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# Memorandum

To: Andrew Prophete (National Grid NY)

From: Brian Skelly

Copy to: Richard Dana and R. Scott Deyette (NYSDEC)

Chris Schroer (EA Engineering) Andrew Rizk (Louis Berger) Stephanie Selmer (NYSDOH)

Dave Boram and Thor Helgason (de maximis)

Ted Leissing (National Grid NY)

Shail Pandya (AECOM)

Ronell Marshall and Clayton John (GEI Consultants, Inc.)

July 5, 2012

Regarding: Weekly Community Air Monitoring Report

Clifton Former MGP Site - Operable Unit 2 (OU-2)

June 16, 2012 through June 22, 2012

### Dear Andrew:

This report includes a summary of data collected during implementation of the Community Air Monitoring Plan (CAMP) at the Clifton Former MGP Site Operable Unit 2 (OU-2) in Staten Island, New York. Data collected are discussed in relation to remediation activities that occurred between June 16 and June 22, 2012.

There were no fifteen-minute exceedances of the Total Volatile Organic Compounds (TVOC), Particulate Matter (PM-10) [dust], or odor action levels associated with ground intrusive site activities during this reporting period. There were some elevated levels of dust measured that were attributed to onsite activities which was addressed by Sevenson applying water to the site roadways, or to GeoCon bentonite loading operations the batch plant which was mitigated by applying water to the hopper loading area. The tables and figures accompanying this report summarize air monitoring results related to the action levels described by the CAMP Work Plan (AECOM, 2011 and GEI, 2012).

The following information is summarized in this report:

- Site construction activities
- Daily maximum 15-minute average concentrations of TVOC and PM-10 (dust) at each fixed station

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- Elevated concentrations (if any)
- Meteorological data

### **Site Construction Activities**

Construction activities during this reporting period included:

- Backfilled trench with slurry
- Deconned load out dump trucks
- Excavated along Willow Avenue for slurry wall installation
- Excavated along Willow Avenue for tar separator
- Load out soil from site via tarped dumptrucks
- Mixed slurry at batch plant in OU-2
- Mixed soil inside the Temporary Fabric Structure (TFS) with kiln-dust
- Operated mist odor suppressant along Willow Avenue
- Received delivery of bentonite
- Set up jersey blocks in exclusion zone
- Stockpiled clean soil
- Stockpiling scrap metal from demolition
- Surveyed site on Willow Avenue
- Transported soil from excavation operations along Willow Avenue to the TFS via dump trucks

### **Data collection**

Real-time fixed station monitoring for TVOC and PM-10 (dust) was performed on the OU-2 site perimeter at six locations (FAM#1 through FAM#6). FAM#3 was located in the northeast corner of the 40 Willow Avenue Property during the week. Due to work progressing along Willow Avenue, FAM#4 was temporarily relocated on Operable Unit 1 along Willow Avenue west of the wastewater treatment plant near the brick buildings. Four AirLogics Classic stations equipped with gas chromatographs (GCs) were operated at FAM#2, FAM#3, FAM#4, and FAM#5 and two AirLogics Light stations were operated at FAM#1 and FAM#6.

Table 1 summarizes the target concentrations for action levels and Site Conditions described by the CAMP. Table 2 provides a daily summary of maximum fifteen-minute average ambient air concentrations from each station. The daily reports appended to this report depict more detailed and time-specific comparison of upwind and downwind measurements and site activities that is needed to determine the Site Condition.

Upwind and downwind ambient air verification samples were collected on June 20, 2012. Meteorological data collected at the on-site weather station are included in this report as Figures

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1 through 4 which show a directional wind rose for the period and temperature, relative humidity, and wind speed time series for the period.

If you have any questions regarding the information in this report, please contact me.

### References

AECOM (2011). Appendix A of CERP Community Air Monitoring Plan (CAMP) Former Manufactured Gas Plant Operable Unit - 2 Remediation. Clifton, New York. August.

GEI Consultants, Inc (2012). Community Air Monitoring Plan: Clifton Former Manufactured Gas Plant Site – Operable Unit 2, Borough of Staten Island, New York. February.

New York State Department of Environmental Conservation (2010). DER-10 / Technical Guidance for Site Remediation and Investigation. Washington: Division of Environmental Remediation, December. Appendix 1-A. May.

