerned for their health and safety. For now I have no desire to return to the Ashurst Bar/Smith community due to health and safety concerns if the landfill continues its operations, which are fouling our air and water and degrading the quality of life in this community.

Executed on 12th day of May 2016.

Ex. 6 Personal Privacy (PP)

DECLARATION OF Ex. 6 Personal Privacy (PP)

Pursuant to 28 U.S.C. § 1748, I declare under penalty of perjury that the subsequent is true and correct:

1. My name is Ex. 6 Personal Privacy (PP) African-American resident of Acworth, Georgia. I was born, raised, and lived in the Ashurst Bar/Smith community in Tallassee, Alabama until approximately 1988, when I moved to Tennessee for employment. While in Tallassee, my family and I lived a Ex. 6 Personal Privacy (PP) Ex. 6 Personal Privacy (PP) I have not moved back to Tallassee since that time because I have not come across employment opportunities there. But my friends and family members, such as my cousins Ex. 6 Personal Privacy (PP), still live in the Ashurst Bar/Smith community.
2. I remember from my childhood that gardening was very common in the Ashurst Bar/Smith community. We are a community of hardworking people who were taught and became accustomed to living off the land, raising livestock, and growing crops like cotton and corn. I distinctly remember the smell of the fresh earth when it was planting season and the delicious smell and taste of the fresh fruits and vegetables that we grew. My family did not have much, but we had our cotton, corn, cows, and pigs. The garden was located at our Ex. 6 Personal Privacy (PP) property.
3. Since the Landfill has come into our community, my family members and other members of the community fear that gardening and raising livestock is no longer safe. As a result, many people have given up on these traditions.
4. The smells that come from the Landfill and its methane flare are horrific and overpowering. I smell these when I go home to visit my family and friends.
5. Whenever I go home, I also notice that the roads are rough and unmaintained, and the garbage trucks drive down these roads very fast. I worry for my family and community members that it is unsafe for them to be on these roads with the trucks going by so fast.
6. I also often notice water being discharged from the Landfill from a pipe that is between Ex. 6 Personal Privacy (PP). Photographs of this pipe are attached here in Attachment 1. This water is discharged into a waterway that flows down to the residential area of our community. Photographs of this waterway are attached in Attachment 1. The water flows to a catch basin and, eventually, into the woods. Photographs of this catch basin and adjoining woods are attached in Attachment 1. I am concerned that this discharge may be contaminated, and could be affecting the health of community members.
7. The Landfill attracts vermin such as buzzards that lessen the quality of life of the Ashurst Bar/Smith community. Photographs of buzzards flying above the Landfill are attached in Attachment 1.
8. The Ashurst Bar/Smith community is and always will be my home. I had plans to build my dream home there for my retirement so that I could enjoy the family land and spend time with my family and friends in the community. But I have no desire to retire to the Ashurst Bar/Smith community if the Landfill is in operation, fouling our air and water and changing our ways of life.

Privileged & Confidential
Attorney Client Work Product

Executed on 17 day of August 2016.

Ex. 6 Personal Privacy (PP)

EXHIBIT 15

DECLARATION OF Ex. 6 Personal Privacy (PP)

Pursuant to 28 U.S.C. § 1748, I declare under penalty of perjury that the subsequent is true and correct:

1. My name is Ex. 6 Personal Privacy (PP) old Black resident of the Ashurst Bar/Smith community in Tallassee, Alabama. I was born in 1952 and thereafter raised in this community. I was employed by the U.S.D.A. Forest Service from 1975 – 2000 and retired from civil Service in 2010. Currently, I work as an Instructor of Forestry at the Tuskegee University Department of Agricultural and Environmental Sciences. I also am a pastor.
2. The Ashurst Bar/Smith is an unincorporated community that is predominantly African American and is located at the southernmost tip of Tallapoosa County, Alabama and adjacent to the northern Macon County border.
3. I live at Ex. 6 Personal Privacy (PP) about half a mile from the Stone's Throw Landfill. I built the house that I live in in 2004 on the same land where I was raised. I have lived on this land all of my life except for the periods between 1973 and 1979 (6 years), and 1981 and 2000 (19 years) when I lived away for education and civil service employment. Even when I lived away during these periods, the property on Gleeden Drive remained in my family and I considered it my home.
4. I returned to the Ashurst Bar/Smith community in 2000 to help my parents, Ex. 6 Personal Privacy (PP) Ex. 6 Personal Privacy (PP) and joined them in their more than 10-year fight to defend my family's property and quality of life and that of other community members from continuing to be encroached on, devalued, and diminished by the Landfill. Indeed, my parents were among the earliest opponents to the Landfill in our community.
5. Our community has been actively fighting the intrusion of the Landfill since at least the mid-1980s.
6. Ex. 6 Personal Privacy (PP)
7. All of this land that my family lives on in the Ashurst Bar/Smith area has been in our family for generations. My great-grandfather first came to Tallassee from South Carolina in 1813 and thereafter acquired—incredible then as it is now—about 600 acres of land through federal land grants for farmers. This land has passed down in our family ever since, and my siblings and I currently own about 145 acres (documentation attached).
8. The close connection that my family and ancestors had to this land has been negatively impacted by the operation and expansion of the Landfill.
9. I remember that the Landfill first opened around 1980 when I was a young adult. It started out as a small brush dump and eventually was purchased and expanded upon by a waste management company sometime in the mid-to-late 1990s. I recall that it closed in the late 1990s to the early 2000s because it was not properly designed. I can only imagine what we, as Ashurst Bar/Smith community members, were exposed to in terms of health hazards during the initial operation of the Landfill. On or around 2000, the Landfill came under new management and proposed to reopen without the community's knowledge or a proper assessment of the social, environmental, or economic impacts to the affected majority-Black community. Since then, state officials have permitted the Landfill to expand and receive more and more garbage in our backyards, such that now we bear the burden of

living surrounded by garbage—asbestos to septic sewage—from every one of the 67 counties in Alabama and three counties in Georgia.

