



St. Croix Sensory, Inc.

SWAPE

Bridgeton Sanitary Landfill Air Quality Assessment

Odor Evaluation Report

Report No. 1315001

05/30/13

Data Release Authorization:

Natasha Satre  
Laboratory Associate

Reviewed and Approved:

Charles M. McGinley, P.E.  
Technical Director

St. Croix Sensory is a laboratory dedicated to practicing state-of-the-art sensory evaluation and to advancing the science of sensory perception.

We are a family owned and operated business providing our clients with personal customer service, flexible scheduling, timely results.

Our focus is to provide the best professional services available to help make your project or product a success.

***[www.fivesenses.com](http://www.fivesenses.com)***

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Fax: 651-439-1065

Email: [stcroix@fivesenses.com](mailto:stcroix@fivesenses.com)

Client: SWAPE

Report No.: 1315001

Project: Bridgeton Sanitary Landfill Air Quality Assessment

Evaluation Date: 05/30/13

#	Field No.	Sample Description	ASTM E679 & EN13725		ASTM E544	PERSISTENCY	CHARACTERIZATION		Comments
			Detection Threshold	Recognition Threshold	Intensity	Dose-Response Slope	Hedonic Tone	Principal Odor Descriptors	
1	U-1		60	35	15		-0.8	Chemical, Earthy, Floral	Sample Field Numbers were not provided.
2	BZ-1		200	120	35		-2.6	Chemical, Offensive, Earthy	
3	D-1		45	30	25		-1.6	Chemical, Earthy, Offensive, Floral	
4	BZ-2		300	150	40		-1.8	Offensive, Chemical, Earthy, Floral, Vegetable	
5	U-2		30	17	13		-0.6	Chemical, Earthy, Fruity, Floral	
6	D-2		55	30	14		-0.6	Chemical, Earthy, Floral, Fruity	
7									
8									
9									
10									

Client: SWAPE

Field No.: U-1

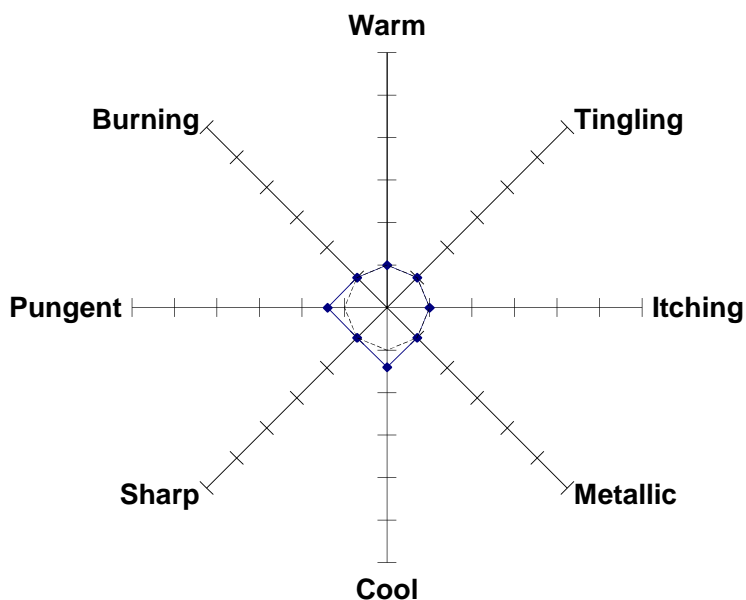
Report No.: 1315001

Project: Bridgeton Sanitary Landfill Air Quality Assessment

Description: \_\_\_\_\_

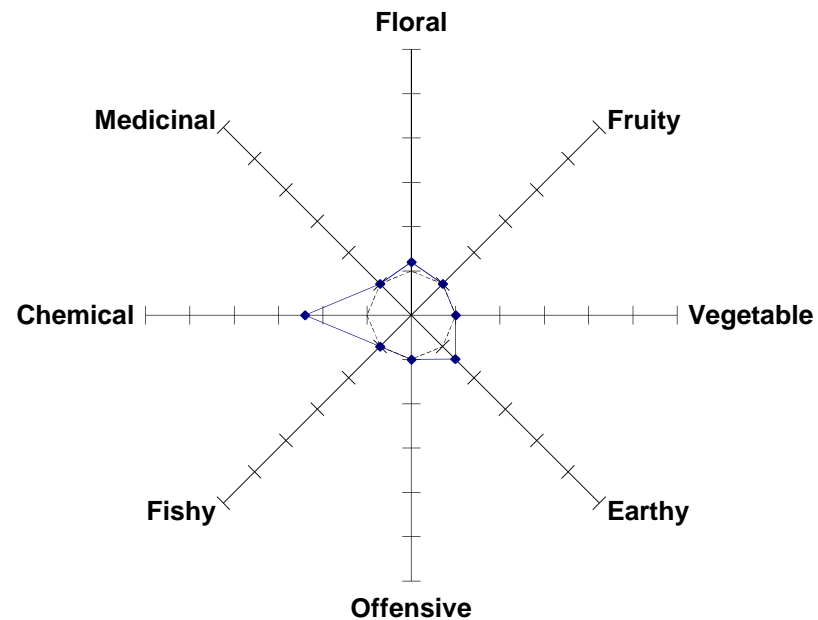
Evaluation Date: 05/30/13

### Sensation Descriptor Graph



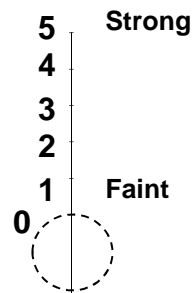
	Average Relative Strength
Warm	0.0
Tingling	0.0
Itching	0.0
Metallic	0.0
Cool	0.4
Sharp	0.0
Pungent	0.4
Burning	0.0

### Odor Descriptor Graph



	Average Relative Strength
Floral	0.2
Fruity	0.0
Vegetable	0.0
Earthy	0.4
Offensive	0.0
Fishy	0.0
Chemical	1.4
Medicinal	0.0

#### KEY



#### Relative Strength

**St. Croix Sensory, Inc.**

**Odor Evaluation Report**

Client: SWAPE

Field No.: U-1

Report No.: **1315001**

Project: Bridgeton Sanitary Landfill Air Quality Assessment

Description: \_\_\_\_\_

Evaluation Date: 05/30/13

% of Assessors |\*\*\*\*\*|\*\*\*\*\*|\*\*\*\*\*|\*\*\*\*\*| 100%

- Fragrant \*\*\*\*\*
- Chemical \*\*\*\*\*
- Paint \*\*\*\*\*
- Plastic \*\*\*\*\*
- Solvent \*\*\*\*\*
- Vinyl \*\*\*\*\*
- Stale \*\*\*\*\*
- Swampy \*\*\*\*\*

