Addendum 4 - VI Mitigation Work Plan

South Dayton Dump and Landfill Site
Moraine, Ohio

Submitted to:
US EPA Region 5
Emergency Response Branch
Cincinnati, OH
OSC Steve Renninger

GHD | 651 Colby Drive Waterloo Ontario N2V 1C2

038443 | 202 | Report No 18 | January 18 2017

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1. Introduction

This addendum to the Vapor Intrusion (VI) Mitigation Work Plan (CRA, May 2013) for the South Dayton Dump and Landfill Site (Site), Moraine, Ohio is intended to update the existing VI Mitigation Work Plan. The purpose of this addendum update is to describe hybrid proficiency sampling for annual monitoring events for buildings in which sub-slab (SS) soil vapor concentrations remain greater than applicable screening levels. The monitoring program will be implemented in 2017 as outlined herein.

With the exception of Building 17, the sub-slab depressurization systems (SSDSs) in all buildings have been upgraded or modified at least once in response to observed conditions. The dates of SSDS installation and upgrades for all buildings are summarized in Table A below.

Table A Summary of SSDS installation and upgrades

Building	Date of SSDS installation completion	SSDS Upgrade 1	SSDS Upgrade 2	SSDS Upgrade 3
Building 8	8/21/2013	11/27/2013	2/5/2016	Not Applicable
Building 9	9/30/2013	2/5/2016	Not Applicable	
Building 12 – Overstreet Painting	9/30/2013	12/6/2013	3/6/2014	4/11/2016
Building 12 – S&J Precision	9/30/2013	12/20/2013	3/6/2014	4/7/2016
Building 14	12/20/2013	1/9/2014	3/26/2014	4/6/2016
Building 15	01/09/2014	01/09/2014	03/26/2014	04/06/2016
Building 17	12/18/2013	Not Applicable		
Building 24	8/21/2013	2/13/2016	Not Applicable	

Continued operation and maintenance of the SSDSs is required and includes quarterly system checks and vacuum blower maintenance, as needed.

SS concentrations in Buildings 15 and 17 were less than the Ohio Department of Health (ODH) screening levels in the last sampling event completed in 2016. In July 2015, Building 14 concentrations were less than ODH screening levels for all samples; however, the June 2016 SS concentrations were greater than ODH screening levels, and have increased compared to previous results, including the 2012 pre-mitigation concentrations. United States Environmental Protection Agency (USEPA) and Respondents agree to complete adjustments to the Building 14 SSDS valves in order to obtain optimal vacuum response and complete confirmatory sampling afterwards.

Although the SS concentrations in Buildings 8, 9, and 12 remain greater than ODH screening levels, the concentrations have decreased significantly in comparison to the pre-mitigation results, with the exception of Building 12 - Overstreet Painting[1](see Figures 4.1 to 4.3). On a VI conference call held

[1] The Respondents will complete valve and vacuum adjustments in Building 12 – Overstreet Painting and collect confirmatory samples.

on August 4, 2016, Respondents and USEPA acknowledged that SS concentrations remain greater than ODH screening levels in Buildings 8, 9, and 12. However, there are no vapor-intrusion related indoor air (IA) exceedances in these buildings and the intent of the Removal ASAOC has been met.

USEPA and Respondents agreed that no further modifications to the SSDSs were required in these buildings, with the exception of valve and vacuum adjustments in Building 12 - Overstreet Painting. USEPA requested that the Respondents develop an annual hybrid sampling program that is protective IA for buildings where the SS concentrations remain greater than applicable screening levels (i.e., Buildings 8, 9, and 12). This addendum details the annual hybrid sampling program. This addendum is intended to be used in conjunction with the VI Mitigation Work Plan and is not a stand-alone document.

2. Sampling Activities

2.1 Annual Proficiency Sampling

For annual proficiency sampling events in buildings where the SS concentrations remain greater than applicable screening levels (i.e., Buildings 8, 9, and 12), Respondents will collect IA and SS samples. Respondents propose to collect SS samples to obtain analytical confirmation that IA exceedances (e.g., benzene, xylenes) result from business activities, and not due to vapor intrusion. Based on the continuing and significantly reduction in SS exceedances, Respondents and USEPA agree that additional SSDS modifications will not be required so long as no VI-related indoor air exceedances are identified.

Samples will be collected from the lowest floor in the building; in all cases, this is the main floor of the buildings. An outdoor ambient air sample will be collected concurrently with the IA and SS samples from an upwind location on each building property. The proposed annual proficiency sampling locations were chosen based on the following criteria:

- SS probe locations from which chemical concentrations were greater than ODH screening levels and IA proximity to these locations
- Proximity to occupied spaces (i.e., offices, break rooms, etc.)

Proposed annual sampling locations for all buildings are presented in Table 1, and on Figures 4.1 to 4.7. The USEPA will have the opportunity to approve or modify the proposed locations and may elect to collect split-SS samples or to collect SS or IA samples at other locations.

When SS concentrations in any building has declined to less than ODH screening levels, the Respondents will complete IA sampling only in accordance with Section 4.5.2 of the VI Mitigation Work Plan. The VI Mitigation Work Plan Monitoring Program specifies completion of IA sampling at a subset (20 percent of the operating systems and approved by USEPA prior to scheduling) of the buildings at an annual frequency from the date of SSDS installation, provided the SSDS is still required.

GHD will collect annual proficiency samples in accordance with the existing VI Mitigation Work Plan procedures. Indoor air and SS soil vapor sample collection is addressed in Sections 3.3 and 3.4,

respectively, of the VI Mitigation Work Plan. Sample analysis is addressed in Section 3.7 of the VI Mitigation Work Plan.