# Table 1 - Action Levels and Site Conditions Community Air Monitoring Program Clifton Former MGP Site Operable Unit 2 Borough of Staten Island, New York

	Alert Level	Action Level	Site Condition 1	Site Condition 2	Site Condition 3
TVOC (15-minute)	3.7 ppm	5.0 ppm	< 3.7 ppm	≥ 3.7 ppm, < 5.0 ppm	≥ 5.0 ppm
TVOC (1-minute)	NA	25 ppm	< 25 ppm	NA	≥ 25 ppm
PM-10 (15-minute)	100 ug/m <sup>3</sup>	150 ug/m <sup>3</sup>	< 100 ug/m <sup>3</sup>	≥ 100 ug/m³, < 150 ug/m³	≥ 150 ug/m <sup>3</sup>
Odor (15-minute)	Odors / Complaints	NA	No odors	NA	3 (n-butanol)
HCN (15-minute)	Visual Detection	NA	< 0.6 ppm	≥ 0.6 ppm (4-gas meter)	≥ 0.6 ppm (Draeger tube)
Naphthalene (15-minute)	NA	NA	< 440 ug/m <sup>3</sup>	≥ 330 ug/m³, < 440 ug/m³	≥ 440 ug/m <sup>3</sup>

#### Notes:

ug/m<sup>3</sup> - micrograms per cubic meter

ppmv - parts per million by volume

TVOC - total volatile organic compounds

PM-10 - particulate matter (i.e. dust) less than 10 microns in diameter

HCN - hydrogen cyanide

NA - not applicable



<sup>&</sup>lt;sup>1</sup> Alert Levels are not established by the NYSDOH or NYSDEC and are internally established concentration levels for total volatile organic compounds. Alert Levels are set below the levels established by the NYSDOH so that actions can be taken prior to exceeding a NYSDOH threshold. An Alert Level serves as a screening tool to trigger contingent measures if necessary, to assist in minimizing off-site transport of contaminants during remedial activities

<sup>&</sup>lt;sup>2</sup> Response Levels and Action Levels are not defined in Appendix 1A of the New York State Department of Environmental Conservation *DER-10 / Technical Guidance for Site Investigation and Remediation* (NYSDEC, 2010)

# Table 2. Daily Maximum 15-Minute Average Concentrations of TVOC and PM-10 Community Air Monitoring Program Clifton Former MGP Site Operable Unit 2 Borough of Staten Island, New York

			TV	ОС			PM-10						
Date			(pp	m)			(ug/m³)						
	FAM#1	FAM#2	FAM#3	FAM#4	FAM#5	FAM#6	FAM#1	FAM#2	FAM#3	FAM#4	FAM#5	FAM#6	
6/16/2012	0.3	0.2	0.2	0.4	0.1	0.3	68	38	6	7	0	45	
6/17/2012	0.2	0.1	0.1	0.1	0.1	0.1	48	19	3	3	0	30	
6/18/2012	0.2	0.1	0.1	0.3	0.1	0.1	86	38	3	1	80	67	
6/19/2012	0.3	0.1	0.1	0.3	0.0	0.1	150	21	3	1	1	34	
6/20/2012	0.1	0.1	0.1	0.8	0.2	0.1	103	51	5	27	75	126	
6/21/2012	0.1	0.2	0.1	0.2	0.1	0.1	107	85	5	24	5	93	
6/22/2012	0.2	0.1	0.2	0.4	0.4	0.1	142	67	6	40	23	142	
Average	0.2	0.1	0.1	0.4	0.1	0.2	101	46	4	15	26	77	
Maximum	0.3	0.2	0.2	0.8	0.4	0.3	150	85	6	40	80	142	

### Notes:

FAM - fixed air monitoring station location

ug/m<sup>3</sup> - micrograms per cubic meter

ppmv - parts per million by volume

TVOC - total volatile organic compounds

PM-10 - particulate matter (i.e. dust) less than 10 microns in diameter



# Figures 1-4 Meteorological Data Weekly Community Air Monitoring Report Clifton Former MGP Site Operable Unit 2 Borough of Staten Island, New York

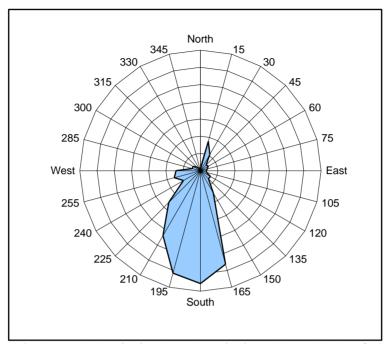


Figure 1. Wind rose for the period 06/16/12 through 06/22/12 collected during CAMP implementation at the Clifton Former MGP Site - Operable Unit 2. Wind direction data used to create the wind rose were calculated from 1-minute data.