Client: SWAPE

Field No.: U-1

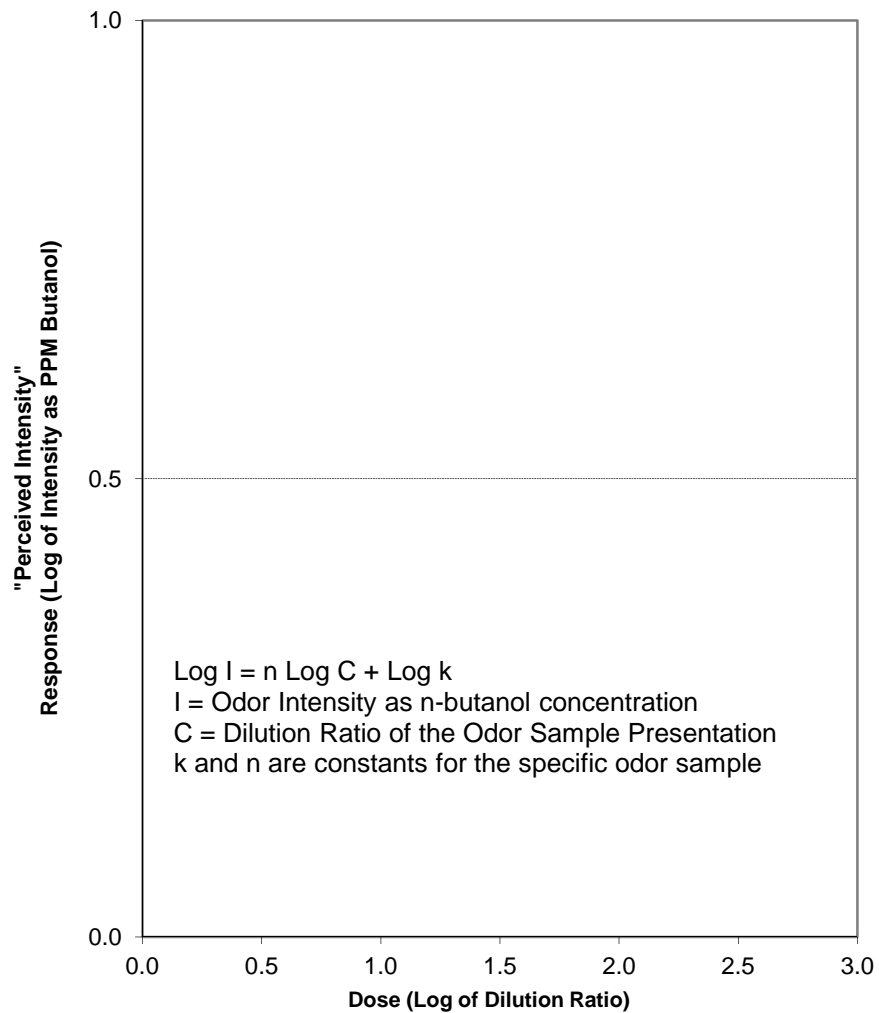
Report No.: 1315001

Project: Bridgeton Sanitary Landfill Air Quality Assessment

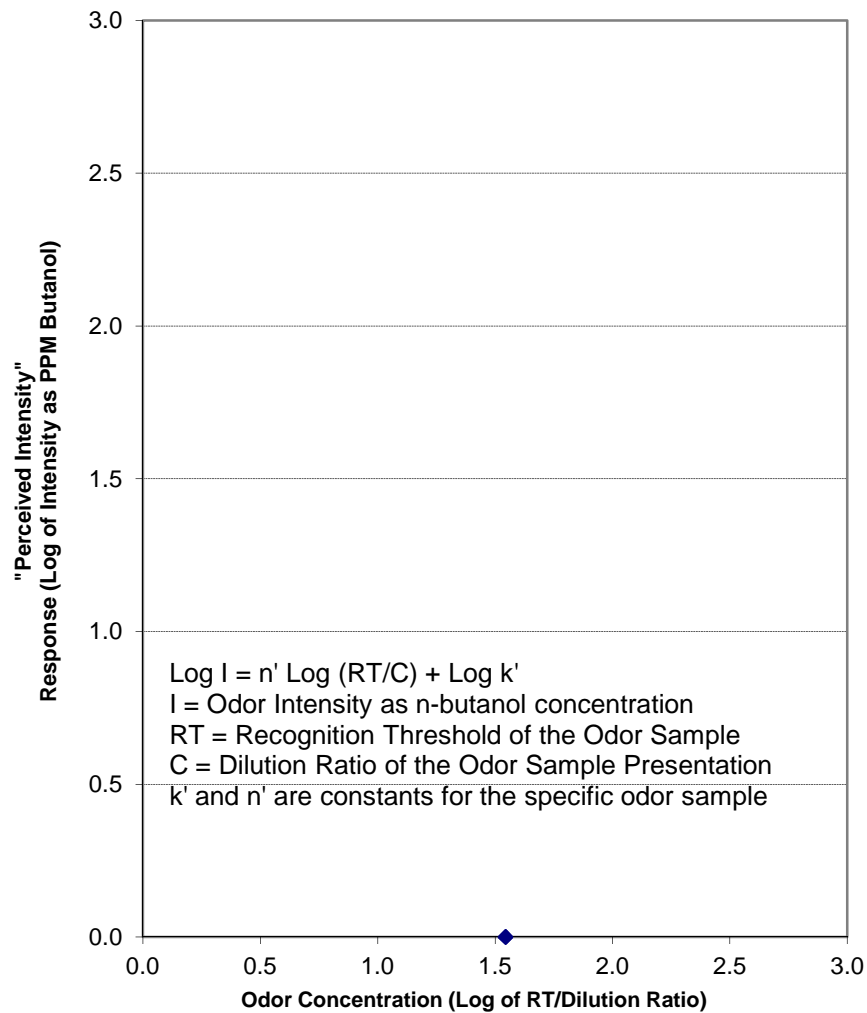
Description: \_\_\_\_\_

Evaluation Date: 05/30/13

### Dose-Response



### Dose-Response as Power Law



Client: SWAPE

Field No.: BZ-1

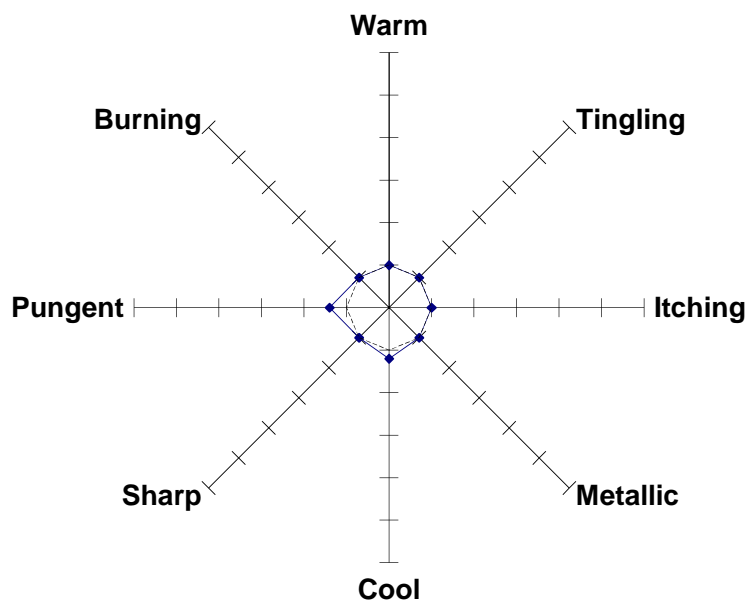
Report No.: 1315001

Project: Bridgeton Sanitary Landfill Air Quality Assessment

Description: \_\_\_\_\_

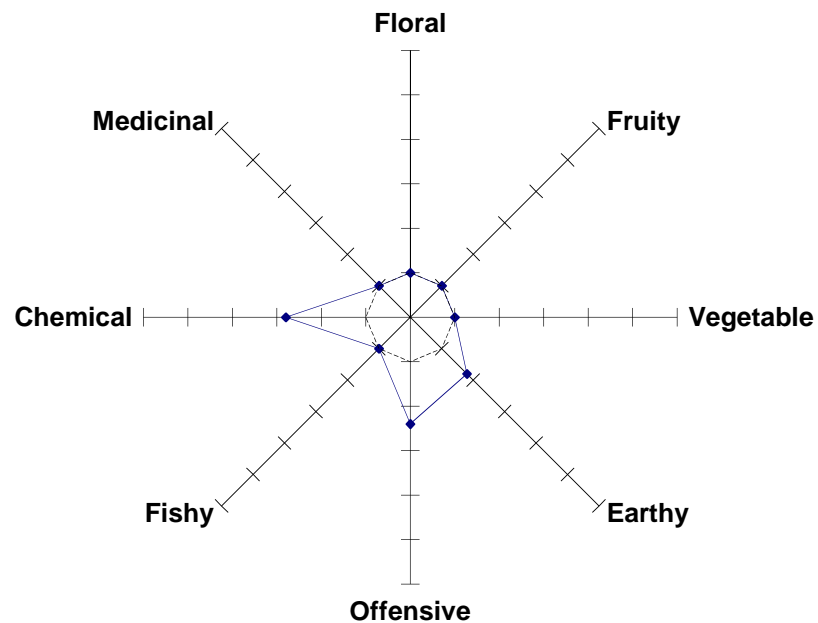
Evaluation Date: 05/30/13

### Sensation Descriptor Graph



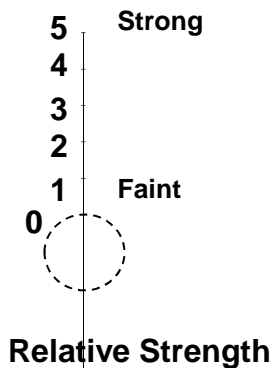
	Average Relative Strength
Warm	0.0
Tingling	0.0
Itching	0.0
Metallic	0.0
Cool	0.2
Sharp	0.0
Pungent	0.4
Burning	0.0

### Odor Descriptor Graph



	Average Relative Strength
Floral	0.0
Fruity	0.0
Vegetable	0.0
Earthy	0.8
Offensive	1.4
Fishy	0.0
Chemical	1.8
Medicinal	0.0

#### KEY



**St. Croix Sensory, Inc.**

**Odor Evaluation Report**

Client: SWAPE

Field No.: BZ-1

Report No.: **1315001**

Project: Bridgeton Sanitary Landfill Air Quality Assessment

Description: \_\_\_\_\_

Evaluation Date: 05/30/13

% of Assessors |\*\*\*\*\*|\*\*\*\*\*|\*\*\*\*\*|\*\*\*\*\*| 100%

- Chemical \*\*\*\*\*
- Paint \*\*\*\*\*
- Plastic \*\*\*\*\*:
- Vinyl \*\*\*\*\*
- Offensive \*\*\*\*\*:
- Garbage \*\*\*\*\*:
- Sour \*\*\*\*\*
- Earthy \*\*\*\*\*
- Mold \*\*\*\*\*
- Musty \*\*\*\*\*
- Stale \*\*\*\*\*
- Musky \*\*\*\*\*