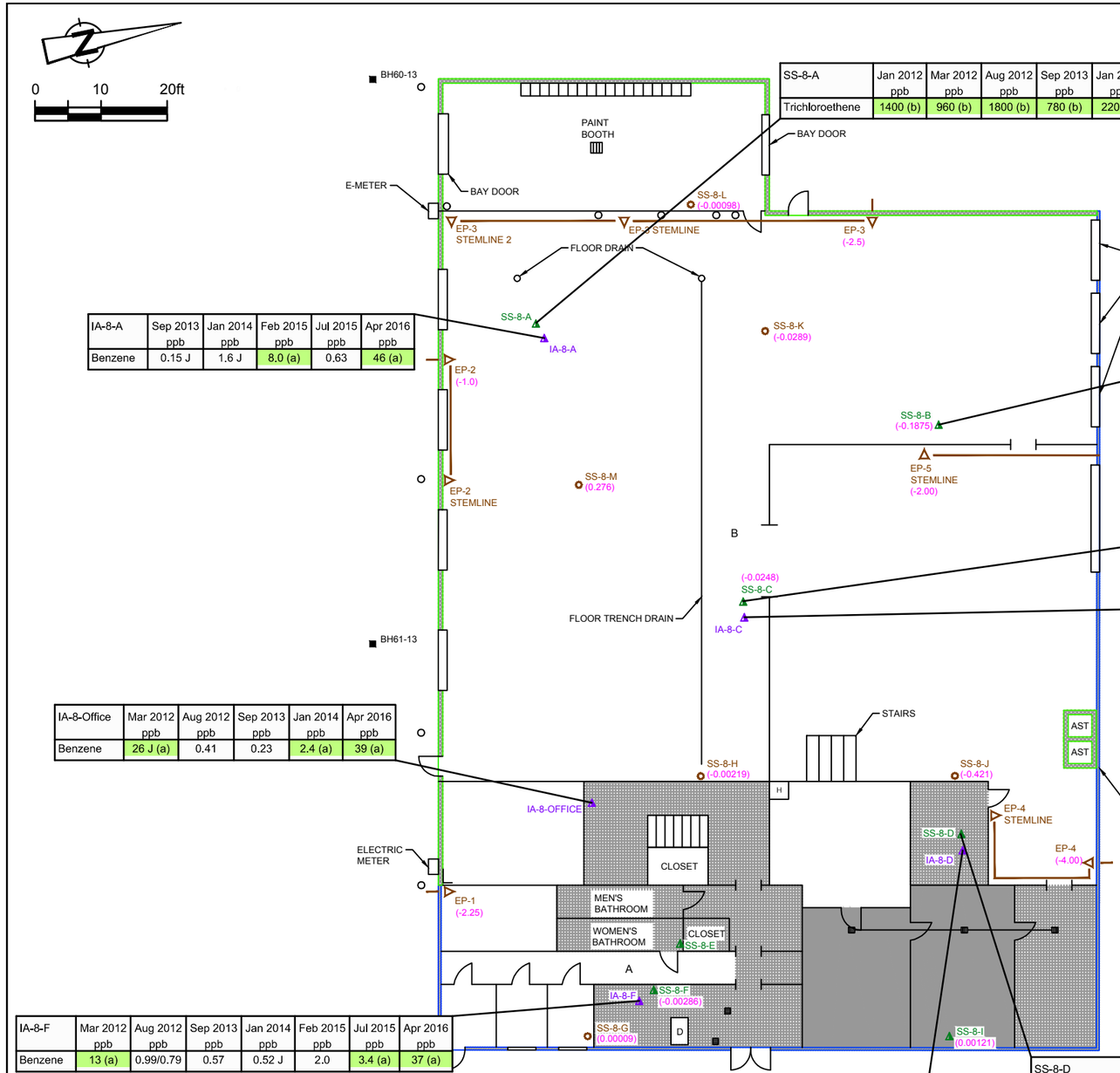
2.2 Monitoring Schedule

Annual monitoring will be conducted according to the following schedule.

February: Buildings 17 and 24

July: Buildings 8, 9, 12, 14, and 15

The annual monitoring results will be assessed and presented to the agencies, with recommendations for future monitoring.



SS-8-A	Jan 2012 ppb	Mar 2012 ppb	Aug 2012 ppb	Sep 2013 ppb	Jan 2014 ppb	Mar 2014 ppb	Feb 2015 ppb	Jul 2015 ppb	Oct 2015 ppb	Apr 2016 ppb
Trichloroethene	1400 (b)	960 (b)	1800 (b)	780 (b)	220 (b)	240 (b)	160 (b)	480 (b)	1400 (b)	310 (b)/320 (b)

IA-8-A	Sep 2013 ppb	Jan 2014 ppb	Feb 2015 ppb	Jul 2015 ppb	Apr 2016 ppb
Benzene	0.15 J	1.6 J	8.0 (a)	0.63	46 (a)

SS-8-B	Jan 2012 ppb	Mar 2012 ppb	Aug 2012 ppb	Oct 2015 ppb	Apr 2016 ppb
Trichloroethene	31 (b)	26 (b)	95 (b)	86 (b)/84 (b)	5.8

SS-8-C	Jan 2012 ppb	Mar 2012 ppb	Aug 2012 ppb
Trichloroethene	11	17	35 (b)

IA-8-C	Mar 2012 ppb	Aug 2012 ppb	Sep 2013 ppb
Benzene	20 (a)	0.44	0.38

IA-8-Office	Mar 2012 ppb	Aug 2012 ppb	Sep 2013 ppb	Jan 2014 ppb	Apr 2016 ppb
Benzene	26 J (a)	0.41	0.23	2.4 (a)	39 (a)

IA-8-F	Mar 2012 ppb	Aug 2012 ppb	Sep 2013 ppb	Jan 2014 ppb	Feb 2015 ppb	Jul 2015 ppb	Apr 2016 ppb
Benzene	13 (a)	0.99/0.79	0.57	0.52 J	2.0	3.4 (a)	37 (a)

SS-8-D	Jan 2012 ppb	Mar 2012 ppb	Aug 2012 ppb	Sep 2013 ppb	Jan 2014 ppb	Mar 2014 ppb	Jul 2015 ppb	Apr 2016 ppb
Trichloroethene	420 (b)	420 (b)/350 (b)	930 (b)	200 (b)/290 (b)	36 (b)/43 (b)	0.48	34 (b)/32 (b)	24 (b)

IA-8-D	Sep 2013 ppb	Jan 2014 ppb	Feb 2015 ppb	Jul 2015 ppb	Apr 2016 ppb
Benzene	0.55	2.3 (a)	9.1 (a)	0.34 J	64 (a)

VAS-14	Max ug/L
cis-1,2-Dichloroethene	390 (c)
Trichloroethene	3.0 (d)
Vinyl chloride	120 (cd)

Chemical	ODH Non-Residential Screening Levels		USEPA Regional Screening Levels (THQ = 0.1)	
	Indoor Air (a) (ppb)	Sub-Slab (b) (ppb)	MCL (c) (µg/L)	Protection of Industrial Indoor Air (d) (µg/L)
Benzene	2	20	5	7.05
cis-1,2-Dichloroethene	37	370	70	-
Trichloroethene	2	20	5	2.19
Vinyl chloride	2	20	2	2.46

LEGEND

- EP-1 SUCTION POINT LOCATION
- PIPING AND FAN LOCATION
- CP-1 COMPLIANCE POINT LOCATION
- BRICK
- CONCRETE BLOCK
- INTERIOR WALL
- FLOOR DRAIN
- PIPING PENETRATIONS IN CONCRETE
- DOWN SPOUT
- D DESK
- H HEATER
- W WATER TANK
- CARPET
- TILING
- DOOR
- STAIRS
- 5171-1-A EXISTING SOIL VAPOR PROBE LOCATION
- IA-8-D EXISTING INDOOR AIR LOCATION
- BH55-13 BOREHOLE LOCATION
- VAS-14 VAS SAMPLING LOCATION