10. Smells from the Landfill are putrid. Because of the location of my house in relation to the Landfill (i.e., a valley separates my property from the Landfill), foul odors always reach my house whenever the Landfill's piles go above the tree line. These odors emanate from the Landfill daily because the Landfill does not have a practice of covering up its piles of trash. Only when the Landfill caught wind in 2015 that the community was pursuing legal action did it seem to sporadically cover up the piles of trash.
11. In addition, there is an enormous methane flare on the southern side of the Landfill that flames pretty much all the time.
12. Because of the foul odors, I often refrain from sitting with my family members in the rocking chairs on the front porch of my house or hosting outdoor barbeques with my family.
13. We used to report odor complaints to the Alabama Department of Environmental Management (ADEM), but gave up once we realized that filing complaints with ADEM was useless because nothing would happen. Again, only in 2015, when the Landfill caught wind that we were involved in legal action, did the Landfill begin to cover up its piles of trash, which occasionally mitigates the foul smells. I addition ADEM has permitted the Stones Throw operation to use a tarp to cover the garbage instead of the normal 6" of compacted soil over two feet of compacted garbage. I have photographs that show that the tarp is full of holes, covered with vultures and to small to cover all of the garbage.
14. In my opinion, most of the time the Landfill deliberately fails to cover up its trash so that the bad smells lessen the quality of life in the surrounding community, running Black residents out of the community, like it successfully did with the Ex. 6 Personal Privacy (PP) so that the Landfill can just buy up more property and expand.
15. Another byproduct of the uncovered trash is that vultures hover over the Landfill and perch on our roofs and feral dogs roam throughout the area. Indeed, the Landfill has brought a tremendous increase in vultures, as well as crows and feral dogs. This increase in vermin, some of which might be carrying diseases, has been going on for years. I have seen vultures roost on top of people's houses by the hundreds.
16. Our community is deeply concerned that the Landfill may be contaminating our environment and impacting our health. But no government officials have tested the air, surface water, groundwater, or soil for contamination, or at the least they have not notified me or any other community members with which I am aware of any findings.
17. Prior to the Landfill operating in our community, we lived off of private wells and had no water quality issues or problems. Private well water was fine water. However, when the Landfill was first acquired, everyone was switched over the public county/city water, which they have to pay for. I recall that on or around August 2000, tests were done of our water and an investigation found that water from one of the underground springs that people were drinking contained arsenic, toluene, and lead. Currently, the private wells are still open, but no one from the county health department has conducted inspections on the wells.
18. I have spoken with a landowner near the Landfill, who is about 85 years old, who has a herd of cattle that will not drink out of the stream, so the landowner uses city water to water/nourish them. This landowner's practice seems reasonable, particularly given that in 2003 or 2004, the manager of the Landfill (then named the Sunflower Landfill) advised

me not to eat the food growing in the area or use the water to water plants due to contamination.

19. Gleeden Road, where I live, is a short spur off of Highway 49, one of the main roads used to transport garbage to the Landfill. The roads leading to the Landfill are very curvy, poorly maintained, and not suitable for the constant flow of semi-trucks going to and from the Landfill. There are three substandard (for high volume tractor trailer traffic) bridges from I-85 along State Road 49 around the Landfill that are not wide enough for these garbage trucks and other vehicles to pass safely at the same time. In addition, traffic often starts as early as 4 a.m. in the morning, even though the Landfill is supposed to be open only at 6 a.m, and noise from the traffic can last until 7 or 8 p.m. When the trucks are loading the waste into the Landfill, I can constantly hear the beeping of the trucks backing up and other noises from the Landfill's operation from my home. All this noise is distracting and a nuisance since our community is rural and we relish the peace and quiet. Only when the Landfill caught wind in 2015 that we were pursuing legal action, did it cut back on the hours when the trucks started and ended their work at the Landfill. If the lawsuit goes away, I believe that the trucks will probably start operating as early and as late as they have in the past.
20. The trucks are driven in a manner that puts the health of our community at risk. The trucks frequently drive considerably faster than the posted 25 m.p.h. speed limit, and sometimes run other vehicles off the road. Trucks have run me off the road too. At one point, I know a truck turned over in front of a house on Washington Boulevard and caught on fire. Only when the Landfill caught wind in 2015 that we were pursuing legal action did it seem that truck traffic on the local roads slowed down, at least for a brief period of time .
21. The Ashurst/Bar Smith community was created through pioneering Black landowners like my ancestors, who created some tight-knit community rich in culture and heritage. I am deeply concerned that the ever-expanding Landfill will do away with the hundreds of years of history here.
22. Given my concerns for my family and that of other Ashurst/Bar Smith community members because of the operation of the Landfill, I am a leader in the Ashurst Bar/Smith Community Organization (ABSCO). ABSCO's mission initially was to prevent the re-opening of the Landfill. For example, in the late 1990s and early 2000s, ABSCO was led by a steering committee of more than ten people, including my parents, Gale Gaunt, Phyllis Gosa, and others represented about more than 100 adults and at least half as many children who lived near the Landfill (then operating as the Tallassee Solid Waste Disposal Center). Since then, ABSCO's mission has been to challenge any expansions of the Landfill and protect against the harm caused by the Landfill in the community.
23. I am angry and saddened by the reality that our remarkable Black majority community bears the effects of the Landfill, when it already is overburdened by lack of opportunity. I think it is not by accident that the Landfill is allowed to operate in proximity to a majority Black community. I am learning that other Landfills and businesses that threaten environmental and health hazards are permitted to operate in other Black majority areas in Alabama like Dothan, Uniontown, Birmingham, etc. These dumps are in our Black communities because our state leaders believe that we cannot defend ourselves.
24. I am disappointed that state officials, from ADEM and Tallapoosa County officials to the state legislators who represent us, have taken *no* responsibility for siting this Landfill in our community and utterly failing to consider the effects of the Landfill on our lives. In

fact, one of ADEM's former directors, Trey Glenn stated publically that we (implying black and aged people) were not intelligent enough to be in the same room with ADEM officials, and that ADEM did not want to hear anything about Environmental Justice, and did not want to hear anything about Title VI.

25. It is for all of these reasons that I and ABSCO continue to do everything in our power to provide information in support of the 2003 complaint under Title VI of the Civil Rights Act with the Office of Civil Rights of the Environmental Protection Agency against ADEM related to its permitting of the Landfill in our community, which my fellow ABSCO leader, Phyllis Gosa, filed. For example, I have taken measurements and pictures of the swamps and beaver ponds covered in silt from the Landfill and sent those photos to the EPA OCR and ADEM. EPA OCR responded that it would look into it, though I was not notified of the results. ADEM tried to correct the wetland violations subsequently only because we complained.
26. What we are experiencing is a violation of our civil rights. What we are asking for is protection. What I will continue to do is add my voice to chorus of complaints in opposition to the landfill in our community.

Executed on 22 day of August 2016.

Ex. 6 Personal Privacy (PP)

EXHIBIT 16

ABSC

ASHURST BAR / SMITH COMMUNITY

Ex. 6 Personal Privacy (PP)
Tallassee, AL 36078

November 15, 2016

Subject: Re-issuance of MSW Landfill Permit # 62-11, Tallassee Waste Disposal Center

Russell A. Kelly, Chief - Permits and Services Division
Alabama Department of Environmental Management
PO Box 301463
Montgomery, AL 36130-1463

Dear Mr. Kelly,

This letter is my response to *Public Hearing - Request for Comments - #422 - Tallapoosa County* that concerns the re-issuing of permit # 62-11 for the operation of the Tallassee Waste Disposal Center (TWDC).

I offer the following concerns and issues for your sincere and thoughtful consideration as you determine whether to reissue permit #62-11. I also have some requests that require a timely response.

I. **TITLE VI RESPONSIBILITY:** The siting of the TWDC, as you are aware, is a textbook violation of Title VI of the Civil Rights Act of 1964. Although your Director, Mr. Lance Lefleur, stated in the ADEM Commission Meeting of August19, 2016, that "ADEM has no responsibility to comply with Title VI or Environmental Justice," other Alabama Agencies disagree. ADEM receives federal funds and therefore is responsible and should be accountable for compliance. The Alabama Department of Transportation in its introduction to their Title VI Program Fiscal Year 2016 Implementation Plan states their responsibility to Title VI:

As a recipient of federal funding, the Alabama Department of Transportation (ALDOT) must comply with Title VI of the Civil Rights Act of 1964, as amended. ALDOT must also comply with all related rules and regulations. This report is submitted in response to 23 CFR Part 200.9 4(b) (11), which requires the State to prepare an annual report of Title VI Implementation Plan for the next fiscal year.