Client: SWAPE

Field No.: BZ-1

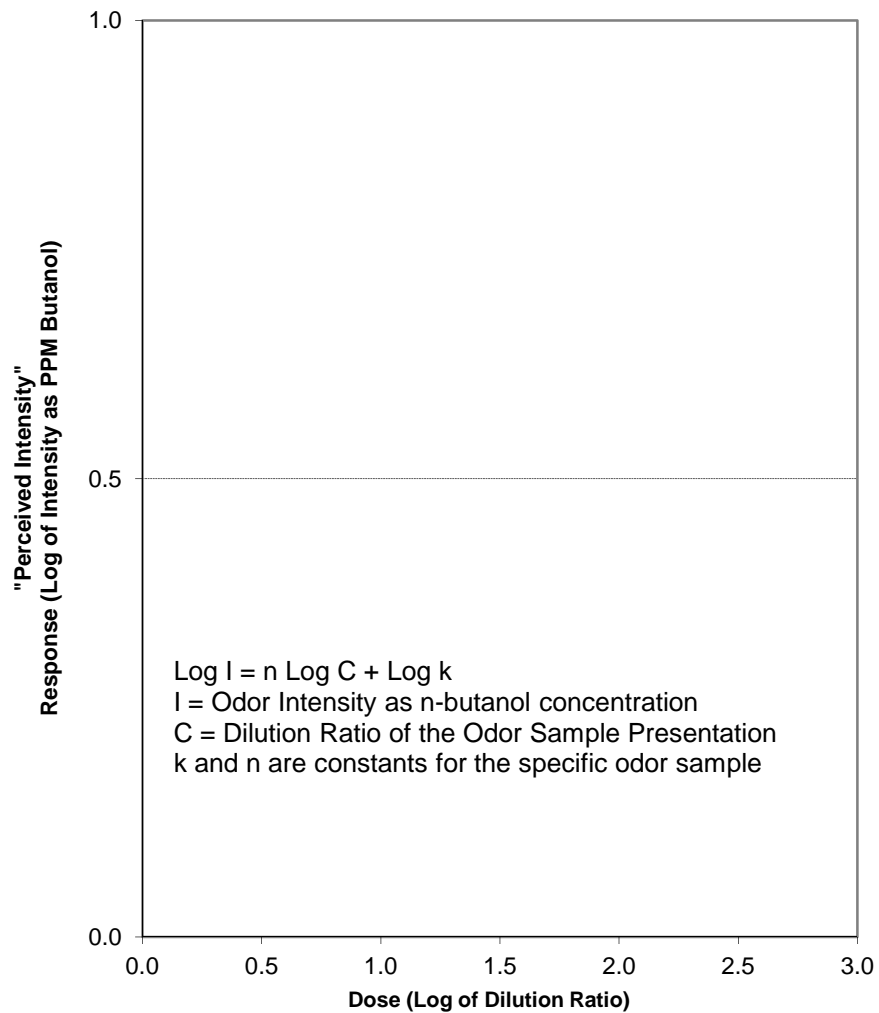
Report No.: 1315001

Project: Bridgeton Sanitary Landfill Air Quality Assessment

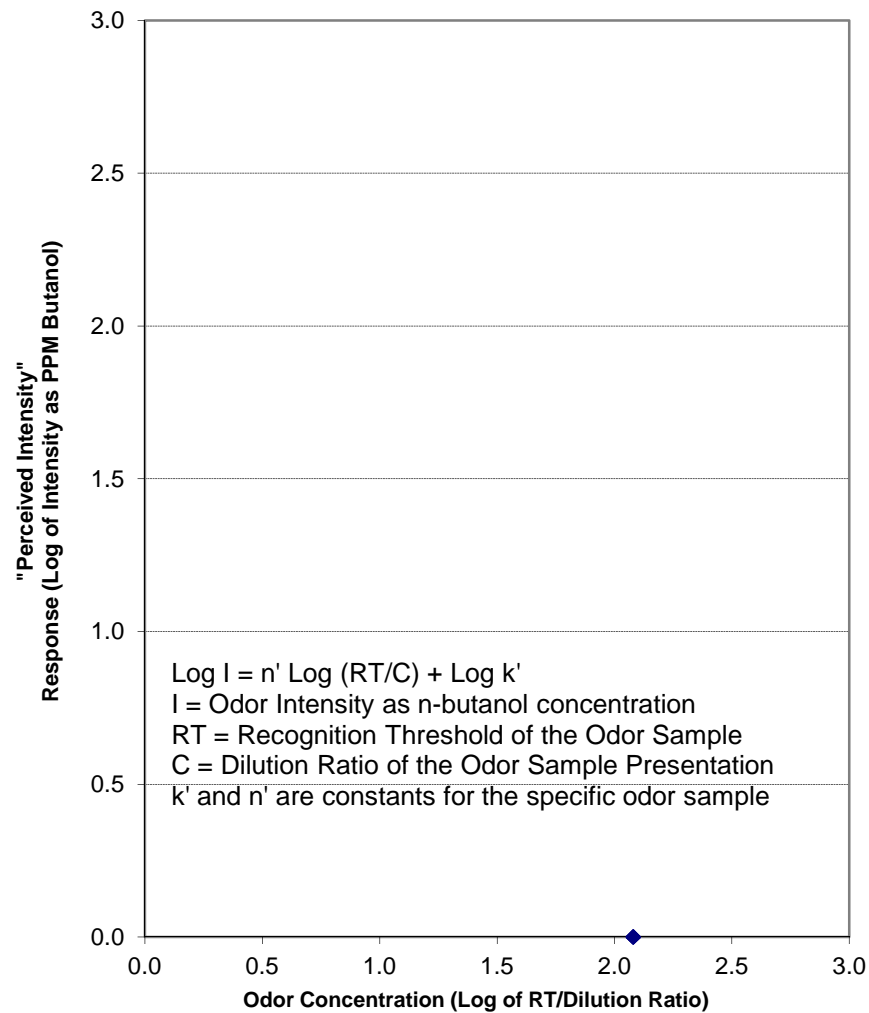
Description: \_\_\_\_\_

Evaluation Date: 05/30/13

### Dose-Response



### Dose-Response as Power Law





Client: SWAPE

Field No.: D-1

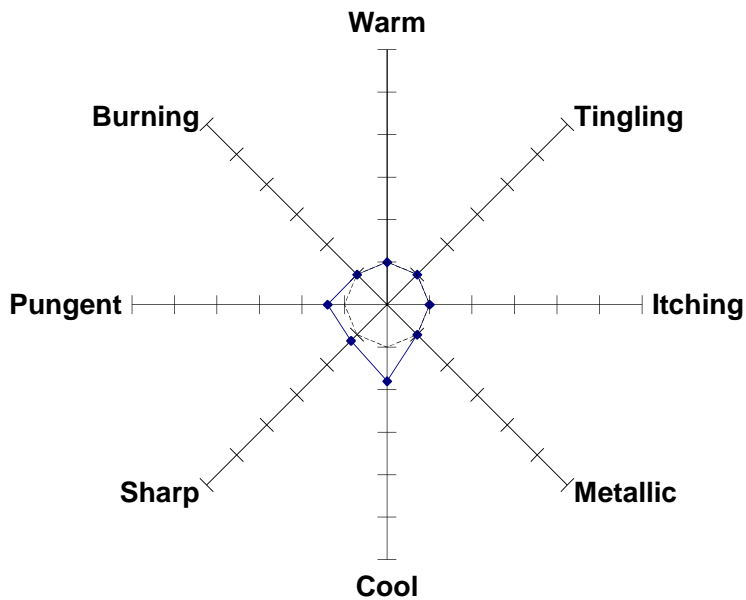
Report No.: 1315001

Project: Bridgeton Sanitary Landfill Air Quality Assessment

Description: \_\_\_\_\_

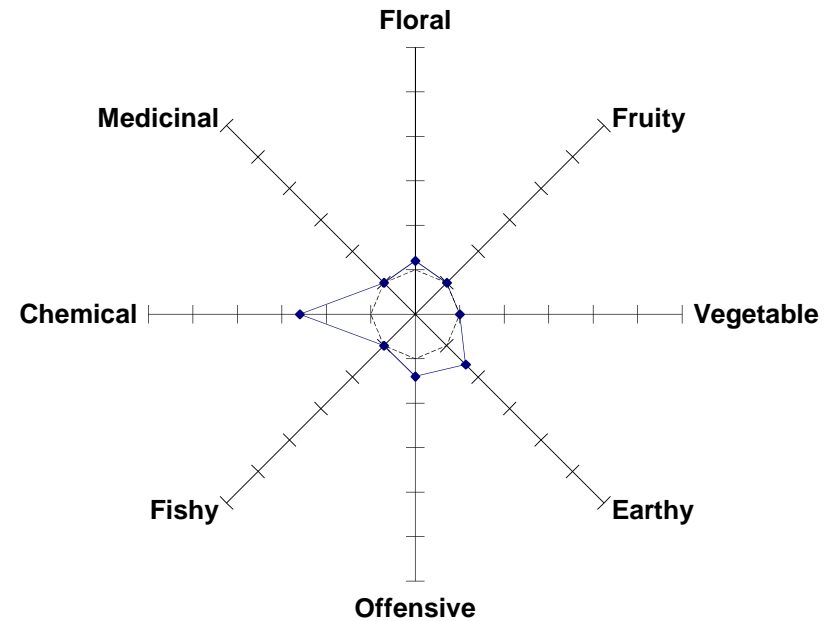
Evaluation Date: 05/30/13

**Sensation Descriptor Graph**



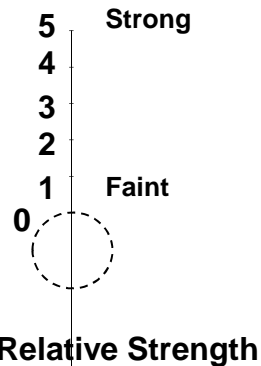
	Average Relative Strength
Warm	0.0
Tingling	0.0
Itching	0.0
Metallic	0.0
Cool	0.8
Sharp	0.2
Pungent	0.4
Burning	0.0

**Odor Descriptor Graph**



	Average Relative Strength
Floral	0.2
Fruity	0.0
Vegetable	0.0
Earthy	0.6
Offensive	0.4
Fishy	0.0
Chemical	1.6
Medicinal	0.0

**KEY**



**Relative Strength**

**St. Croix Sensory, Inc.**

**Odor Evaluation Report**

Client: SWAPE

Field No.: D-1

Report No.: **1315001**

Project: Bridgeton Sanitary Landfill Air Quality Assessment

Description: \_\_\_\_\_

Evaluation Date: 05/30/13

% of Assessors |\*\*\*\*\*|\*\*\*\*\*|\*\*\*\*\*|\*\*\*\*\*| 100%

- Floral \*\*\*\*\*
- Paint \*\*\*\*\*
- Cleaning fluid \*\*\*\*\*
- Plastic \*\*\*\*\*:
- Varnish \*\*\*\*\*
- Solvent \*\*\*\*\*
- Vinyl \*\*\*\*\*:
- Offensive \*\*\*\*\*
- Stale \*\*\*\*\*
- Swampy \*\*\*\*\*
- Musky \*\*\*\*\*