BH60-13	Jun 2013 ug/L
Trichloroethene	1.3 (e)

- SAMPLE IDENTIFICATION
- SAMPLE DATE
- SAMPLE UNITS
- CRITERIA
- CONCENTRATION
- PARAMETER

- EXCEEDS SPECIFIED SCREENING LEVEL
- GROUNDWATER EXCEEDANCE
- (-0.00630) VACUUM READING MEASURED ON APRIL 13, 2016 IN INCHES OF WATER COLUMN (" W.C.)

figure 4.1

1951 DRYDEN ROAD
PARCEL NUMBER 5171, BUILDING 8
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

GHD

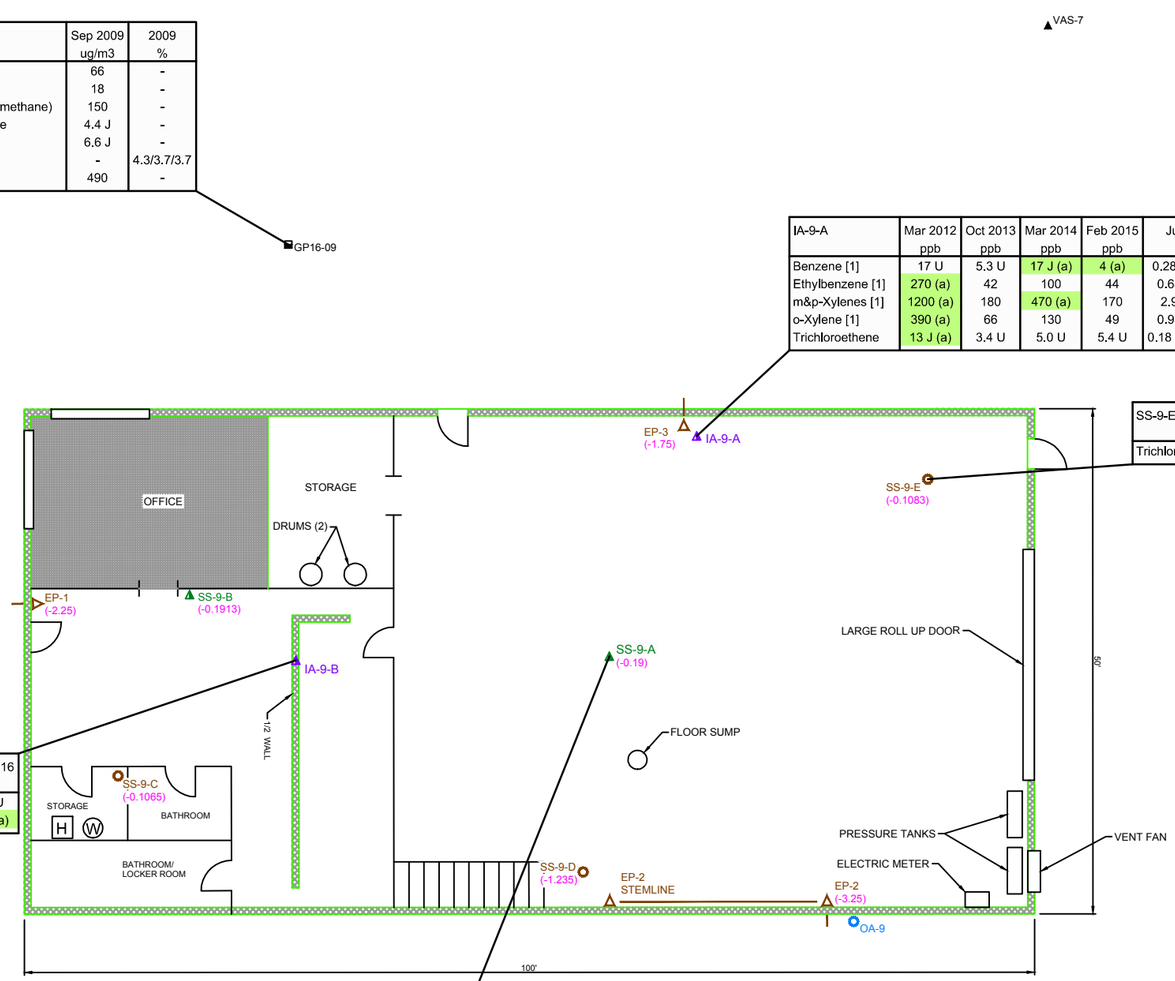
38443-102(018)GN-WA001 JAN 6, 2017

GP16-09	Sep 2009 ug/m3	2009 %
1,1-Dichloroethane	66	-
Benzene	18	-
Chloroform (Trichloromethane)	150	-
cis-1,2-Dichloroethene	4.4 J	-
Ethylbenzene	6.6 J	-
Methane, field	-	4.3/3.7/3.7
Vinyl chloride	490	-

IA-9-A	Mar 2012 ppb	Oct 2013 ppb	Mar 2014 ppb	Feb 2015 ppb	Jul 2015 ppb	Apr 2016 ppb
Benzene [1]	17 U	5.3 U	17 J (a)	4 (a)	0.28 U/0.26 J	10 U
Ethylbenzene [1]	270 (a)	42	100	44	0.68 J/1.3 J	66
m&p-Xylenes [1]	1200 (a)	180	470 (a)	170	2.9 J/5.9 J	280 (a)
o-Xylene [1]	390 (a)	66	130	49	0.95 J/1.8 J	82
Trichloroethene	13 J (a)	3.4 U	5.0 U	5.4 U	0.18 U/0.072 U	6.6 U

SS-9-E	May 2014 ppb
Trichloroethene	150 (b)

IA-9-B	Mar 2012 ppb	Oct 2013 ppb	Mar 2014 ppb	May 2014 ppb	Feb 2015 ppb	Apr 2016 ppb
Benzene [1]	48 U	14 U	8.1 (a)	0.15 J	4.2 (a)	4.3 U
m&p-Xylenes [1]	420 (a)	160	310 (a)	1.8	150	250 (a)



SS-9-A	Jan 2012 ppb	Mar 2012 ppb	Feb 2015 ppb	Jul 2015 ppb	Apr 2016 ppb
Trichloroethene	1800 (b)/1800 (b)	3100 (b)	644 (b)	1700 (b)	280 (b)/310 (b)

LEGEND

- EP-1 SUCTION POINT LOCATION
- PIPING AND FAN LOCATION
- SS-9-E COMPLIANCE POINT LOCATION
- CONCRETE BLOCK
- INTERIOR WALL
- FLOOR DRAIN
- HEATER
- WATER TANK
- TILING
- DOOR
- STAIRS
- 5171-1-A EXISTING SOIL VAPOR PROBE LOCATION
- IA-8-D EXISTING INDOOR AIR LOCATION
- OA-9 EXISTING OUTDOOR AIR LOCATION
- VAS-7 VAS SAMPLING LOCATION
- GP16-09 DEEP GAS PROBE

SS-9-E	May 2014 ppb
Trichloroethene	150 (b)

- SAMPLE IDENTIFICATION
- SAMPLE DATE
- SAMPLE UNITS
- CRITERIA
- CONCENTRATION
- PARAMETER

EXCEEDS SPECIFIED SCREENING LEVEL

(-0.0166) VACUUM READING MEASURED ON APRIL 13, 2016 IN INCHES OF WATER COLUMN (" W.C.)