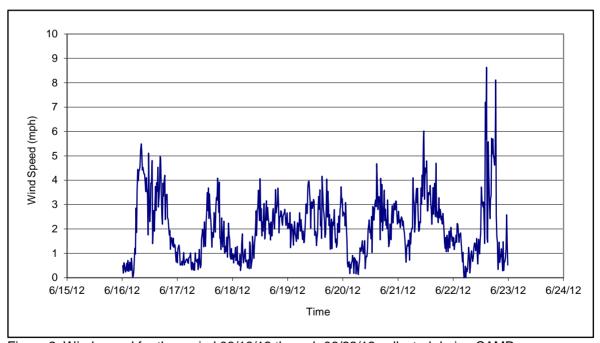


Figure 2. Wind speed for the period 06/16/12 through 06/22/12 collected during CAMP implementation at the Clifton Former MGP Site - Operable Unit 2. Data are 15-minute averages.

# Figures 1-4 Meteorological Data Weekly Community Air Monitoring Report Clifton Former MGP Site Operable Unit 2 Borough of Staten Island, New York

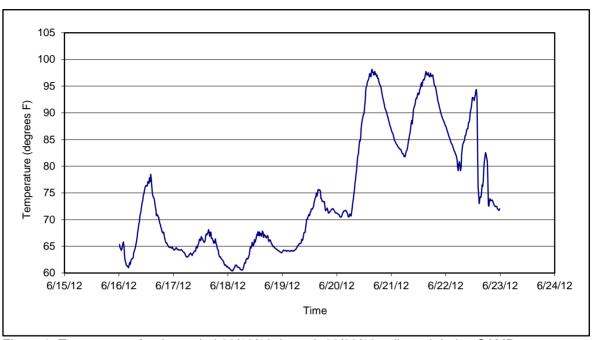


Figure 3. Temperature for the period 06/16/12 through 06/22/12 collected during CAMP implementation at the Clifton Former MGP Site - Operable Unit 2. Data are 15-minute averages.

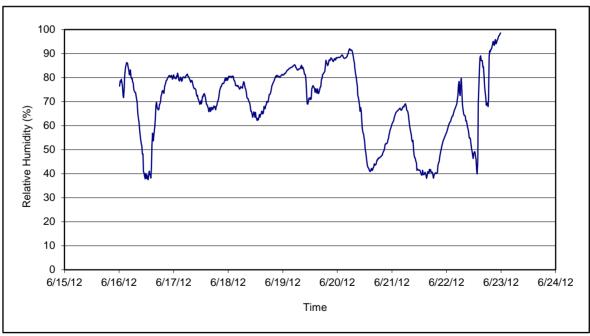


Figure 4. Relative humidity for the period 06/16/12 through 06/22/12 collected during CAMP implementation at the Clifton Former MGP Site - Operable Unit 2. Data are 15-minute averages.