Client: SWAPE

Field No.: D-1

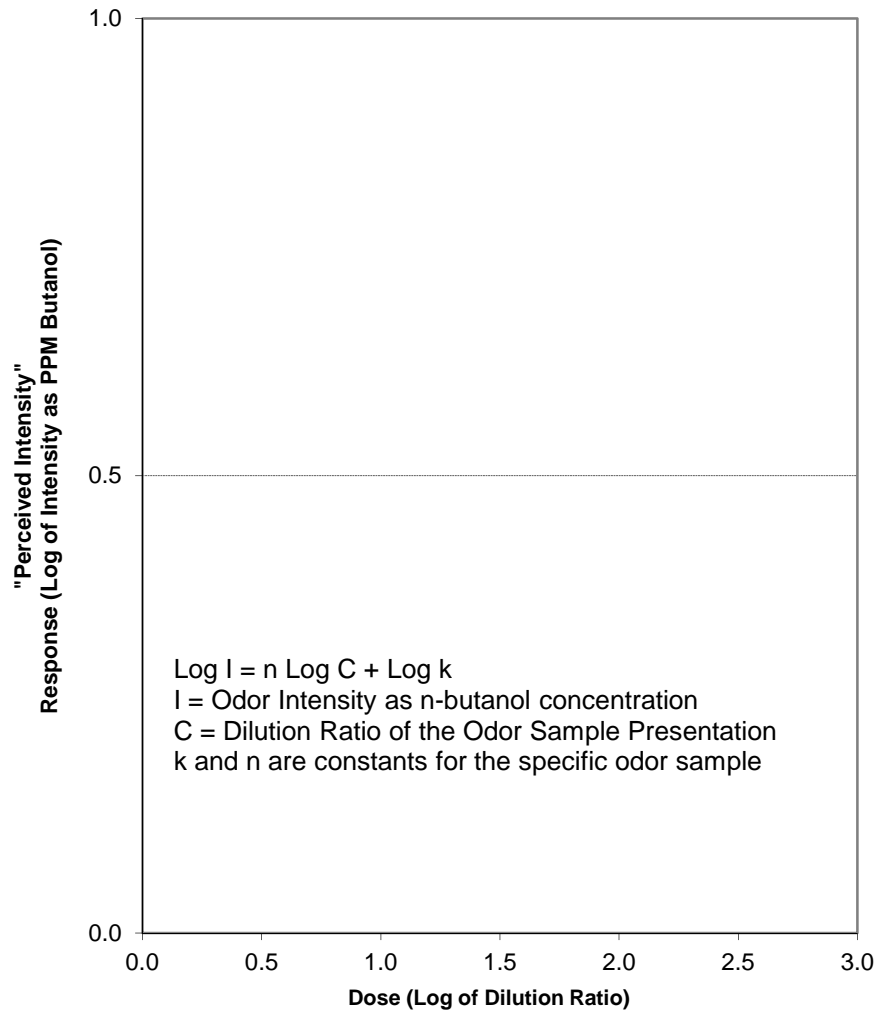
Report No.: 1315001

Project: Bridgeton Sanitary Landfill Air Quality Assessment

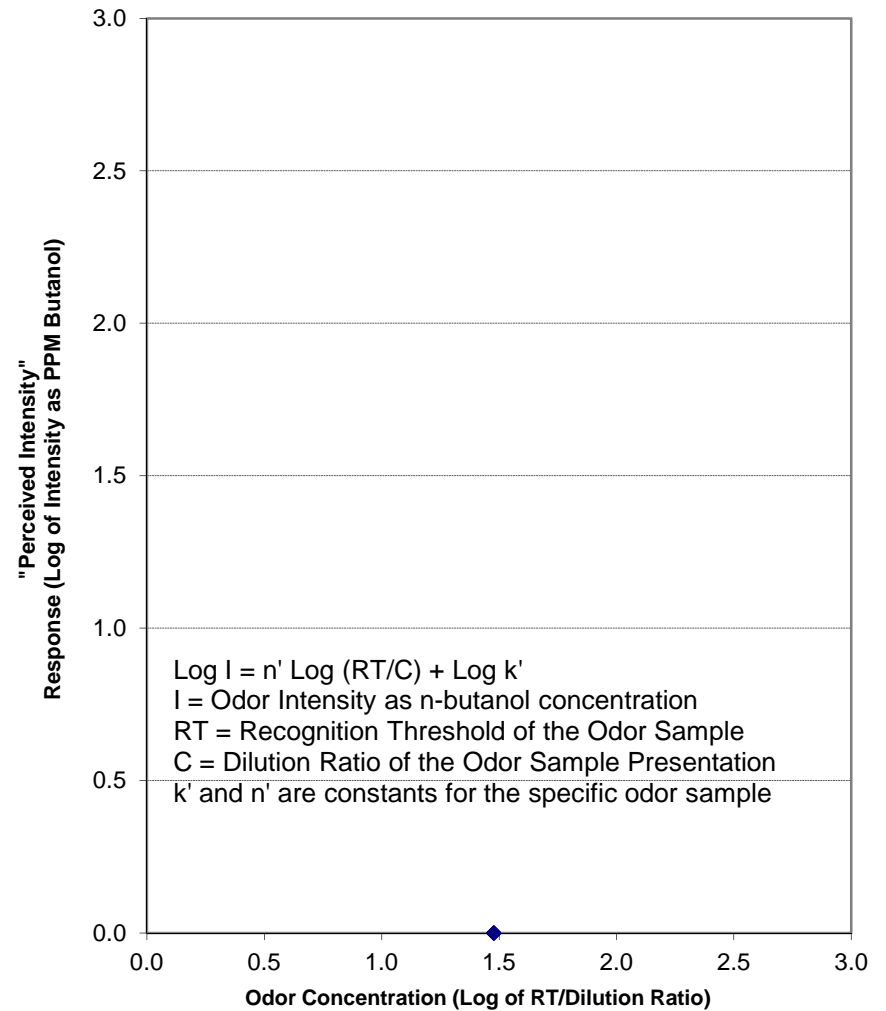
Description: \_\_\_\_\_

Evaluation Date: 05/30/13

### Dose-Response



### Dose-Response as Power Law



Client: SWAPE

Field No.: BZ-2

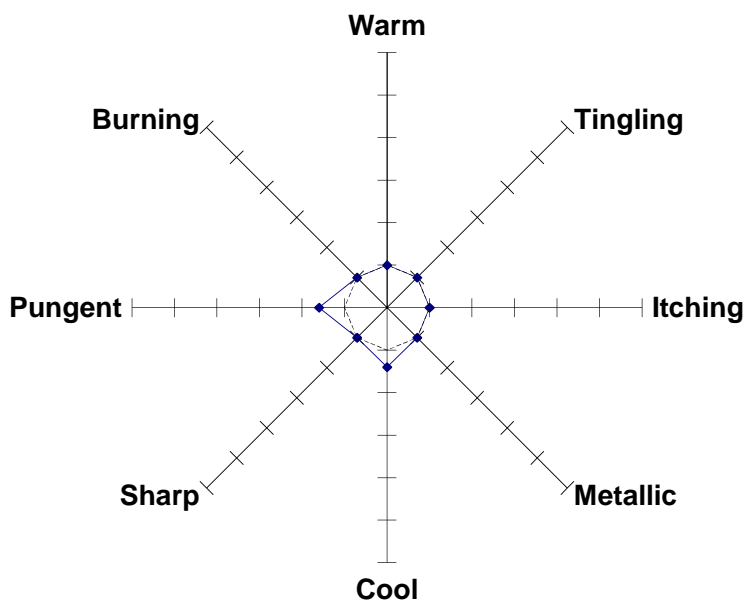
Report No.: 1315001

Project: Bridgeton Sanitary Landfill Air Quality Assessment

Description: \_\_\_\_\_

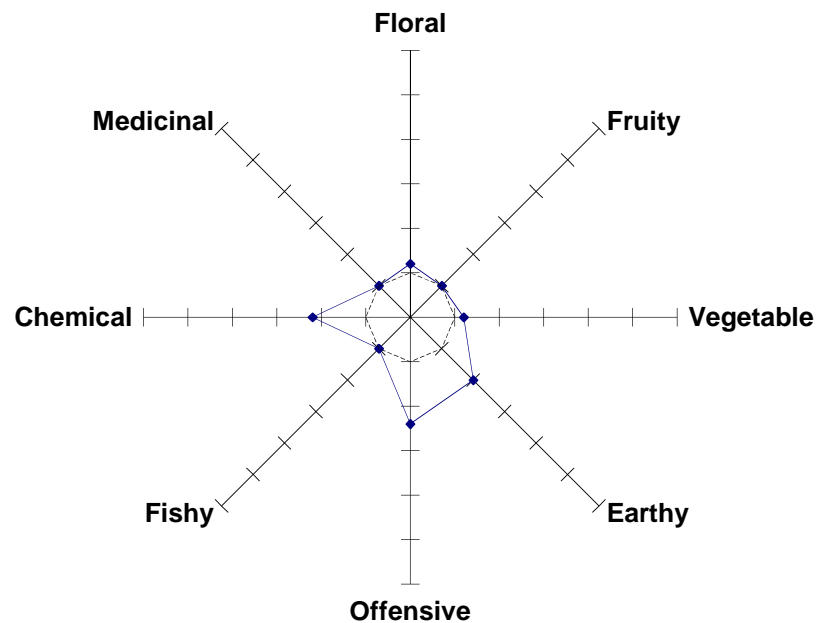
Evaluation Date: 05/30/13

### Sensation Descriptor Graph



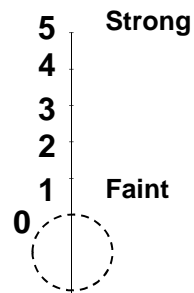
	Average Relative Strength
Warm	0.0
Tingling	0.0
Itching	0.0
Metallic	0.0
Cool	0.4
Sharp	0.0
Pungent	0.6
Burning	0.0

### Odor Descriptor Graph



	Average Relative Strength
Floral	0.2
Fruity	0.0
Vegetable	0.2
Earthy	1.0
Offensive	1.4
Fishy	0.0
Chemical	1.2
Medicinal	0.0

#### KEY



#### Relative Strength

**St. Croix Sensory, Inc.**

**Odor Evaluation Report**

Client: SWAPE

Field No.: BZ-2

Report No.: **1315001**

Project: Bridgeton Sanitary Landfill Air Quality Assessment

Description: \_\_\_\_\_

Evaluation Date: 05/30/13

% of Assessors |\*\*\*\*\*|\*\*\*\*\*|\*\*\*\*\*|\*\*\*\*\*| 100%

- Vegetable \*\*\*\*\*
- Fragrant \*\*\*\*\*
- Chemical \*\*\*\*\*
- Plastic \*\*\*\*\*:
- Vinyl \*\*\*\*\*
- Offensive \*\*\*\*\*
- Sour \*\*\*\*\*
- Earthy \*\*\*\*\*:
- Musty \*\*\*\*\*
- Stale \*\*\*\*\*