[1] INDOOR AIR EXCEEDANCES MAY NOT BE DUE TO VAPOR INTRUSION. BASED ON MULTIPLE LINES OF EVIDENCE.

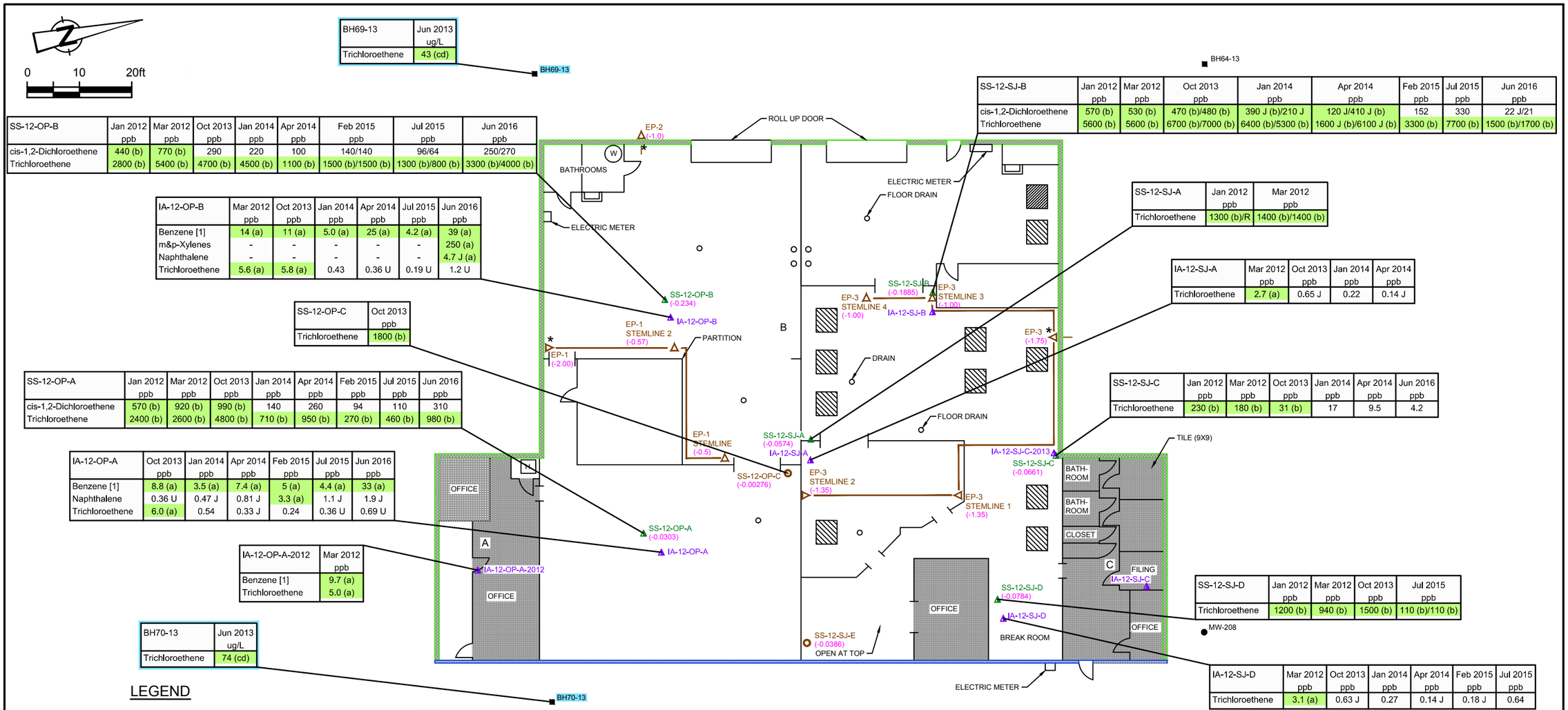
Chemical	ODH Non-Residential Screening Levels		USEPA Regional Screening Levels (THQ = 0.1)	
	Indoor Air (a) (ppb)	Sub-Slab (b) (ppb)	MCL (c) (µg/L)	Protection of Industrial Indoor Air (d) (µg/L)
1,1-Dichloroethane	16	160	-	33.51
Benzene	2	20	5	7.05
Chloroform (Trichloromethane)	80	800	80	3.53
cis-1,2-Dichloroethene	37	370	70	-
Ethylbenzene	250	2,500	700	15.21
m&p-Xylenes	200	2,000	-	-
Methane, field	0.05	0.5	-	-
o-Xylenes	200	2,000	-	208
Trichloroethene	2	20	5	2.19
Vinyl Chloride	2	20	2	2.46

figure 4.2

1951 DRYDEN ROAD
PARCEL NUMBER 5171, BUILDING 9
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

GHD

38443-102(018)GN-WA002 JAN 6, 2017



SS-12-OP-B	Jan 2012 ppb	Mar 2012 ppb	Oct 2013 ppb	Jan 2014 ppb	Apr 2014 ppb	Feb 2015 ppb	Jul 2015 ppb	Jun 2016 ppb
cis-1,2-Dichloroethene	440 (b)	770 (b)	290	220	100	140/140	96/64	250/270
Trichloroethene	2800 (b)	5400 (b)	4700 (b)	4500 (b)	1100 (b)	1500 (b)/1500 (b)	1300 (b)/800 (b)	3300 (b)/4000 (b)

IA-12-OP-B	Mar 2012 ppb	Oct 2013 ppb	Jan 2014 ppb	Apr 2014 ppb	Jul 2015 ppb	Jun 2016 ppb
Benzene [1]	14 (a)	11 (a)	5.0 (a)	25 (a)	4.2 (a)	39 (a)
m&p-Xylenes	-	-	-	-	-	250 (a)
Naphthalene	-	-	-	-	-	4.7 J (a)
Trichloroethene	5.6 (a)	5.8 (a)	0.43	0.36 U	0.19 U	1.2 U