If other Alabama State Agencies that receive federal funds comply with the law, why would ADEM be exempt?

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II. **INADEQUATE APPROVAL PROCESS:** The process for the approval of the site for the TWDC or the permit renewal is inadequate. In addition to facilitating the Violation of Title VI of the Civil Rights Act of 1964, ADEM and Tallapoosa County **failed to effectively communicate** with the Ashurst Bar/Smith Community (ABSC). The same process that was used initially to site the TWDC is still being employed to gain intelligence for renewal of their permit.

EXAMPLE: The current request for comments (Request #422) and the proposed/draft permit were only mailed to eighteen (18) people who owned land that shared boundaries with the TWDC. Of that eighteen (18), seven (7) went to the TWDC (or subsidiaries) and eleven (11) went to absentee land owners who do not experience the day to day impacts of the landfill. In fact, none of the people who live within the three (3) mile impact zone of the TWDC operation were given a chance to review the actual proposed permit, yet they are expected to provide input by the 5:00pm November 17, 2016 deadline.

I therefore request a 30-day extension to allow the ABSC members adequate time to review and respond to your request for comments.

Because the process does not allow for "non-technical engineering" input, ADEM consequently makes arbitrary and capricious decisions. Although the engineering aspects of the landfill and its operating plan look great on paper, they fail to recognize the negative impacts to the environment in which these residents live and depend. That implies that the agencies' decision makers are uninformed as to the impact of their decision on the people they serve. The ADEM mission statement states:

The mission at ADEM is to assure for all citizens of the State a safe, healthful, and productive environment.

Perhaps the failure in meeting this mission is the motive behind Alabama Executive Order #23.

III. The decision makers fail to consider connected actions and cumulative impacts under the current siting and renewal process. Maybe state regulations do not require such investigation before making decisions, but human compassion demands it. The resulting impacts felt by the community are:

a. LAND VALUE ISSUES: **The reduction of land values** and the failure of the county tax accessor to adjust the taxes to reflect that value loss, the loss of land use opportunity and potential wealth of the property owner.

ABSC

ASHURST BAR / SMITH COMMUNITY

b. QUALITY OF LIFE ISSUES: **The degradation of air, soil and water quality.** The TWDC stinks. In fact, it could literally be smelled 3.5 miles away in the Tallassee City Hall Courthouse during the ADEM public hearing on November 10, 2016 in a room filled to capacity with witnesses including ADEM and TWDC personnel. New Zion A.M.E. Church has had to take up the flooring under the pulpit and place plastic over the soil in efforts to prevent the landfill odor from filling the church via the soil. In addition, **the congregation has had to purchase three (3) air filtration systems in order to hold worship service.** It has been reported that Durwood Jackson (former landfill operator) once told community members they should no longer grow food in their gardens due to potential impacts from the landfill. A local farmer is buying water for his cattle because he says that his **cows will no longer drink from the waters in local streams.**

c. INFRASTRUCTURE ISSUES: **There has been no effort on the part of the Tallapoosa County, ADEM or the Alabama Department of Transportation** to improve the road system to handle the tractor trailer or garbage trucks that feed the TWDC. There are three (3) narrow bridges in steep curves on the route of these tractor trailers from I-85 up State Road 49 to the TWDC that are sub-standard.

OBSTRUCTION OF TRAFFIC: Local traffic has to wait for these tractor trailers and garbage trucks to pass before going on to the bridges.

CHILD SAFETY ISSUES: It has been reported by school bus drivers and residents that they are often run off of Washington Boulevard by landfill traffic. It is a known fact that these tractor trailers exceed the 25 mph posted speed limit on Washington Boulevard. The bus driver report that they wait until the landfill traffic passes before putting out the school bus stop sign. This is because **the trucks will not obey the school bus stop sign.** The same situation exists on Ashurst Road.

VEHICLE REPAIRS: There is no maintenance on the county roads used by the landfill traffic. It has been reported that members of the community have had to make costly repairs to their vehicles due to being run off the road by landfill traffic and hitting pot holes caused by that traffic. In addition, neither Tallapoosa County or the TWDC will take responsibility for the road situation or auto repairs and there is no such thing as traffic patrol or enforcement by any of our law enforcement agencies.

THE ENTIRE STATE IS DUMPING ON US: In addition, the preceding paragraph only discusses the impact when the permit only covered nineteen (19) Alabama counties. In April of this year, the State of Alabama increased the service area of the TWDC to include all **sixty-seven (67) counties in the state of Alabama and three (3) counties in the state of Georgia.** Once again, the most impacted people were not notified or given an opportunity provide input about the impacts on our community.

d. HEALTH ISSUES: **There has been no effort by the Alabama Department of Health** to monitor the health of the ABSC members. The state of Alabama has permitted

ABSC

ASHURST BAR / SMITH COMMUNITY

the TWDC nuisance into the ABSC but has not taken any responsibility to assure the health and safety of the community members. There has been no monitoring of water, air or soil quality beyond the boundary of the TWDC. There has been no sharing of an emergency response plan with any member of the community despite several known hazards associated with landfills. There has been no control of disease vectors such as vultures, insects, wild dogs or wildlife. There has been no monitoring of the health of game animals that are hunted and consumed by hunters. There has been nothing done to assure the health and safety of the ABSC. ***Yet it has been dictated despite our opposition that we should bear the burdens of the whole state of Alabama and three (3) counties in Georgia with no compensation for our losses.***

e. INCONSIDERATE OPERATION TIMES: In reviewing the proposed permit, I did not see any reference to the time of operation of the TWDC. At present, Stones Throw advertises that their hours of operation are Monday through Friday 6am to 6pm. **A total of eight (8) to ten (10) tractor trailers of garbage travel to the TWDC starting as early as 1:30am.** What was the content of those trucks and why were they traveling to a closed facility at that time of morning? On October 30, 2021, a verified total of one-hundred and fifty (150) trucks passed within seventy-five (75) feet of my neighbor's house. On November 1, 2016, one-hundred and seventy (170) trucks passed the same neighbor's house. That means that my neighbors experienced 325 stinky, smelly, leaking garbage trucks over a two (2) day period. This is an unfair burden to have simply because your family is black and you choose to live on land that has been in your family since the 1800s.

The entire existence of this landfill is unfair to our community and a clear violation of our rights. It is inhumane and it has been done without regard to proper care for the citizens it affects. Furthermore, we are beyond disappointed with the behavior of this company which demonstrated such disrespect to our community.

Please provide a written response within two (2) weeks of this letter. If you have any questions for me, please let me know in your correspondence.

I trust you understand that we are only requesting the same rights anyone else in this country has: to live in an environment that is safe for our children and families and which provides a decent quality of life for its citizens. Surely, that is something we all have in common and besides, this is your stated mission.