Client: SWAPE

Field No.: BZ-2

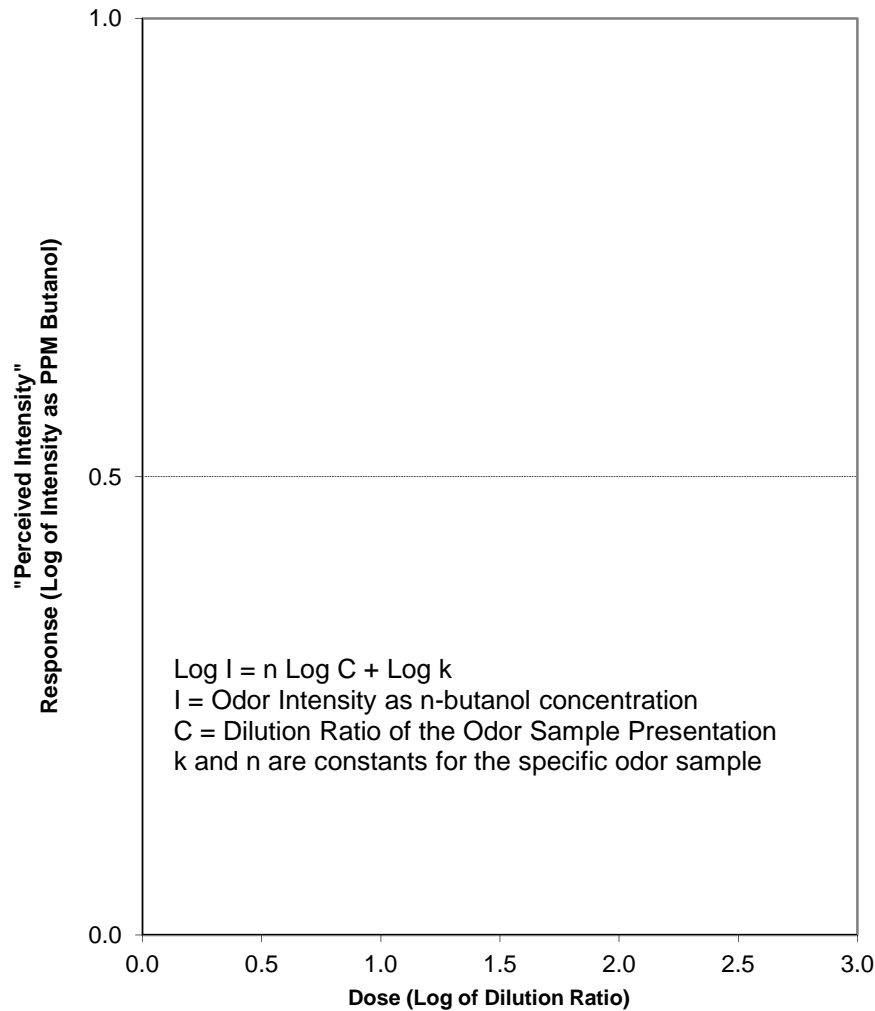
Report No.: 1315001

Project: Bridgeton Sanitary Landfill Air Quality Assessment

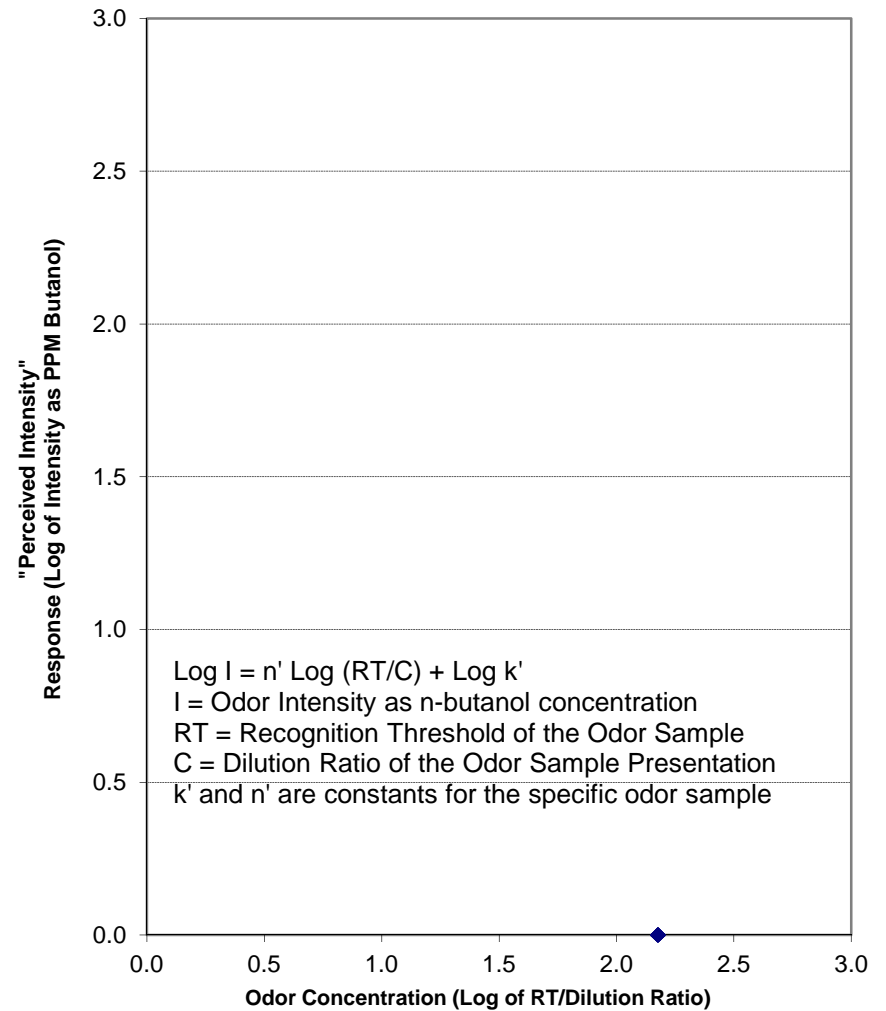
Description: \_\_\_\_\_

Evaluation Date: 05/30/13

### Dose-Response



### Dose-Response as Power Law



Client: SWAPE

Field No.: U-2

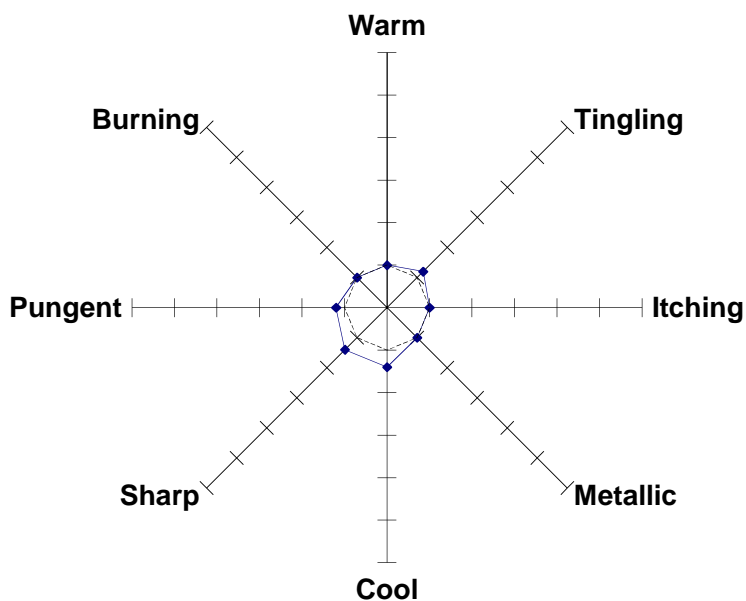
Report No.: 1315001

Project: Bridgeton Sanitary Landfill Air Quality Assessment

Description: \_\_\_\_\_

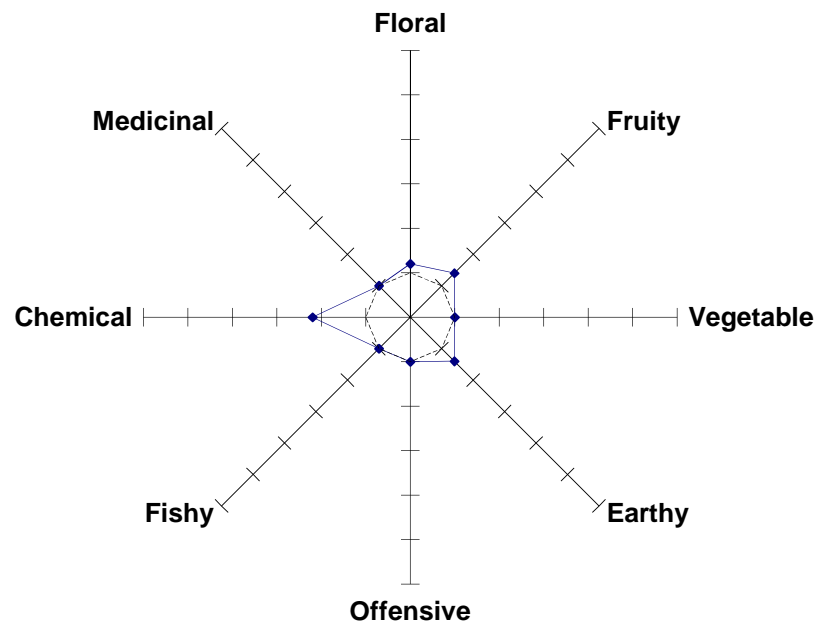
Evaluation Date: 05/30/13

### Sensation Descriptor Graph



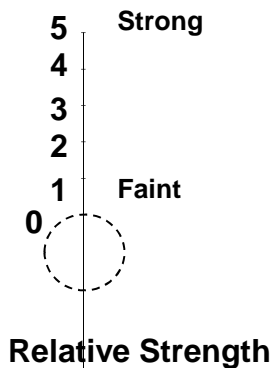
	Average Relative Strength
Warm	0.0
Tingling	0.2
Itching	0.0
Metallic	0.0
Cool	0.4
Sharp	0.4
Pungent	0.2
Burning	0.0

### Odor Descriptor Graph



	Average Relative Strength
Floral	0.2
Fruity	0.4
Vegetable	0.0
Earthy	0.4
Offensive	0.0
Fishy	0.0
Chemical	1.2
Medicinal	0.0

#### KEY



**St. Croix Sensory, Inc.**

**Odor Evaluation Report**

Client: SWAPE

Field No.: U-2

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Project: Bridgeton Sanitary Landfill Air Quality Assessment

Description: \_\_\_\_\_

Evaluation Date: 05/30/13

% of Assessors |\*\*\*\*\*|\*\*\*\*\*|\*\*\*\*\*|\*\*\*\*\*| 100%

- Fruity \*\*\*\*\*
- Fragrant \*\*\*\*\*
- Chemical \*\*\*\*\*
- Kerosine \*\*\*\*\*
- Cleaning fluid \*\*\*\*\*
- Plastic \*\*\*\*\*
- Solvent \*\*\*\*\*
- Earthy \*\*\*\*\*