SS-12-OP-C	Oct 2013 ppb
Trichloroethene	1800 (b)

SS-12-OP-A	Jan 2012 ppb	Mar 2012 ppb	Oct 2013 ppb	Jan 2014 ppb	Apr 2014 ppb	Feb 2015 ppb	Jul 2015 ppb	Jun 2016 ppb
cis-1,2-Dichloroethene	570 (b)	920 (b)	990 (b)	140	260	94	110	310
Trichloroethene	2400 (b)	2600 (b)	4800 (b)	710 (b)	950 (b)	270 (b)	460 (b)	980 (b)

IA-12-OP-A	Oct 2013 ppb	Jan 2014 ppb	Apr 2014 ppb	Feb 2015 ppb	Jul 2015 ppb	Jun 2016 ppb
Benzene [1]	8.8 (a)	3.5 (a)	7.4 (a)	5 (a)	4.4 (a)	33 (a)
Naphthalene	0.36 U	0.47 J	0.81 J	3.3 (a)	1.1 J	1.9 J
Trichloroethene	6.0 (a)	0.54	0.33 J	0.24	0.36 U	0.69 U

IA-12-OP-A-2012	Mar 2012 ppb
Benzene [1]	9.7 (a)
Trichloroethene	5.0 (a)

BH69-13	Jun 2013 ug/L
Trichloroethene	43 (cd)

BH70-13	Jun 2013 ug/L
Trichloroethene	74 (cd)

SS-12-SJ-B	Jan 2012 ppb	Mar 2012 ppb	Oct 2013 ppb	Jan 2014 ppb	Apr 2014 ppb	Feb 2015 ppb	Jul 2015 ppb	Jun 2016 ppb
cis-1,2-Dichloroethene	570 (b)	530 (b)	470 (b)/480 (b)	390 J (b)/210 J	120 J/410 J (b)	152	330	22 J/21
Trichloroethene	5600 (b)	5600 (b)	6700 (b)/7000 (b)	6400 (b)/5300 (b)	1600 J (b)/6100 J (b)	3300 (b)	7700 (b)	1500 (b)/1700 (b)

SS-12-SJ-A	Jan 2012 ppb	Mar 2012 ppb
Trichloroethene	1300 (b)/R	1400 (b)/1400 (b)

IA-12-SJ-A	Mar 2012 ppb	Oct 2013 ppb	Jan 2014 ppb	Apr 2014 ppb
Trichloroethene	2.7 (a)	0.65 J	0.22	0.14 J

SS-12-SJ-C	Jan 2012 ppb	Mar 2012 ppb	Oct 2013 ppb	Jan 2014 ppb	Apr 2014 ppb	Jun 2016 ppb
Trichloroethene	230 (b)	180 (b)	31 (b)	17	9.5	4.2

SS-12-SJ-D	Jan 2012 ppb	Mar 2012 ppb	Oct 2013 ppb	Jul 2015 ppb
Trichloroethene	1200 (b)	940 (b)	1500 (b)	110 (b)/110 (b)

IA-12-SJ-D	Mar 2012 ppb	Oct 2013 ppb	Jan 2014 ppb	Apr 2014 ppb	Feb 2015 ppb	Jul 2015 ppb
Trichloroethene	3.1 (a)	0.63 J	0.27	0.14 J	0.18 J	0.64

LEGEND

- EP-1 SUCTION POINT LOCATION
- PIPING AND FAN LOCATION
- CP-1 COMPLIANCE POINT LOCATION
- BRICK
- CONCRETE BLOCK
- INTERIOR WALL
- FLOOR DRAIN
- PIPING PENETRATIONS IN CONCRETE
- DOWN SPOUT
- H HEATER
- W WATER TANK
- SINK
- TILING
- DOOR
- HEAVY EQUIPMENT
- 5172-OP1-A EXISTING SOIL VAPOR PROBE LOCATION
- MW-208 MONITORING WELL LOCATION
- BH69-13 BOREHOLE LOCATION
- [1] INDOOR AIR EXCEEDANCES MAY NOT BE DUE TO VAPOR INTRUSION. BASED ON MULTIPLE LINES OF EVIDENCE.

IA-12-OP-B-2013	Oct 2013 ppb
Benzene	11 (a)
Trichloroethene	5.8 (a)

SAMPLE IDENTIFICATION
SAMPLE DATE
SAMPLE UNITS
CRITERIA
CONCENTRATION
PARAMETER

- EXCEEDS SPECIFIED SCREENING LEVEL
- GROUNDWATER EXCEEDANCE
- (-0.00630) VACUUM READING MEASURED ON JUNE 15-16, 2016 IN INCHES OF WATER COLUMN (" W.C.)
- * INSTALL VALVE AND BARBS