Best,

Ex. 6 Personal Privacy (PP)

President, ASBC
Concerned Citizen of Tallapoosa County

EXHIBIT 17

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Attorney Client Work Product

DECLARATION OF Ex. 6 Personal Privacy (PP)

Pursuant to 28 U.S.C. § 1748, I declare under penalty of perjury that the subsequent is true and correct:

1. My name is Ex. 6 Personal Privacy (PP) pastor at the New Zion A.M.E. Church, located at Ex. 6 Personal Privacy (PP) , directly across from the Stone's Throw Landfill. My congregation is comprised of approximately 21 to 28 individuals, most of whom are African-American. Approximately 85% of the congregation resides in the Ashurst Bar/Smith community in the shadow of the Landfill.
2. My Church has served the Ashurst Bar/Smith community for approximately 88 years. I began to work at the Church 12 years ago.
3. When I first arrived, I attempted to hold a number of outdoor events on the Church grounds, but the foul odors were so overpowering that few people would attend the events, and those that did attend would not stay for long. The odors seep into the Church building as well, particularly if we open the windows in the summer to cool the building.
4. I quickly gave up on the idea of holding Church functions and events outdoors, and the Church's ample, grassy lawn goes unused because of the smells from the Landfill.
5. In addition, 12 years ago I purchased three air purifiers for the Church building to address indoor smells. These purifiers cost approximately $200 each. I do not dare open the windows and, instead, run window-unit air conditioners to cool the building during the warmer months. If not for the smell, I would prefer to open the Church windows instead of using and paying for air conditioning.
6. The Church spends approximately $90 to $120 dollars a month on electricity, which includes the electricity needed to run these air purifiers and the window-unit air conditioners.
7. I looked into installing central air for the Church building, but the electrician told me that we had a better chance of filtering out the outdoor air using the window-unit air conditioners that the Church has now. So I gave up on the idea of installing central air conditioning.
8. The foul odor has intensified over the 12 years that I have worked at the Church. It did not use to smell so bad early in the morning, but now it does.
9. I am concerned not only about foul odors coming in through the air, but also the odors that seep up through from the soil beneath the Church basement. A few years ago, I lined the floor of the Church basement with a plastic liner to help abate these smells. I continue to be concerned that there may be vapor intrusion into the basement that is affecting my health and the health of other churchgoers.
10. The Church building has also had problems with pests. Dead bugs such as ladybugs accumulate on the windowsills. In addition, recently the Church's pews have been attacked by wood-eating worms.
11. Groundwater has also been a concern of the Church. We built trenches on the Church property to redirect the water flowing from the Landfill so that the water does not damage the Church building. In addition, I have installed a layer of plastic on the floor of the Church basement to prevent groundwater seepage.

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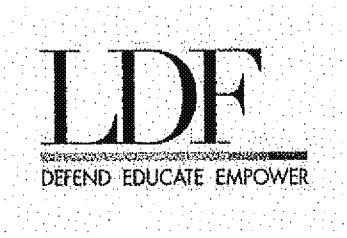
12. A giant methane flare burns all the time on the Landfill property less than 1,000 feet from the Church. In addition, I constantly see and hear garbage trucks running up and down Washington Boulevard, tearing up the road and dropping debris as they make their way to and from the Landfill.
13. Because of the foul odor and other inconveniences, it is hard to get people to come to the Church building. For that reason, the Church only holds services on site once a week, on Sunday mornings. On other days, I hold conference calls with the congregation instead of weekday on-site services like Bible Study.
14. When congregants come to the Church, many take an alternate route along unpaved dirt roads to avoid driving past the Landfill.
15. Over the years, I have also noticed attrition of the congregation. People move away from the Ashurst Bar/Smith community because the impacts from the Landfill have made the area unlivable. I have seen many homes abandoned, some with "for sale" signs, but no one is willing to buy them. Companies even refuse to come to the community to repossess trailers. I have seen our roads littered with debris like old tires from the trucks going to and from the Landfill.
16. In addition to being a Pastor, I also work as a nurse at the VA Medical Center in Tuskegee, Alabama. I have worked as a nurse for over 35 years.
17. In my capacity as a nurse, I have noticed that the number and intensity of the health issues of my congregation in Tallassee are striking. Many people suffer from asthma and other breathing problems, headaches, and other chronic issues.
18. I, too, suffer from asthma, and have a family history of the disease. My asthma flares up whenever I am in Tallassee, and I find that I have more respiratory issues when I am in Tallassee than when I am in Tuskegee or other areas.
19. When I drive by the Landfill and its methane flare, the scent is so strong that I have to wear a mask to prevent respiratory issues even while still in the car. Because of this, I have altered my route to drive to the New Zion A.M.E. Church to purposefully avoid driving by the Landfill and the methane flare.
20. I am deeply troubled by the adverse impacts the Landfill has had on the Ashurst Bar/Smith community. I have seen the health and wellbeing of the community deteriorate in the 12 years that I have served as a pastor at New Zion A.M.E. Church. The Church should be the center of the community, but it is exceedingly difficult for us to play that role since the Landfill has made even congregating at the Church an unpleasant and potentially hazardous task. I worry about the future of my Church and my congregation as we continue to live under the impacts of the Landfill.

Executed on _____ day of August 2016.

Ex. 6 Personal Privacy (PP)

EXHIBIT 18

ALASKA CALIFORNIA FLORIDA MID-PACIFIC NORTHEAST NORTHERN ROCKIES
NORTHWEST ROCKY MOUNTAIN WASHINGTON, D.C. INTERNATIONAL



Via E-mail and USPS Mail

November 17, 2016

Russell A. Kelly, Chief
Permits and Services Division
Alabama Department of Environmental Management
1400 Coliseum Blvd.
Montgomery, AL 36130
Mailing Address: PO Box 301463
Montgomery, AL 36130-1463
Email: rln@adem.state.al.us

Re: **Application of Tallassee Waste Disposal Center, Inc. to Alabama Department of Environmental Management for Renewal of Solid Waste Facility Permit #62-11 for the Operation of Stone's Throw Landfill in Tallapoosa County, Alabama**

Dear Mr. Kelly,

Earthjustice[1] and the NAACP Legal Defense & Educational Fund, Inc. (LDF)[2] write on behalf of the Ashurst Bar/Smith Community Organization (ABSCO) to vigorously oppose the request by the Tallassee Waste Disposal Center Inc. (TWDC) to the Alabama Department of Environmental Management (ADEM) to renew its permit (Solid Waste Facility Permit #62-11) to operate Stone's Throw Landfill (the "Landfill"), a municipal solid waste facility in Tallapoosa County, Alabama. This letter also supplements the separate November 16 letter submitted by Rev. Ronald C. Smith, as President of ABSCO and a concerned citizen of Tallapoosa County.

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1 Earthjustice is America's original and largest nonprofit environmental law organization. Earthjustice leverages its expertise and commitment to fight for justice and advance the promise of a healthy world for all.