	Syste	m Operation	s			General Observations										
		mpling Date	6/18/	/2012	General We	eather C	onditions:									
	Systen	n Start Time	contir	nuous	Clear ~6	1°F- ~67	°F									
	Syster	m Stop Time	contir	nuous												
	Total Hr	s Monitored	2	24	General De	scription	of Site Activities:									
					Health &	Safety M	Meeting		Stockpiled of	lean soil		Backfilled trench with slurry				
	System	Calibrations	C	)k	Continuous Air Monitoring					Deconned load out dump trucks						
	(1	Γime/Status)	0620-	-0915	Stockpilir	ng scrap	metal from demolit	ion	Load out so	il from site via t	arped dumptrucks					
					Mixed slu	ırry at ba	tch plant in OU-2	Surveyed site on Willow Avenue								
					Excavate	d along	Willow Avenue		Mixed soil inside the Temporary Fabric Structure (TFS) with kiln-dust							
					Operated	l mist od	or suppressant alo	ng Willow Avenue	Transported	l soil from exca	vation operations along '	Willow Avenue to the TFS via dump trucks				
					# of				15-	Minute						
Date	Alert		Start	End	# 01 15-min	Wind	Upwind/	Upwind	Downw	ind-Upwind	Site Condition	Site Activity During the Period	Actions Taken			
Date	Trigger	Station	Time	Time	Periods	Dir.	Downwind	Station(s)		entration	Site Condition	(if applicable)	Actions Taken			
					1 011000				Min**	Max**						
6/18/2012	None			ļ		ļ							No excedances			
						ļ										
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Comments:				l		I.	I.	I.	1	ļ	L	<u>'</u>				
						PM-10	(15-min)	TVOC (15-m	in)	T	VOC (1-min)	Odor Intensity (15-min)				
			Al	lert Limit:		100	ug/m³	3.7 ppm			-	- · · · · · · · · · · · · · · · · · · ·				
	Action Limit: 150 ug/m <sup>3</sup>					5.0 ppm			25 ppm	3 (n-butanol scale)						
Notes:																
* Wind di	rections ar	e presented l	by octant	(i.e. N, 1	NE, E, SE, S	SW, W,	NW).		PM-10 - pai	ticulate matter	(i.e. dust) less than 10 m	icrons in diameter				
		wnwind conc								l volatile organi						
		nitoring statio			•	•			NA - not ap		•					
ug/m³ - m	nicrograms	per cubic me	eter						ND - no dat			Field Representative:	R. Marshall			
ppmv - pa	arts per mil	llion by volum	ne									Date:				
												-	Page 1 of _ <u>1</u>			



	Syste	m Operation				General Observations									
		ampling Date	6/19/		General We										
		m Start Time		nuous	Clear ~65	5°F- ~67°	°F								
		m Stop Time		nuous											
	Total H	rs Monitored	2	24			of Site Activities:		Stockpiled clean soil Backfilled trench with slurry						
	Health & Safety Meeting System Calibrations Ok Continuous Air Monitoring											Backfilled trench with slurry			
	-,									oad out dump to	rucks arped dumptrucks	Set up jersey blocks in exclusion zone Received delivery of bentonite			
	(	rime/Status)	0043	-0906	Stockpiling scrap metal from demolition Mixed slurry at batch plant in OU-2					te on Willow Av		Received delivery of bentonite			
							Willow Avenue				orary Fabric Structure (*	FS) with kiln-dust			
							or suppressant alor	a Willow Avenue				Willow Avenue to the TFS via dump trucks			
									<del> </del>	Minute	1				
	Alert		Start	End	# of 15-min	Wind	Upwind/	Upwind	Downwind-Upwind		Site Activity During the Period				
Date	Trigger	Station	Time	Time	15-min Periods	Dir.	Downwind	Station(s)	Conc	entration	Site Condition	(if applicable)	Actions Taken		
					Pellous				Min**	Max**					
6/19/2012	PM-10	FAM#1	9:14	9:27	14	SSW	DW	FAM#6	85	135	2	Batchplant operations	Notified construction manager Water was sprayed		
6/19/2012	PM-10	FAM#1	10:41	10:46	7	SSE	CW	N/A	110	113	1	Vehicle traffic	Notified construction manager Water was sprayed		
									1						
•															
Comments	:														
	PM-10 (15-min) TVC							TVOC (15-mi	in)	T'	VOC (1-min)	Odor Intensity (15-min)			
								3.7 ppm			-	-			
			Act	ion Limit:		150	ug/m³	5.0 ppm			25 ppm	3 (n-butanol scale)			
** Upwin	d minus do	re presented wnwind cond	entration	s are a ti					TVOC - tota	l volatile organi	(i.e. dust) less than 10 r	nicrons in diameter			
		nitoring statio		n					NA - not app			Field December	D. Massakall		
ug/m° - n	ug/m³ - micrograms per cubic meter								ND - no data available Field Representative: R. Marshall						