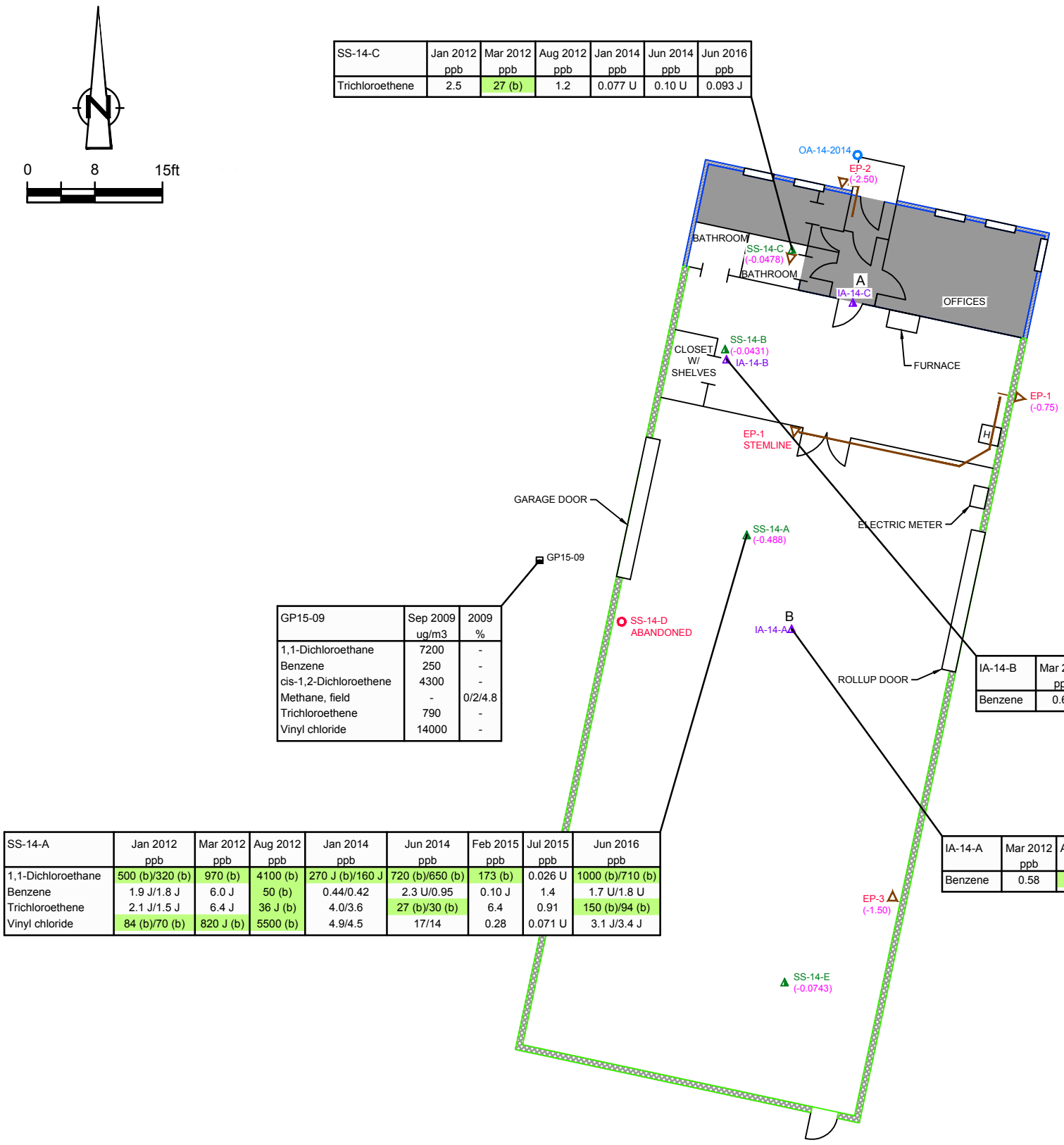
Chemical	ODH Non-Residential Screening Levels		USEPA Regional Screening Levels (THQ = 0.1)	
	Indoor Air (a) (ppb)	Sub-Slab (b) (ppb)	MCL (c) (µg/L)	Protection of Industrial Indoor Air (d) (µg/L)
Benzene	2	20	5	7.05
cis-1,2-Dichloroethene	37	370	70	-
Naphthalene	2.9	29	0.17	20.01
Trichloroethene	2	20	5	2.19

figure 4.3

2015/2019 DRYDEN ROAD
PARCEL NUMBER 5172, BUILDING 12
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

38443-102(018)GN-WA003 JAN 6, 2017

SS-14-C	Jan 2012 ppb	Mar 2012 ppb	Aug 2012 ppb	Jan 2014 ppb	Jun 2014 ppb	Jun 2016 ppb
Trichloroethene	2.5	27 (b)	1.2	0.077 U	0.10 U	0.093 J



GP15-09	Sep 2009 ug/m3	2009 %
1,1-Dichloroethane	7200	-
Benzene	250	-
cis-1,2-Dichloroethene	4300	-
Methane, field	-	0/2/4.8
Trichloroethene	790	-
Vinyl chloride	14000	-

IA-14-B	Mar 2012 ppb	Aug 2012 ppb	Jan 2014 ppb	Jun 2014 ppb	Jun 2016 ppb
Benzene	0.67	2.1 (a)	2.1 (a)	0.43	0.95

SS-14-A	Jan 2012 ppb	Mar 2012 ppb	Aug 2012 ppb	Jan 2014 ppb	Jun 2014 ppb	Feb 2015 ppb	Jul 2015 ppb	Jun 2016 ppb
1,1-Dichloroethane	500 (b)/320 (b)	970 (b)	4100 (b)	270 J (b)/160 J	720 (b)/650 (b)	173 (b)	0.026 U	1000 (b)/710 (b)
Benzene	1.9 J/1.8 J	6.0 J	50 (b)	0.44/0.42	2.3 U/0.95	0.10 J	1.4	1.7 U/1.8 U
Trichloroethene	2.1 J/1.5 J	6.4 J	36 J (b)	4.0/3.6	27 (b)/30 (b)	6.4	0.91	150 (b)/94 (b)
Vinyl chloride	84 (b)/70 (b)	820 J (b)	5500 (b)	4.9/4.5	17/14	0.28	0.071 U	3.1 J/3.4 J

IA-14-A	Mar 2012 ppb	Aug 2012 ppb	Jan 2014 ppb	Jun 2014 ppb	Jun 2016 ppb
Benzene	0.58	2.4 (a)	3.2 (a)	0.54	1.9

LEGEND

- EP-1 SUCTION POINT LOCATION
- PIPING AND FAN LOCATION
- SS-14-D COMPLIANCE POINT LOCATION
- BRICK
- CONCRETE BLOCK
- INTERIOR WALL
- H HEATER
- CARPET
- DOOR
- SS-14-B EXISTING SOIL VAPOR PROBE LOCATION
- IA-14-A EXISTING INDOOR AIR LOCATION
- GP15-09 DEEP GAS PROBE
- OA-14-2014 EXISTING OUTDOOR AIR LOCATION
- EXCEEDS SPECIFIED SCREENING LEVEL
- (-0.0166) VACUUM READING MEASURED ON JUNE 15-16, 2016IN INCHES OF WATER COLUMN (" W.C.)