Client: SWAPE

Field No.: U-2

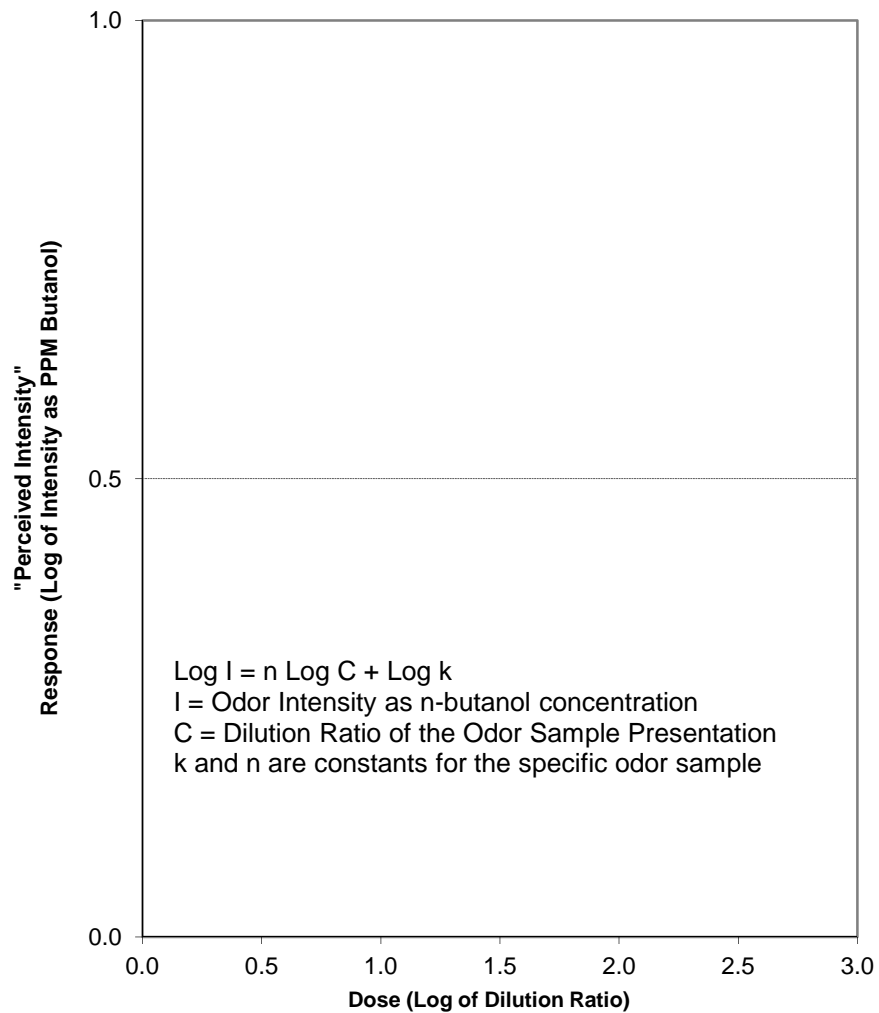
Report No.: 1315001

Project: Bridgeton Sanitary Landfill Air Quality Assessment

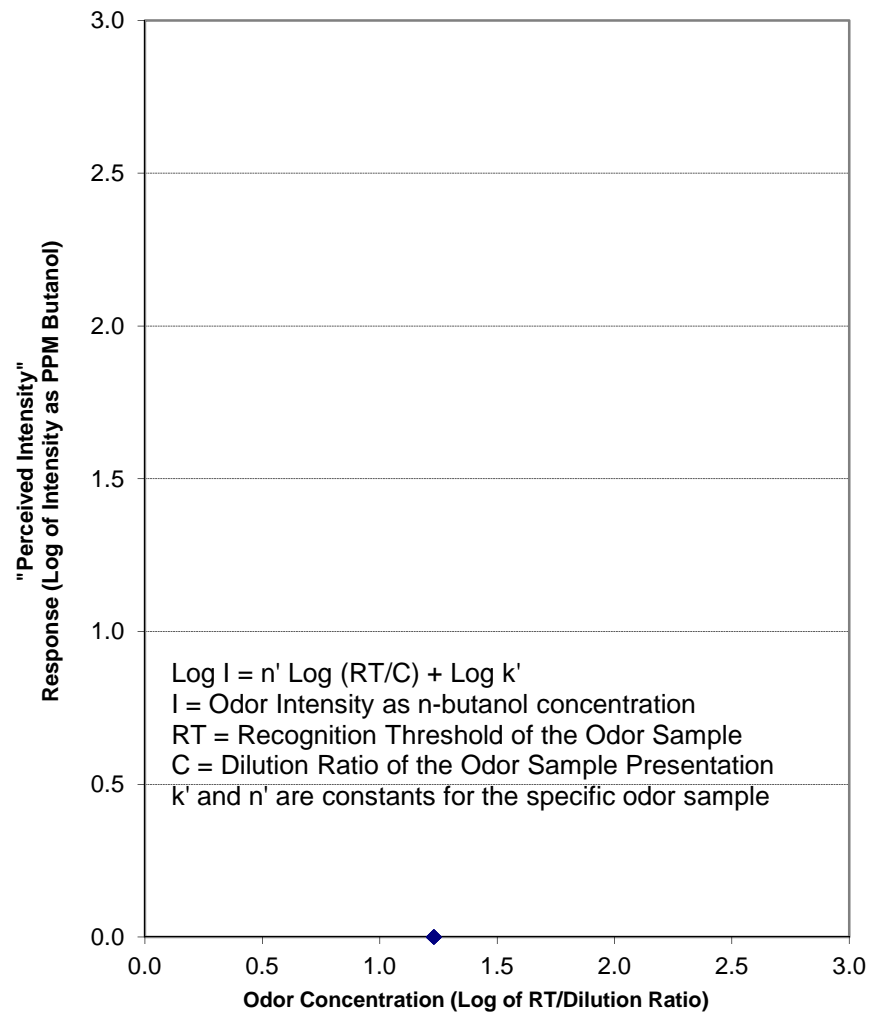
Description: \_\_\_\_\_

Evaluation Date: 05/30/13

### Dose-Response



### Dose-Response as Power Law



Client: SWAPE

Field No.: D-2

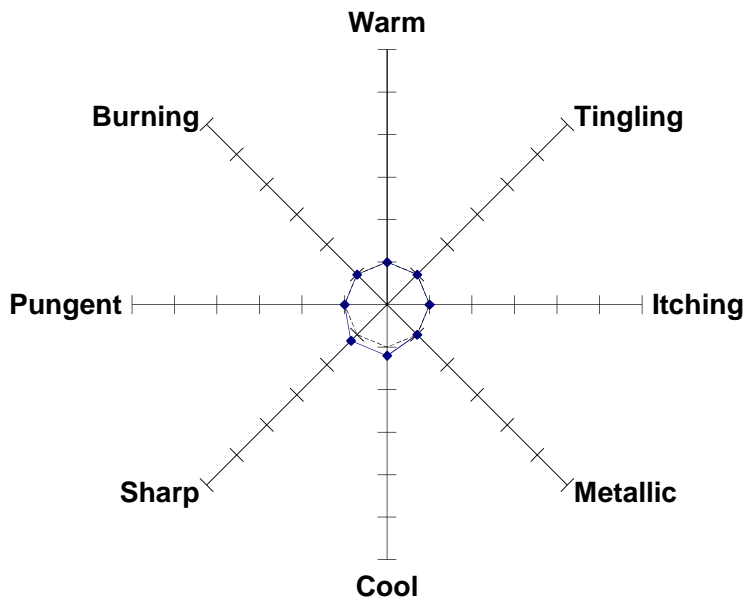
Report No.: 1315001

Project: Bridgeton Sanitary Landfill Air Quality Assessment

Description: \_\_\_\_\_

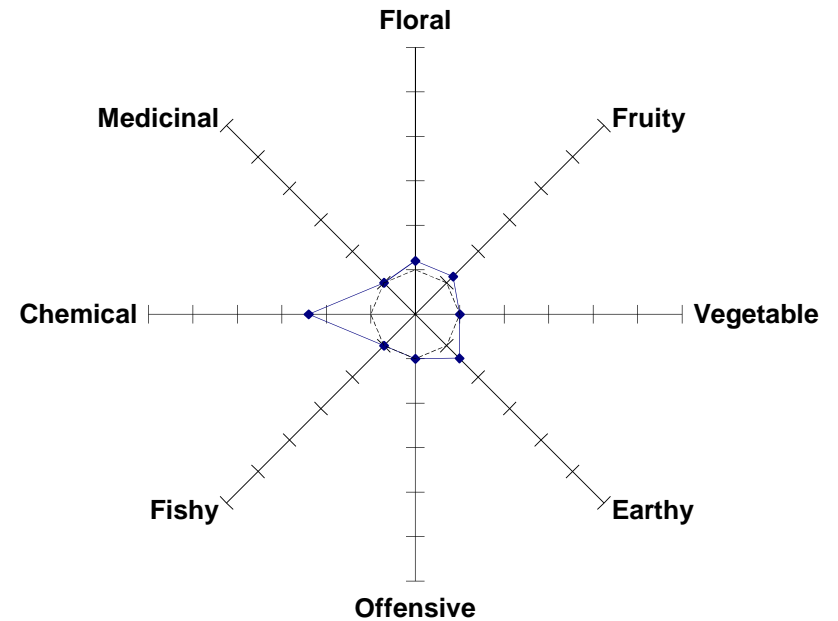
Evaluation Date: 05/30/13

**Sensation Descriptor Graph**



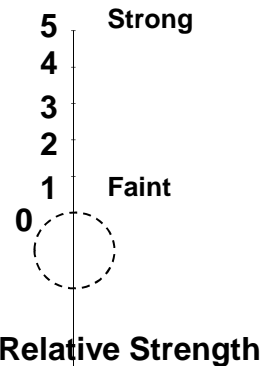
	Average Relative Strength
Warm	0.0
Tingling	0.0
Itching	0.0
Metallic	0.0
Cool	0.2
Sharp	0.2
Pungent	0.0
Burning	0.0

**Odor Descriptor Graph**



	Average Relative Strength
Floral	0.2
Fruity	0.2
Vegetable	0.0
Earthy	0.4
Offensive	0.0
Fishy	0.0
Chemical	1.4
Medicinal	0.0