ppmv - parts per million by volume

6/19/2012

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	Syste	m Operation	s								General Observations				
	Sa	mpling Date	6/20/	2012	General We	eather Co	onditions:								
		n Start Time	conti		Clear ~71	l°F- ~98°	F								
	,	n Stop Time		nuous											
	Total H	s Monitored	2	4			of Site Activities:		Stockpiled clean soil Backfilled trench with slurry						
	0	0 11	c	u.	Health &	,	Ü					Backfilled trench with slurry			
	,	Calibrations Time/Status)	0720		Continuo			0.0	Deconned load out dump trucks						
	(	ime/Status)	0720	-0916	Stockpiling scrap metal from demolition Mixed slurry at batch plant in OU-2 Excavated along Willow Avenue					Load out soil from site via tarped dumptrucks Surveyed site on Willow Avenue					
											orary Fabric Structure (T	FS) with kiln-dust			
							r suppressant alor	ng Willow Avenue				Villow Avenue to the TFS via dump trucks			
										Minute	T .	·			
Date	Alert	Station	Start	End	# of 15-min	Wind	Upwind/	Upwind	Downwi	nd-Upwind	Site Condition	Site Activity During the Period	Actions Taken		
Date	Trigger	Station	Time	Time	Periods	Dir.	Downwind	Station(s)		entration	Site Condition	(if applicable)	Actions Taken		
					1 CHOGS				Min**	Max**					
6/20/2012	PM-10	FAM#1	12:00	12:07	8	NE	UW	N/A	100	103	1	Construction vehicles moving along the terrain	Notified construction manager Water was sprayed		
6/20/2012	PM-10	FAM#1	15:12	15:13	2	NE	UW	N/A	101	101	1	Construction vehicles moving along the terrain	Notified construction manager Water was sprayed		
6/20/2012	PM-10	FAM#6	10:13	10:27	15	ESE	DW	FAM#4	98	100	2	Construction vehicles moving along the terrain	Notified construction manager Water was sprayed		
6/20/2012	PM-10	FAM#6	11:29	11:42	14	NNE	DW	FAM#1	16	30	1	Construction vehicles moving along the terrain	Notified construction manager Water was sprayed		
Comments:															
	<b>PM-10 (15-min)</b> Alert Limit: 100 ug/m³							TVOC (15-mi	in)	T	VOC (1-min)	Odor Intensity (15-min)			
				ion Limit:		150 (		5.0 ppm			25 ppm	3 (n-butanol scale)			
** Upwind	l minus do	e presented I wnwind conc nitoring statio	entration:	s are a ti						volatile organi	(i.e. dust) less than 10 m ic compounds	icrons in diameter			
ug/m³ - m	icrograms	per cubic me	ter						ND - no data			Field Representative: Date:	R. Marshall 6/20/2012		



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	Svste	m Operation	ıs					General Observations									
		mpling Date		/2012	General We	eather C	onditions:										
	Syster	m Start Time	conti	nuous	Clear ~89	9°F- ~98	°F										
	Syster	m Stop Time	conti	nuous													
	Total Hi	rs Monitored	2	24	General De	scription	of Site Activities:		Excavated a	alona Willow Av	enue for tar separator						
					Health &					ench with slurry							
	System	Calibrations	(	)k	Continuo												
		Time/Status)		-0821			metal from demoliti	on	Deconned load out dump trucks Load out soil from site via tarped dumptrucks								
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					n at tar separator e			te on Willow Av							
								slurry wall installation			orary Fabric Structure (TFS)	with kiln-dust					
							or suppressant alor					ow Avenue to the TFS via dump trucks					
			1	1	<u> </u>		 	.9		Minute	g						
	Alert		Start	End	# of	Wind	Upwind/	Upwind		ind-Upwind		Site Activity During the Period					
Date	Trigger	Station	Time	Time	15-min	Dir.	Downwind	Station(s)		entration	Site Condition	(if applicable)	Actions Taken				
	990.		1	10	Periods	J	20111111111	Ctation(o)	Min**	Max**		(ii applicable)					
0/04/0040	DM 40	FAM#1	44.00	11:52	14	NNW	UW	N/A		107	1	Val. in the Co	Notified construction manager				
6/21/2012	PM-10	FAIVI#1	11:39	11:52	14	ININVV	UVV	IN/A	104	107	1	Vehicle traffic	Water was sprayed				
													·				
Comments			l .	l	I	l	l .			l .							
Comments	•																
						PM-10	(15-min)	TVOC (15-mi	n)	Т	VOC (1-min)	Odor Intensity (15-min)					
	Alert Limit:						ug/m <sup>3</sup>	3.7 ppm	•	-	- '	-					
	Action Limit: 150 ug/m <sup>3</sup>							5.0 ppm			25 ppm	3 (n-butanol scale)					
Notes:											•						
	rections ar	re presented	by octant	(i.e. N N	IE. E. SE S	SW. W	NW).		PM-10 - nar	ticulate matter (	i.e. dust) less than 10 micro	ons in diameter					
		wnwind cond								l volatile organi							
		nitoring station			000000	pu/10			NA - not ap								
		per cubic m							ND - no dat			Field Representative:	C. John				
-	-	llion by volur										Date:	6/21/2012				
FF P												Date	Page 1 of _1_				
													1 age 1 of _1_				