2 Since its founding in 1940, LDF has been a leading advocate for racial justice in the United States using litigation, advocacy, and public education. LDF has fought tirelessly to make the promise of equal opportunity in all areas of life for Black Americans a reality, including the right to clean air, water, land, public transportation, and other human necessities, recognizing that environmental justice is requisite to a democratic and just society.

NORTHEAST 48 WALL STREET, 19TH FLOOR NEW YORK, NY 10005

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Earthjustice and LDF represent ABSCO in its civil rights complaint against ADEM with the Office of Civil Rights (OCR) at the U.S. Environmental Protection Agency (EPA). ABSCO contends that ADEM has violated (1) Title VI of the Civil Rights Act of 1964 (Title VI), 42 U.S.C. § 2000d *et seq.*, (2) EPA's implementing regulations, 40 C.F.R. § 7.35(b)-(c), and (3) EPA's 2003 recommendation to ADEM for complying with Title VI by reissuing and modifying the permit for the Landfill to operate *without* assessing whether the Landfill's operations have had and continue to have a disparate impact on Black residents in the Ashurst Bar/Smith community.[3] As discussed *infra*, ABSCO contends that ADEM has an independent duty to undertake an analysis of the social, economic, and health impacts of the Landfill on the Ashurst Bar/Smith community, separate and apart from the obligation of the local governing body (*i.e.*, the Tallapoosa County Commission) to do so. The complaint further alleges that the Landfill's operations have devastated the lives of the majority-Black Ashurst Bar/Smith community members, many of whom are members of ABSCO and live in closest proximity to the Landfill in Tallassee. ABSCO's complaint has been pending at OCR since 2003 and is currently under active investigation at the EPA.

The Landfill currently is permitted to receive a maximum of 1,500 tons of waste a day from *all* 67 counties in Alabama and three counties in Georgia. TWDC now seeks a renewal of its permit for the Landfill that would allow it to process an additional 1,500 tons of solid waste over five years. If ADEM renews TWDC's permit, the Landfill will inflict additional harm on these Alabama citizens.

As described in detail below, ABSCO maintains that ADEM's grant of TWDC's current application would violate civil rights laws, regulations, and guidance. Indeed, the Tallapoosa County Commission's siting of the Landfill in the Ashurst Bar/Smith community and the various permits granted to the Landfill by ADEM have had and will continue to have an adverse, disproportionate, and unjustified impact on the 98% Black population that lives in closest proximity to the Landfill.

Moreover, ADEM's continued issuance of permits to Stone's Throw and other landfills operating throughout Alabama potentially deprives ABSCO members and other Black Alabama citizens of their right to equal protection under the Fourteenth Amendment to the U.S. Constitution by constituting a pattern or practice of siting landfills in predominantly minority areas in Alabama.[4]

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[3] Letter from Karen D. Higginbotham, Dir., OCR EPA, to Luke Cole, Ctr. on Race, Poverty & the Env't & James W. Warr, Dir., ADEM at 80, EPA File No. 28R-99-R4 (July 1, 2003), ("Yerkwood Letter"), https://www.documentcloud.org/documents/2162712-epa_28r-99-r4.html.

The Yerkwood Letter requires local governing bodies, like the Tallapoosa County Commission, to submit to ADEM detailed analyses of the six minimum siting factors that were considered by the local body in connection with the site-specific permit, including: "[t]he potential impact a facility in any potential location would have on public health and safety, and the potential that such locations can be utilized in a manner so as to minimize the impact on public health and safety," *and* "[t]he social and economic impacts that any proposed location would have on the affected community, including changes in property values and social or community perception." Ala. Code § 22-27-45 (1975).

[4] For example, ADEM has issued and modified permits in Lauderdale, Jefferson, St. Clair, and Walker counties to allow the operation of waste dumps in predominately Black communities. Compl. ¶ 2 (Dec. 22, 1999), https://assets.documentcloud.org/documents/2162712/epa_28r-99-r4.pdf. And landfills in Uniontown (in Perry County) and Dothan (in Houston, Dale and Henry counties) also are the subject of pending Title VI complaints with the OCR EPA.

As a recipient of federal funds, ADEM has civil rights enforcement obligations under Title VI. These obligations require it to consider the disproportionate and unjustified discriminatory impact of its permitting decisions on the surrounding predominately Black community in Tallassee (and other Alabama areas). In this instance, ADEM must deny TWDC's pending application for permit renewal to operate the Landfill because, to our knowledge, no state or local governing body has *ever* conducted a disproportionality assessment to analyze the social, economic, and health consequences of the Landfill on the surrounding predominately Black Ashurst Bar/Smith community in Tallassee. Had ADEM or the Tallapoosa County Commission engaged in this analysis, ADEM would likely find that the Landfill has a disparate impact on the predominantly Black Ashurst Bar/Smith community in violation of Title VI, EPA's Title VI implementing regulations, recommendations, and guidance, as we detail below.

Moreover, EPA has specifically directed ADEM to conduct and consider a disproportionality assessment in making its permitting decisions to carry out ADEM's Title VI obligations. Yet ADEM has failed to do so and, thus, cannot assess whether its permitting decisions have the effect of subjecting the surrounding community to discrimination on the basis of race. For these reasons, ADEM cannot renew TWDC's permit to operate the Landfill.

The comments below discuss some of the specific grounds for denying TWDC's permit renewal request.

I. ADEM Must Deny TWDC's Application for Permit Renewal to Operate the Stone's Throw Landfill Because the Failure to Conduct and Consider a Disproportionate Impact Analysis Violates Title VI of the Civil Rights Act of 1964, EPA Implementing Regulations for Recipients of Its Funds, and EPA's Directive to ADEM.

ADEM must deny TWDC's application for a permit renewal to operate the Stone's Throw Landfill because (1) Title VI prohibits discrimination by federally assisted programs like ADEM's municipal solid waste permitting program, (2) EPA's Title VI implementing regulations prohibit recipients from engaging in methods of administering EPA funds, including permitting decisions, that have a disproportionate impact on individuals based on their race, and (3) EPA has specifically directed ADEM, if the local governing has not or has not done so sufficiently, to conduct and consider a disproportionality assessment in carrying out its Title VI obligations, but ADEM and the Tallapoosa County Commission have failed to undertake this analysis.

Title VI provides that "[n]o person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."[5] Section 602 of Title VI requires federal agencies to create implementing regulations that specify how they will determine whether recipients of federal funds are engaging in racially discriminatory practices, as well as the process by which the agencies plans to review and investigate complaints of racial discrimination.[6] EPA's implementing regulations prevent recipients of its funds from engaging in intentional discrimination, as well as actions and methods of administration that "have the *effect* of subjecting individuals to discrimination because of their race, color, [or] national origin . . ."[7]

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5 42 U.S.C. § 2000d.

6 *Id.* § 2000d-1.

7 40 C.F.R. § 7.35 (b)-(c).

EPA's Title VI implementing regulations unequivocally apply to permitting decisions by recipients of its funds as set out in 40 C.F.R. § 7.35(c).[8] EPA generally interprets Title VI to impose an affirmative obligation on recipients of federal funds to include consideration of Title VI criteria in permitting decisions.