**KEY**



**St. Croix Sensory, Inc.**

**Odor Evaluation Report**

Client: SWAPE

Field No.: D-2

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Description: \_\_\_\_\_

Evaluation Date: 05/30/13

% of Assessors |\*\*\*\*\*|\*\*\*\*\*|\*\*\*\*\*|\*\*\*\*\*| 100%

Fruity \*\*\*\*\*  
Fragrant \*\*\*\*\*  
Cleaning fluid \*\*\*\*\*  
Plastic \*\*\*\*\*  
Solvent \*\*\*\*\*  
Vinyl \*\*\*\*\*  
Stale \*\*\*\*\*  
Swampy \*\*\*\*\*

Client: SWAPE

Field No.: D-2

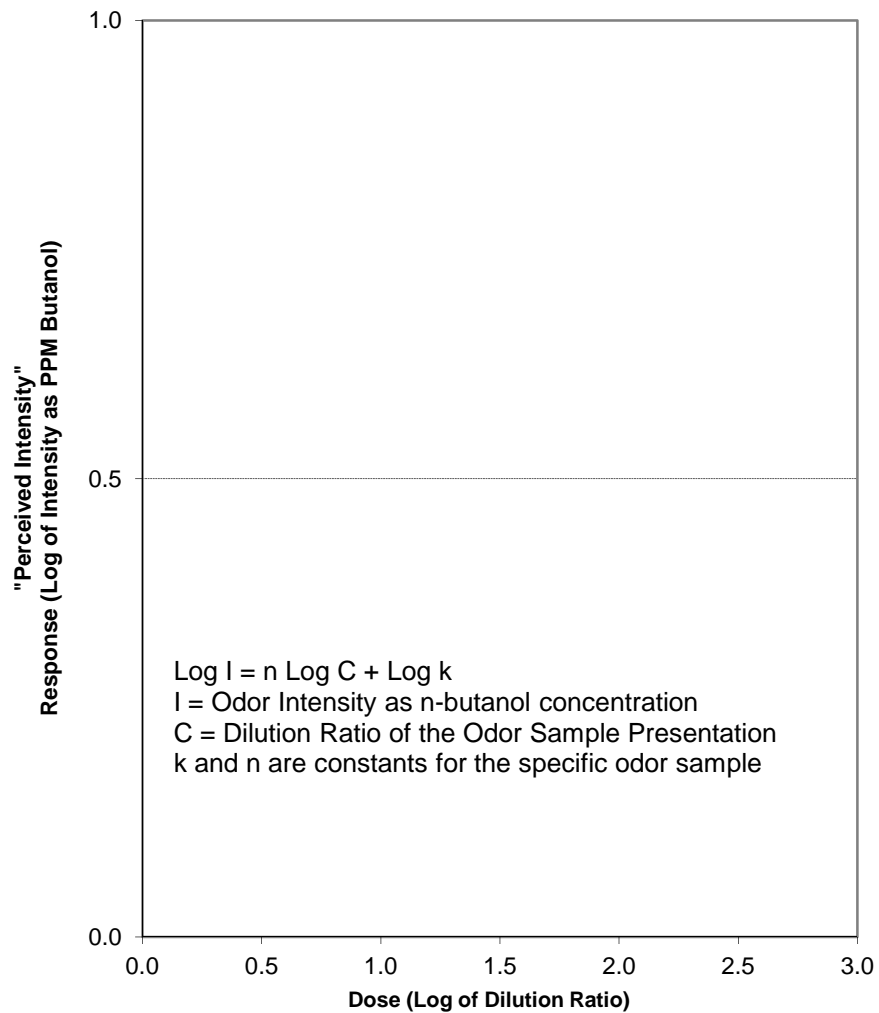
Report No.: 1315001

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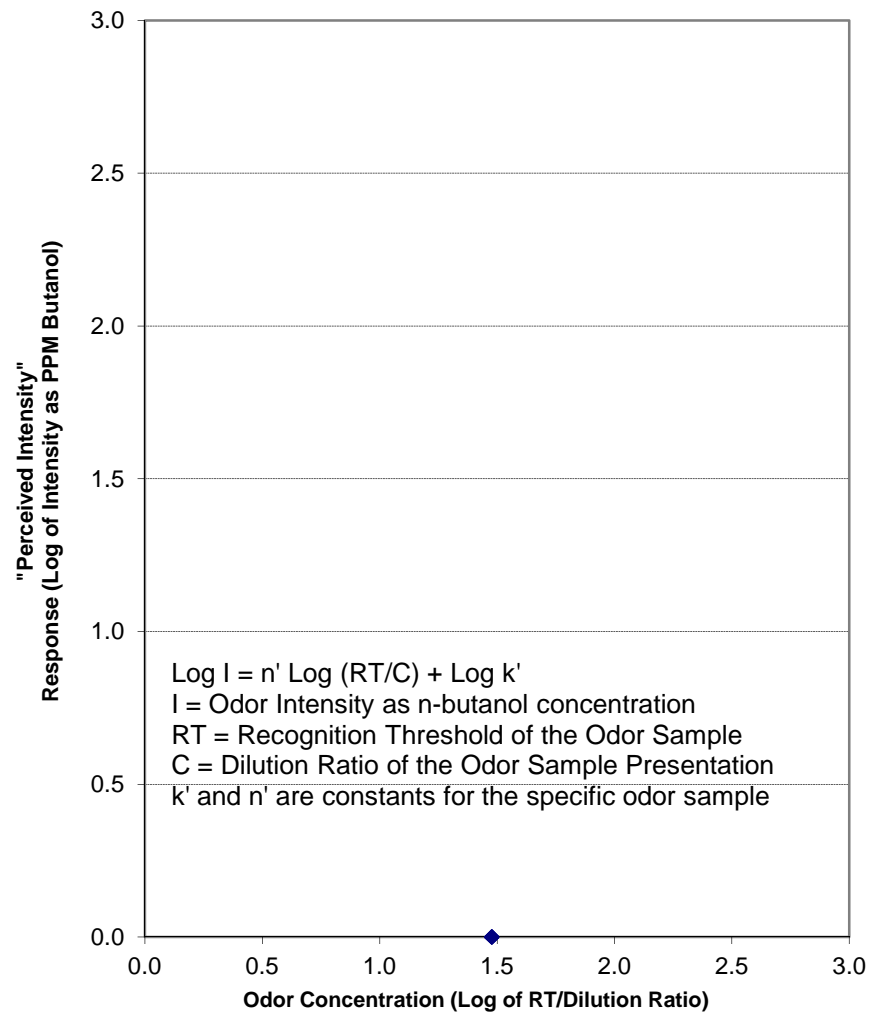
Description: \_\_\_\_\_

Evaluation Date: 05/30/13

### Dose-Response



### Dose-Response as Power Law



**CHAIN OF CUSTODY RECORD / ANALYTICAL REQUEST FORM**

Bridgeton Sanitary Landfill Air Quality Assessment

Client Name: SOIL / WATER AIR PROTECTION ENTERPRISE		Telephone No. / Fax No.: (310) 434-0110 / (310) 434-0011		Date: <b>5/29/13</b>	Page (of) <b>1</b>
Project Manager: PAUL ROSENFELD, PH.D.		<b>REQUESTED TESTS / ANALYSES</b>			
Address: 1640 FIFTH STREET, SUITE 204, SANTA MONICA, CA 90401		Reduced Sulfur Compounds -	ASTM D5504	Alddehydes - EPA TO-11A	Carboxylic Acids -
Project Name and Location: BRIDGETON SANITARY LANDFILL AIR QUALITY ASSESSMENT		HCL - NIOSH 7903	Ammonia - OSHA ID-188	SO2 - OSHA ID-200	HCN - NIOSH 6070
Sampled By: <i>Paul Rosenfeld</i> <i>Paul Rosenfeld</i>		Antines - NIOSH 2010M	Fixed Gases - EPA 3C	PAHs / Dioxins	EPA TO-13A / 9A
LAB ID	SAMPLE ID NUMBER	Type	Date	Time	Odor Evaluation
	U-1		5/29/13	10:22	X
	BZ-1			10:50	X
	D-1			11:10	X
	BZ-2			12:30	X
	U-2			13:07	X
	D-2			13:50	X
<b>Special Instructions / Conditions of Receipt</b> <i>SEE NOTE *</i>					

Requested Turnaround Time: Standard turn-around for all analyses. If possible deliver report within 2 weeks.	QC Requirements: Provide Level IV QC Package for all Analyses.
Relinquished By: <i>Joe Hesse</i>	Received By: <i>Arthur Stone</i>
Date: <b>5/29/13</b>	Date: <b>5/30/13</b>
Time: <b>15:30</b>	Time: <b>10:20</b>
Relinquished By:	Received By:
Date:	Date:
Time:	Time:

**\* SAME EVALUATION AS PREVIOUS SAMPLES.**

SOIL / WATER / AIR PROTECTION ENTERPRISE