	Syste	m Operation	าร		General Observations												
	Sa	mpling Date	6/22/	2012	General We	General Weather Conditions:											
	Syster	m Start Time	conti	nuous	Clear ~89°	°F- ~98°F											
	Syster	m Stop Time	conti	nuous													
	Total H	rs Monitored	2	4	General Des	scription of	of Site Activities:		Excavated along Willow Avenue for tar separator								
					Health & S	afety Me	eting		Backfilled trench with slurry								
	System	Calibrations	C	)k	Continuou	s Air Mon	itoring		Deconned load out dump trucks								
	(Time/Status) 0630-0821 Stockpiled scrap metal from demolition								Load out soil from site via tarped dumptrucks								
					Operated	hoe-ram a	at tar separator ex	cavation	Surveyed si	te on Willow Av	enue						
					Excavated	l along W	illow Avenue for sl	urry wall installation	Mixed soil in	side the Tempo	orary Fabric Structure (TFS	) with kiln-dust					
					Operated	mist odor	suppressant along	Willow Avenue	Transported	soil from excav	vation operations along Wil	ow Avenue to the TFS via dump trucks					
					# of				15-	Minute							
Date	Alert	Station	Start	End	# 01 15-min	Wind	Upwind/	Upwind	Downwind-Upwind		Site Condition	Site Activity During the Period	Actions Taken				
Date	Trigger	Station	Time	Time	Periods	Dir.	Downwind	Station(s)	Conc	entration	Site Condition	(if applicable)	Actions Taken				
					renous				Min**	Max**							
6/22/2012	PM-10	FAM#1	6:39	9:22	164	NNE	UW	N/A	100	142	1	Construction vehicles moving	Notified construction manager				
6/22/2012	PIVI-10	FAIVI#1	6:39	9:22	104	ININE	UVV	N/A	100	142	1	along the terrain	Water was sprayed				
6/22/2012	PM-10	FAM#1	10:34	13:14	161	SSE	DW/CW	FAM#2	43	85	1	Construction vehicles moving	Notified construction manager				
0/22/2012	PIVI-10	FAIVI#1	10.34	15.14	101	SSE	DW/CW	FAIVI#2	43	00	Į.	along the terrain	Water was sprayed				
6/22/2012	PM-10	FAM#1	13:39	13:58	20	SSW	CW	N/A	101	109	1	Construction vehicles moving	Notified construction manager				
0/22/2012	PIVI-10	FAIVI# I	13.39	13.36	20	3311	CVV	IN/A	101	109	ļ.	along the terrain	Water was sprayed				
6/22/2012	PM-10	FAM#6	4:08	4:19	12	SSW	CW/UW	N/A	100	105	1	None	None. Non working hours				
6/22/2012	PM-10	FAM#6	4:52	5:28	37	WNW	CW/UW	N/A	101	107	1	None	None. Non working hours				
6/22/2012	PM-10	FAM#6	5:34	6:20	47	SSW	CW/UW	N/A	100	123	1	None	None. Non working hours				
6/22/2012	PM-10	FAM#6	6:49	6:54	6	W	CW/UW	N/A	100	101	1	None	None. Non working hours				
6/22/2012	PM-10	FAM#6	7:02	7:24	23	SSW	CW/UW	N/A	100	105	1	None	None. Site activities had not yet begun				
6/22/2012	PM-10	FAM#6	8:00	8:14	15	ENE	DW	FAM#1	<0	<0	1	Construction vehicles moving	Notified construction manager				
6/22/2012	PIVI-10	FAIVI#6	8:00	8:14	15	EINE	DW	FAIVI#1	<0	<0	1	along the terrain	Water was sprayed				
6/22/2012	PM-10	FAM#6	8:38	8:45	7	ENE	DW	FAM#1	<0	<0	1	Construction vehicles moving	Notified construction manager				
6/22/2012	PIVI-10	FAIVI#6	8:38	8:45	,	EINE	DW	FAIVI#1	<0	<0	1	along the terrain	Water was sprayed				