Courts have found that a plaintiff shows Title VI disparate impact discrimination by first demonstrating "that a facially neutral practice disparately and adversely impacts them, and that the disparate impact is causally linked to the contested practice." *S. Camden Citizens in Action v. N.J. Dep't of Envtl. Mgmt.*, 145 F. Supp. 2d 446, 483 (D.N.J. 2001) (citing *Powell v. Ridge*, 189 F.3d 387 (3d Cir.1999), *cert. denied*, 528 U.S. 1046 (1999)); *see also N.Y.C. Envtl. Justice All. v. Giuliani*, 214 F.3d 65, 69 (2d Cir. 2000); *Elston v. Talladega County Bd. of Ed.*, 997 F.2d 1394, 1415 (11th Cir. 1993). As EPA explained in its 2000 Interim Guidance, "[f]acially-neutral policies or practices that result in discriminatory effects violate EPA's Title VI regulations unless it is shown that they are justified and that there is no less discriminatory alternative." And while EPA may consider compliance with existing federal or state environmental law in assessing Title VI complaints, EPA also has stated that a recipient's Title VI obligations exist "*in addition to* the Federal or state environmental laws governing its environmental permitting program."[9]

ADEM is a recipient of Title VI federal funds from EPA. As such, in addition to complying with federal and state environmental law, ADEM must comply with Title VI and EPA's implementing regulations because when a "recipient receives the EPA assistance, they accept the obligation to comply with EPA's Title VI implementing regulations."[10]

A. ADEM Has Engaged in a Pattern of Discriminatory Permit Modification, Expansion, and Renewal Decisions *Without* A Disproportionality Assessment Being Undertaken

In the 2003 Yerkwood Letter, EPA OCR gave ADEM recommendations on its solid waste disposal program, including the *requirement* that "local governing bodies submit to ADEM, along with their local approval of solid waste landfill permit applications, detailed analyses of the six minimum siting factors (as set out in the State's Solid Waste Disposal Act and ADEM's implementing regulations) that were considered by the local body in connection with the site-specific permit."[11] The Yerkwood Letter went on to suggest that "[w]here a local body's analyses of the six minimum siting factors is not sufficient (as determined by ADEM) or not done, ADEM should undertake its own consideration of these factors during its permitting of a municipal solid waste landfill;" that "ADEM should put in place a program to oversee local government implementation of local solid waste management plans; and ADEM should implement its own

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8 *See also S. Camden Citizens in Action v. N.J. Dep't of Envtl. Mgmt.*, 145 F.Supp.2d 446, 476 (D.N.J. 2001).

9 Draft Title VI Guidance for EPA Assistance Recipients Administering Environmental Permitting Programs (Draft Recipient Guidance) and Draft Revised Guidance for Investigating Title VI Administrative Complaints Challenging Permits (Draft Revised Investigation Guidance), 65 Fed. Reg. 39650, 39680 (June 27, 2000) (emphasis added).

10 Draft Title VI Guidance for EPA Assistance Recipients Administering Environmental Permitting Programs (Draft Recipient Guidance) and Draft Revised Guidance for Investigating Title VI Administrative Complaints Challenging Permits (Draft Revised Investigation Guidance), 65 Fed. Reg. 39650-01, 39650 (June 27, 2000).

11 *See* Compl., *supra* note 4, at ¶ 7-8.

'recommendations' as contained within Phase II of the State's Solid Waste Management Plan."[12] Moreover, the Alabama State Code directs ADEM to require local governing bodies, like the Tallapoosa County Commission, to consider these six minimum siting factors when identifying a potential location for solid waste management facilities in their jurisdiction.[13] The sixth minimum siting factor requires a local governing body and/or ADEM to consider "the social and economic impact that any proposed location would have on the affected community, including changes in property values and social or community perception."[14]

In the letter, EPA OCR also cautioned ADEM that its "failure to adequately consider socioeconomic impacts (including race) at any point in the *siting and permitting* process for municipal solid waste landfills in Alabama" created a "significant potential" for failing to comply with Title VI.[15] Moreover, OCR found that "this potential failure of consideration could lead, in the future, to ADEM-permitted landfills that have an adverse disparate impact on a population protected by EPA's Part 7 regulations."[16]

Given this guidance, ABSCO contends when a local governing body like the Tallapoosa County Commission does not fulfill its obligation to conduct a disproportionality assessment when siting these landfills, it is incumbent upon ADEM to undertake such an analysis when it permits the landfills to operate. Yet, despite EPA's explicit guidance and warning more than thirteen years ago, ADEM has continued to engage in a pattern of issuing, modifying, and renewing permits for landfills in Alabama, including in Tallassee, *without* either itself or the Tallapoosa County Commission having considered the disproportionate effect of these landfills on communities of color and, more specifically, the social, economic, and health impacts that the location of these landfills, including Stone's Throw Landfill, have on the surrounding communities of color. For example, ADEM has issued and modified permits not only in Tallassee but also in Lauderdale, Jefferson, Perry, St. Clair, Tallapoosa, Walker and other counties to operate dumps in predominately Black communities, which could contribute to a pattern of Black land loss and other socioeconomic effects across the State.

Although the Tallapoosa County Commission is a local governing body that is required to submit to ADEM a detailed analysis of the six minimum siting factors considered by it, to ABSCO's knowledge, it has *never* done so. TWDC's current permit renewal request contains no mention of a disproportionality assessment and instead merely lists the property owners who live adjacent to the Landfill and their current relative property values. The application does not contain an assessment of the social, economic, and health impacts of the Landfill on those or any other property owners living near the Landfill or whether the property values of those living adjacent to the Landfill or community perception has changed over time.

ABSCO is unaware of any attempts by ADEM to receive a disproportionality assessment from the Tallapoosa County Commission. Nor is ABSCO aware of any such independent assessment conducted by ADEM. Absent a disproportionality assessment that sufficiently details the social, economic, and health impacts of the Landfill on the Ashurst Bar/Smith community, ADEM cannot renew TWDC's permit. Furthermore, ABSCO is confident that if such an analysis

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12 Yerkwood Letter, *supra* note 3, at 80-81.

13 Ala. Code § 22-27-45 (1975).

14 *Id.*

15 Yerkwood Letter, *supra* note 3, at 80.

16 *Id.*

were undertaken, ADEM would find that the Tallapoosa County Commission's siting of the Stone's Throw Landfill, and ADEM's permitting of the Landfill's operations, have a disproportionate and discriminatory impact on the surrounding Black community.

B. The Operation of the Stone's Throw Landfill Has Created a Disparate and Discriminatory Impact on the Surrounding Black Community in Tallassee in Violation of Title VI and EPA's Implementing Regulations.

ADEM and the Tallapoosa County Commission's failure to consider the social, economic, and health impacts of the Landfill's operations *prior* to approving TWDC's application for permit renewal, given the disparate and discriminatory impact that the operation of the Landfill has on the Ashurst Bar/Smith community, constitutes a violation of Title VI and EPA's implementing regulations. Had ADEM itself conducted such and assessment or required the Tallapoosa County Commission to do so, the Landfill would most likely not have been reopened in 2002 and allowed to expand its operations in the Ashurst Bar/Smith community. Any grant of the application to renew TWDC's permit will lead to the continued disparate and discriminatory impact on the predominately Black residents in Tallassee.