IA-14-C	Mar 2012 %	Aug 2012 %
Methane	-	0.19 U
Methane, field	0.0/0	0/0

SAMPLE IDENTIFICATION
SAMPLE DATE
SAMPLE UNITS
CRITERIA
CONCENTRATION
PARAMETER

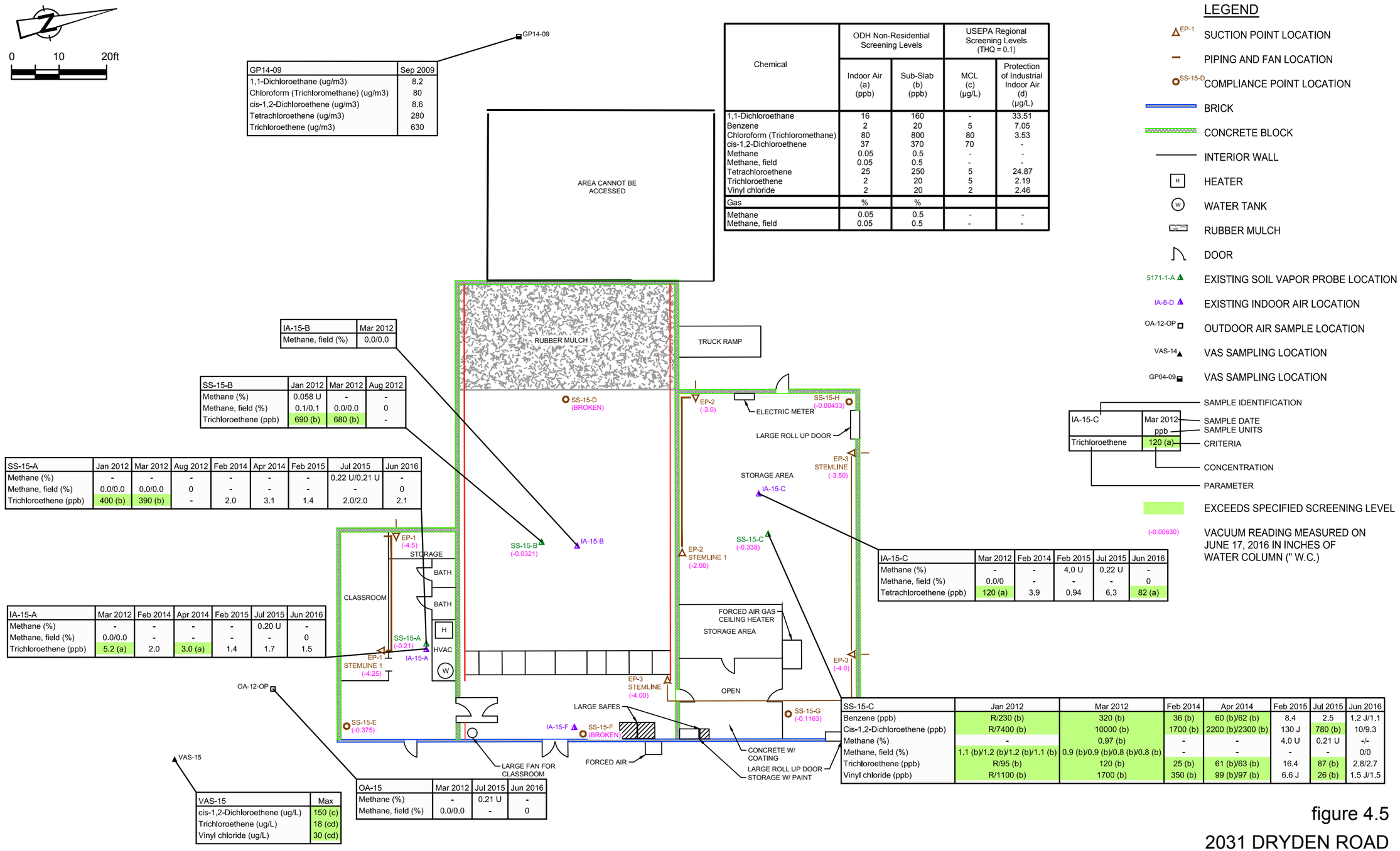
Chemical	ODH Non-Residential Screening Levels		USEPA Regional Screening Levels (THQ = 0.1)	
	Indoor Air (a) (ppb)	Sub-Slab (b) (ppb)	MCL (c) (µg/L)	Protection of Industrial Indoor Air (d) (µg/L)
1,1-Dichloroethane	16	160	-	33.51
Benzene	2	20	5	7.05
cis-1,2-Dichloroethene	37	370	70	-
Methane, field	0.05	0.5	-	-
Trichloroethene	2	20	5	2.19
Vinyl chloride	2	20	2	246

figure 4.4

2003 DRYDEN ROAD
PARCEL NUMBER 5172, BUILDING 14
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

GHD

38443-102(018)GN-WA004 JAN 6, 2017



GP14-09	Sep 2009
1,1-Dichloroethane (ug/m3)	8.2
Chloroform (Trichloromethane) (ug/m3)	80
cis-1,2-Dichloroethene (ug/m3)	8.6
Tetrachloroethene (ug/m3)	280
Trichloroethene (ug/m3)	630

Chemical	ODH Non-Residential Screening Levels		USEPA Regional Screening Levels (THQ = 0.1)	
	Indoor Air (a) (ppb)	Sub-Slab (b) (ppb)	MCL (c) (µg/L)	Protection of Industrial Indoor Air (d) (µg/L)
1,1-Dichloroethane	16	160	-	33.51
Benzene	2	20	5	7.05
Chloroform (Trichloromethane)	80	800	80	3.53
cis-1,2-Dichloroethene	37	370	70	-
Methane	0.05	0.5	-	-
Methane, field	0.05	0.5	-	-
Tetrachloroethene	25	250	5	24.87
Trichloroethene	2	20	5	2.19
Vinyl chloride	2	20	2	2.46
Gas	%	%		
Methane	0.05	0.5	-	-
Methane, field	0.05	0.5	-	-

IA-15-B	Mar 2012
Methane, field (%)	0.0/0.0

SS-15-B	Jan 2012	Mar 2012	Aug 2012
Methane (%)	0.058 U	-	-
Methane, field (%)	0.1/0.1	0.0/0.0	0
Trichloroethene (ppb)	690 (b)	680 (b)	-

SS-15-A	Jan 2012	Mar 2012	Aug 2012	Feb 2014	Apr 2014	Feb 2015	Jul 2015	Jun 2016
Methane (%)	-	-	-	-	-	-	0.22 U/0.21 U	-
Methane, field (%)	0.0/0.0	0.0/0.0	0	-	-	-	-	0
Trichloroethene (ppb)	400 (b)	390 (b)	-	2.0	3.1	1.4	2.0/2.0	2.1

IA-15-A	Mar 2012	Feb 2014	Apr 2014	Feb 2015	Jul 2015	Jun 2016
Methane (%)	-	-	-	-	0.20 U	-
Methane, field (%)	0.0/0.0	-	-	-	-	0
Trichloroethene (ppb)	5.2 (a)	2.0	3.0 (a)	1.4	1.7	1.5

IA-15-C	Mar 2012	Feb 2014	Feb 2015	Jul 2015	Jun 2016
Methane (%)	-	-	4.0 U	0.22 U	-
Methane, field (%)	0.0/0	-	-	-	0
Tetrachloroethene (ppb)	120 (a)	3.9	0.94	6.3	82 (a)