6/22/2012	PM-10	FAM#6	8:47	8:50	4	NE	DW	FAM#1	<0	<0	1	Construction vehicles moving	Notified construction manager				
0/22/2012	F IVI- IU	r Alvi#0	0.47	5.50	4	INL	DVV	r Alvi# i	ν0	70	!	along the terrain	Water was sprayed				
6/22/2012	PM-10	FAM#6	10:21	10:48	28	ENE	DW	FAM#1	<0	19	1	Construction vehicles moving	Notified construction manager				
0/22/2012	F IVI- IU	r Alvi#0	10.21	10.40	20	LINE	DVV	r Alvi# i	ν0	19	!	along the terrain	Water was sprayed				
6/22/2012	PM-10	FAM#6	11:10	11:24	15	ESE	DW	FAM#2	66	72	1	Construction vehicles moving	Notified construction manager				
0/22/2012	F IVI- IU	FAIVI#0	11.10	11.24	10	LOL	DVV	L'AINI#Z	00	12	!	along the terrain	Water was sprayed				
6/22/2012	PM-10	FAM#6	11:30	11:34	5	s	DW	FAM#4	70	49	1	Construction vehicles moving	Notified construction manager				
0/22/2012	1 IVI-10	1 Alviii O	11.50	11.54	Ü		DW	1 Alvin-4	70	43	'	along the terrain	Water was sprayed				
6/22/2012	PM-10	FAM#6	11:39	11:40	2	SE	DW	FAM#2	49	49	1	Construction vehicles moving	Notified construction manager				
0/22/2012	1 IVI-10	1 Alviii O	11.55	11.40	-	OL.	DW	1 AWWZ	43	43	'	along the terrain	Water was sprayed				
6/22/2012	PM-10	FAM#6	11:43	12:25	43	SSW	DW	FAM#4	49	95	1	Construction vehicles moving	Notified construction manager				
0/22/2012	1 IVI-10	1 Alvino	11.40	12.20	.0	0011	DW	1 Alvin-4	40	33	'	along the terrain	Water was sprayed				
6/22/2012	PM-10	FAM#6	12:38	12:38	1	s	DW	FAM#4	67	67	1	Construction vehicles moving	Notified construction manager				
0/22/2012	1 141 10	17441170	12.00	12.00		Ŭ	D11	1744177	0,	01	'	along the terrain	Water was sprayed				
6/22/2012	PM-10	FAM#6	12:42	12:44	3	SSE	DW	FAM#2	42	43	1	Construction vehicles moving	Notified construction manager				
0,22,2012	7 IVI-10	i Aivi#O	12.72	12.77	Ŭ	OOL	DW	I AIVITZ	72	70	'	along the terrain	Water was sprayed				
6/22/2012	PM-10	FAM#6	12:47	13:05	19	SSE	DW	FAM#2	43	56	1	Construction vehicles moving	Notified construction manager				
5,22,201Z	7 141 10	171111111	12.77	10.00		001	D11	1 / WVII/2	-10	55	'	along the terrain	Water was sprayed				
6/22/2012	PM-10	FAM#6	13:50	14:04	15	SSE	DW	FAM#2	46	85	1	Construction vehicles moving	Notified construction manager				
	7 101 10	1 / ((V))// ()	10.00	17.04	ı	002	D11	1 / 441//2	70	00	l '	along the terrain	Water was sprayed				

TVOC (15-min) TVOC (1-min) PM-10 (15-min) Odor Intensity (15-min) Alert Limit: 100 ug/m<sup>3</sup> 3.7 ppm Action Limit: 150 ug/m<sup>3</sup> 5.0 ppm 25 ppm 3 (n-butanol scale)

#### Notes:

 $^{\star}$  Wind directions are presented by octant (i.e. N, NE, E, SE, S, SW, W, NW).

\*\* Upwind minus downwind concentrations are a time specific comparison.

FAM - Fixed Air Monitoring station location ug/m3 - micrograms per cubic meter

ppmv - parts per million by volume

PM-10 - particulate matter (i.e. dust) less than 10 microns in diameter

TVOC - total volatile organic compounds

NA - not applicable

ND - no data available

Field Representative: C. John 6/22/2012 Date:

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