ABSCO members submitted a complaint to EPA in 2003 that detailed the disparate impact that the Landfill has had on the predominately Black community in which it is currently located. That impact is ongoing. In its complaint, ABSCO cited Census Data that showed that the community directly surrounding the Landfill was 98% Black and that the Landfill provided waste services to communities that were 74% white. EPA OCR used Census Bureau data to calculate the demographics of the community within ½, 1, 2, and 3 miles of the Landfill and found that they were 90.6%, 88.2%, 57.1%, and 44.1% Black, respectively.[17]

At the time of the 2003 complaint, residents of the Ashurst Bar/Smith community detailed the adverse impacts of the Landfill including:

- the presence of toluene in a local drinking spring prior to the reopening of the Landfill in 2002 and the failure of the Tallapoosa County Commission to address the impact of the Landfill's expansion on future toluene levels in the drinking water;
- the Landfill borders the only local church and school in the community;
- although the Ashurst Bar/Smith community is rural and residents mostly used well water, no studies were performed to demonstrate how the water would be protected from toxic runoff from the Landfill that could contaminate the well water;
- Ashurst Bar/Smith community members could not trust their well water, and many community members were forced to switch to tap or bottled water at significant financial cost;
- surface water contamination from toxic runoff from the Landfill was having a deleterious impact on local wildlife, and thus, hunting, farmers' animals, and residents' gardens were no longer being used to produce food; and,

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[17] *See* Letter from Rafael DeLeon, Dir., EPA OCR, to Lance R. LeFleur, Dir., ADEM (Jan. 25, 2013). As of the 2010 Census: the city of Tallassee is 72.4% white and 24% Black, and Tallapoosa County is 71% white and 27% African American (2014 data).

- the Landfill was leading to the devaluation of residential property and having a negative impact on social and community perception of the Ashurst Bar/Smith community because of its proximity to the Landfill.

Earthjustice and LDF, on behalf of ABSCO, continue to document the impact of the Landfill on members of the Ashurst Bar/Smith community to EPA OCR in support of its Title VI complaint.[18] The following list of current adverse and unjustified impacts mirror those identified in the original EPA complaint or otherwise reflect impacts that have come to light over time:

- large amounts of garbage truck-traffic travel in and out of the community to access the Landfill, beginning in the early morning and continuing through the early evening, at fast speeds on rural, residential roads, pose safety risks to school-age children and damage the roads;
- putrid smells, emanating from the Landfill, and persistent bugs, attracted to the garbage at the Landfill, dissuade families from eating and spending time outside together, parishioners at the neighboring church from engaging in fellowship activities with one another, and households from opening their windows as part of their daily life;
- vultures and other pests that are harbingers of disease have increased and pose safety and health concerns;
- community members complain of health impacts such as cancer, respiratory problems, migraines, and dizziness, which residents have reason to believe are related to contamination from the Landfill;
- community members complain of the psychological harm of living next to a dump;
- residents no longer garden, fish from the waterways, or use well water or springs and streams because of fear of contamination; they instead buy food and water at greater costs and have changed their ways of life that had been passed down from one generation to the next; and,
- community members complain that they do not want to sell land that has been held in their families, sometimes since the late 1880s, and, even if they did, there is no buyer for this land except the Landfill; families that have sold their land to get away from the Landfill's harms have sold it to the Landfill; and community members who have chosen not to retire to the Ashurst Bar/Smith community and enjoy their family land because of all of the negative impacts stemming from the Landfill's operation.[19]

Had the Tallapoosa County Commission or ADEM conducted an impact analysis of both the disproportionate impact and uniquely adverse consequences that the Landfill continues to have on the predominately Black community where the Landfill is currently located, ADEM, in fulfilling its Title VI obligations, would likely not have permitted the Landfill to reopen and expand. ADEM cannot allow TWDC to renew its permit to operate the Landfill until a disproportionate impact analysis is conducted *and* ADEM finds, after fully considering the information therein, that the Landfill does not have a disparate and adverse impact on the surrounding Black community.

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[18] The November 16 letter from Ron Smith also shines a light on the impact of the Landfill on the Ashurst Bar/Smith community.

[19] *See* **Attachment A,** Letter from Leah Aden, Att'y, LDF, & Marianne Engelman Lado, Att'y, Earthjustice, to Betsy Biffl, Att'y, EPA OCR (Sept. 28, 2016).

C. TWDC Seeks Variances that Will Exacerbate the Health and Psychological Consequences of the Landfill and Have a Disparate and Discriminatory Impact on the Majority-Black Ashurst Bar/Smith Community

In addition to the issues described above, TWDC's renewal request seeks dispensation from the bare minimum health and safety requirements of Alabama law, raising additional concerns for the health and welfare of community residents. In particular, many of the variances requested by TWDC would serve to exacerbate the health and psychological consequences of the Landfill on Black residents. Further, the variances sought by TWDC potentially violate ADEM's state law obligations, codified in ADEM's Solid Waste Program Administrative Code.[20]

For example, ADEM Rule 335-13-4-.12(d)(f) requires a 100-foot buffer zone around the perimeter of the landfill, and ADEM Rule 335-13-4-.22(1)(b) requires waste water to be confined to as small an area as possible, and for a landfill to use tarps, contaminated soils and petroleum, and automotive shredders residue as an alternative daily cover.[21] TWDC seeks variances from rules adopted by ADEM to fulfill its environmental law obligations explicated in the Alabama Solid Waste Management Plan. Thus, the permit should be rejected on this additional ground.

As members of the Ashurst Bar/Smith community have outlined in their written correspondence to EPA, some of which are described above, many of the most psychologically and physically harmful impacts of the Landfill are associated with the variances sought by TWDC. For example, the improper covering of the dump's contents is a phenomenon that serves as an eyesore to the otherwise serene, rural life in Tallassee, and has brought putrid odors, vultures, wildlife, and other pests, which are harbingers of disease, into the Ashurst Bar/Smith community. The variance described above would allow the Landfill to continue to improperly and inadequately cover the Landfill's contents.

Similarly, many residents have documented how their inability to use their well-water—because of the belief that its contaminated—and the deleterious effects of toxin-contaminated surface water has prevented them from using free, natural resources (for gardening, eating, and feeding their animals), and engaging in outdoor activities at a substantial financial and psychological cost. ADEM will aggravate this problem by allowing the Landfill to deviate from state law requirements that waste water be confined to as small of an area as possible.

ADEM's duty to deny these variances arises not only from its Title VI obligations, but also its obligations under state law. ADEM, as an executive agency of Alabama, is charged with administering state laws regulating potential environmental hazards.[22] The Alabama Legislature

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[20] *See* Ala. Admin. Code r. 335-13-4 (1996), http://www.alabamaadministrativecode.state.al.us/docs/adem/335-13-4.pdf

[21] *See* Tallassee Waste Disposal Ctr., Inc. Permit Application, No. 62-11 (June 16, 2016), http://www.adem.state.al.us/newsEvents/notices/oct16/pdfs/10tallassee.pdf.

[22] Ala. Code. § 22-22A-4(a); Ala. Code. § 41-22-3(1).

For example, ADEM administers the: (1) Alabama Water Pollution Control Act, (2) Alabama Safe Drinking Water Act of 1977, (3) Solid Wastes and Recyclable Materials Management Act, (4) Alabama Air Pollution Control Act, (5) Hazardous Wastes Management and Minimization Act, (6) Alabama Land Recycling and Economic Redevelopment Act, (7) regulatory responsibilities of the Alabama Coastal Area Management Program and (8) Alabama Environmental Management Act.

has directed ADEM to develop a State Solid Waste Management Plan.[23] In enacting Alabama's Solid Waste Management Plan, the Legislature intended to "to protect the public health and the state's environmental quality."[24] To achieve this purpose, the law provides that "[t]he terms and obligations of this article shall be liberally construed to achieve remedies intended." *Id.* The Alabama Legislature determined that the state must properly manage wastes "to reduce the likelihood of both short-term and long-term threat to human health and the environment . . ."[25] The Legislature also found that "[p]roper planning for solid waste management must include the evaluation of facility sites based on a broad group of factors including, but not limited to, environmental conditions, local needs for waste management, *social and economic impacts on the host community*, the availability and impact on public services, and the consistency of a proposed facility with any final solid waste management plan[.]"[26]

Moreover, on September 15, 2016, Alabama's Governor created the Alabama Solid Waste Management Task Force "to study and identify areas for specific revision regarding the permitting process for solid waste management facilities," having recognized that "the disposal of solid waste impacts the economic vitality and health of the citizens" of the area surrounding solid waste facilities, and the "the current process for permitting solid waste disposal does *not* provide for a comprehensive review of the broader effects of solid waste disposal on the people of the State of Alabama *before* awarding a permit."[27]

Accordingly, the state's Solid Waste Management Plan, particularly the breadth of its coverage, and the Governor's recognition of the need for a review of a landfill's impact *before* a permit is awarded, all counsel against ADEM renewing TWDC's permit to operate the Stone's Throw Landfill with the aforementioned variances. The variances sought by TWDC are contrary to the State's Solid Waste Management Plan and the legislative intent that guided the creation of the law. Because the variances sought by TWDC will increase the likelihood of both short and long-term socioeconomic threats to the community and the environment (particularly the air and water resources), the variances conflict with the state's mandate.

ADEM is aware that TWDC may be violating Alabama state environmental law, including the Alabama Clean Water Act, and yet, incredibly, TWDC requests variances from compliance with those laws. For example, TWDC's request for a variance from ADEM Rule 335-13-4-.22(1)(b)—requiring waste water to be confined to as small an area as possible—is potentially problematic given TWDC's *prior* notices of potential waste water violations and TWDC's Clean Water Act permit. For example, on October 29, 2007, the Landfill was issued a Notice of Violation from ADEM for "unapproved placement of special waste in the lined [Municipal Solid Waste] MSW cell at the Stone's Throw Landfill."[28] More recently, on July 10, 2015 an inspection of the

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23 Ala. Code. § 22-27-45; *see also* Ala. Code §§ 9-7-10 to 9-7-20.

24 Ala. Code § 22-27-41.

25 *Id.* § 22-27-40(2).

26 *Id.* § 22-27-40(5) (emphasis added); *see also* Ala. Admin. Code r. 335-13-4-.01 (the landfill siting factors are designed "to prevent adverse effects on health or the environment").

27 Ala. Exec. Order No. 23 (Sept. 15, 2016), http://governor.alabama.gov/newsroom/2016/09/executive-order-number-23-2/.

28 *See* **Attachment B**, Letter from Heather Griffin to Registrant, TWDC (Aug. 11, 2010).

Landfill identified additional concerns about Alabama law potential violations regarding waste water management. The warning letter, prepared by a senior environmental scientist at ADEM, states that:

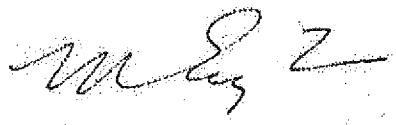
> [1] "appropriate, effective Best Management Practices (BMPs) for the control of pollutants in stormwater run-off have not been fully implemented and regularly maintained to the maximum extent practicable resulting in the potential for uncontrolled discharges of sediment and other pollutants to a water of the state of Alabama," [2] that "[e]ffective stabilization practices designed to dissipate stormwater runoff energy and provide for non-erosive flow velocity at stormwater discharge outlets to prevent erosion in downgradient draining features or water(s) of the State have not been fully implemented and/or maintained," and that [3] "[s]ediment accumulation in the sediment basin or other treatment structure appears to be excessive, resulting in the potential for noncompliant discharges from reduced treatment/storage capacity.[29]

Ultimately, Ashurst Bar/Smith community members have identified the putrid smells, presence of pests and vultures, and inability to trust their drinking water as particularly problematic impacts, yet TWDC seeks variances to the Landfill's operation that not only potentially violate Alabama state law and the Alabama Solid Waste Management Plan, but also would serve to reinforce and worsen the specific adverse impacts cited by the community that violate Title VI. As such, the variances requested by TWDC underscore the imperative that ADEM deny TWDC's permit to renew its operation of the Landfill.

Conclusion

Based on the foregoing, Earthjustice and LDF, on behalf of ABSCO, request that ADEM **deny TWDC's application for permit renewal to operate the Stone's Throw Landfill** (Permit #62-11). TWDC's permit renewal request must be denied because (1) Title VI of the Civil Rights Act of 1964 prohibits discrimination by federally assisted programs like ADEM's municipal solid waste permitting program; (2) EPA's Title VI implementing regulations prohibit recipients, like ADEM, from engaging in actions, including permitting decisions, that have a disproportionate and discriminatory impact on individuals based on their race; and (3) EPA has specifically directed ADEM and/or the Tallapoosa County Commission to conduct and consider a disproportionality assessment in carrying out its Title VI obligations, which ADEM and the Tallapoosa County have failed to conduct to date. Earthjustice and LDF are confident that if such a disproportionality analysis were undertaken, ADEM would find the permitting and siting of the Landfill, including the requested variances to the Landfill's operations, have a disproportionate and discriminatory impact on the surrounding majority-Black community in violation of Title VI and state laws.

Sincerely,



[29] *See* **Attachment C**, Warning Letter from Shelane P. Bergquist, ADEM to Charlie Gray, TWDC (July 10, 2015).

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Mary O'Lone, EPA
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M. Andrew Zee, U.S. Department of Justice

EXHIBIT 19

2E - SOUTHWEST
, ALABAMA (LOCATOR 25)

0 SCALE OF MILES 1/2 1 SCALE OF MILES 1/2 1
0 640 1280 1920 2560 SCALE OF FEET 5280 SCALE OF FEET 5280

TWP.18N-RNG.22E - SOUTHEAST
TALLAPOOSA COUNTY, ALABAMA (LOCATOR 25)

Ex. 6 Personal Privacy (PP)