SS-15-C	Jan 2012	Mar 2012	Feb 2014	Apr 2014	Feb 2015	Jul 2015	Jun 2016
Benzene (ppb)	R/230 (b)	320 (b)	36 (b)	60 (b)/62 (b)	8.4	2.5	1.2 J/1.1
Cis-1,2-Dichloroethene (ppb)	R/7400 (b)	10000 (b)	1700 (b)	2200 (b)/2300 (b)	130 J	780 (b)	10/9.3
Methane (%)	-	0.97 (b)	-	-	4.0 U	0.21 U	-/-
Methane, field (%)	1.1 (b)/1.2 (b)/1.2 (b)/1.1 (b)	0.9 (b)/0.9 (b)/0.8 (b)/0.8 (b)	-	-	-	-	0/0
Trichloroethene (ppb)	R/95 (b)	120 (b)	25 (b)	61 (b)/63 (b)	16.4	87 (b)	2.8/2.7
Vinyl chloride (ppb)	R/1100 (b)	1700 (b)	350 (b)	99 (b)/97 (b)	6.6 J	26 (b)	1.5 J/1.5

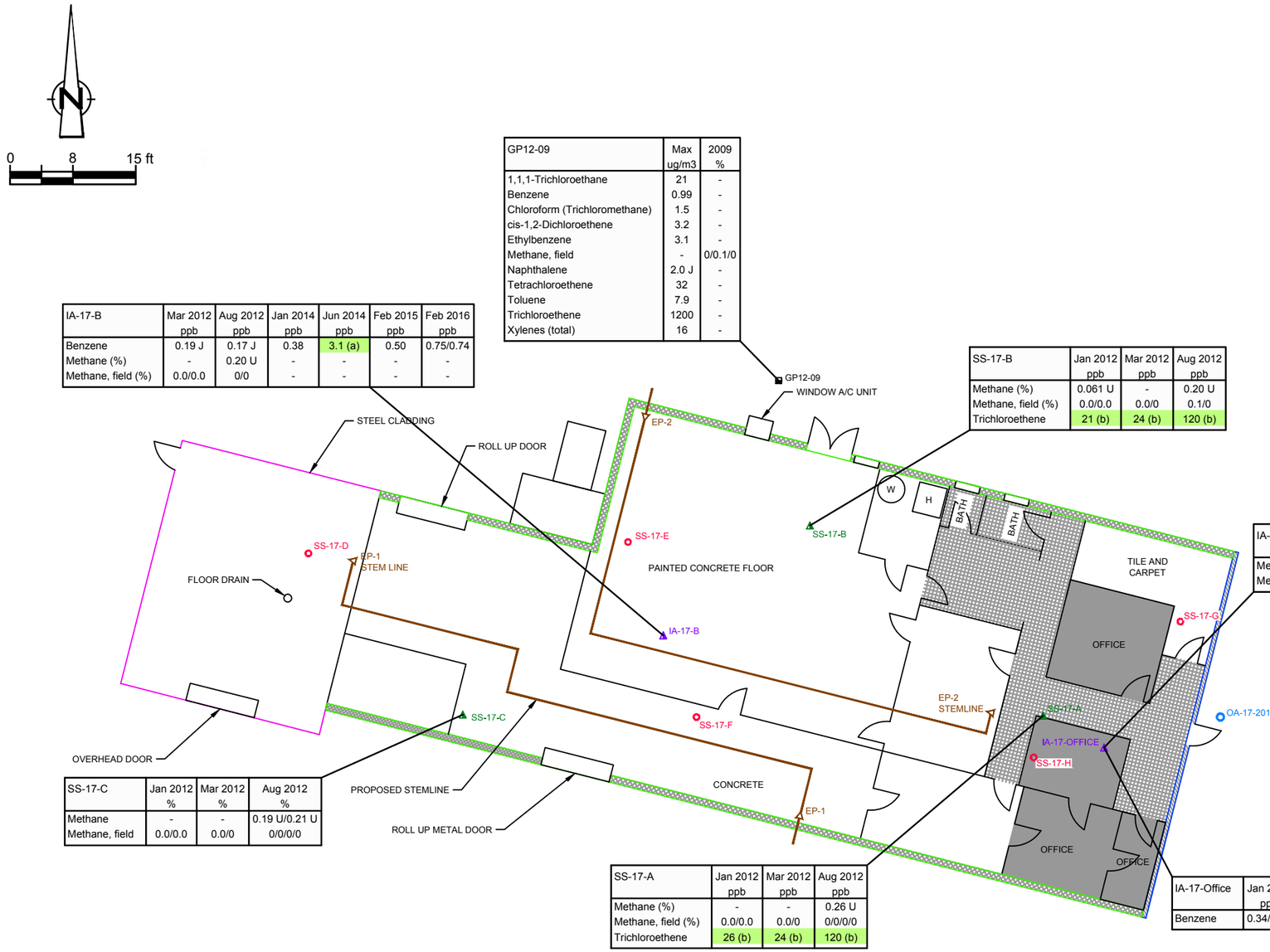
OA-15	Mar 2012	Jul 2015	Jun 2016
Methane (%)	-	0.21 U	-
Methane, field (%)	0.0/0.0	-	0

VAS-15	Max
cis-1,2-Dichloroethene (ug/L)	150 (c)
Trichloroethene (ug/L)	18 (cd)
Vinyl chloride (ug/L)	30 (cd)

figure 4.5

2031 DRYDEN ROAD
PARCEL NUMBER 5173, SIM TRAINING BUILDING 15
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

38443-102(018)GN-WA005 JAN 6, 2017



GP12-09	Max ug/m3	2009 %
1,1,1-Trichloroethane	21	-
Benzene	0.99	-
Chloroform (Trichloromethane)	1.5	-
cis-1,2-Dichloroethene	3.2	-
Ethylbenzene	3.1	-
Methane, field	-	0/0.1/0
Naphthalene	2.0 J	-
Tetrachloroethene	32	-
Toluene	7.9	-
Trichloroethene	1200	-
Xylenes (total)	16	-

IA-17-B	Mar 2012 ppb	Aug 2012 ppb	Jan 2014 ppb	Jun 2014 ppb	Feb 2015 ppb	Feb 2016 ppb
Benzene	0.19 J	0.17 J	0.38	3.1 (a)	0.50	0.75/0.74
Methane (%)	-	0.20 U	-	-	-	-
Methane, field (%)	0.0/0.0	0/0	-	-	-	-

SS-17-B	Jan 2012 ppb	Mar 2012 ppb	Aug 2012 ppb
Methane (%)	0.061 U	-	0.20 U
Methane, field (%)	0.0/0.0	0.0/0	0.1/0
Trichloroethene	21 (b)	24 (b)	120 (b)

IA-17-A	Mar 2012 %	Aug 2012 %
Methane	-	0.20 U
Methane, field	0/0.0	0/0

SS-17-C	Jan 2012 %	Mar 2012 %	Aug 2012 %
Methane	-	-	0.19 U/0.21 U
Methane, field	0.0/0.0	0.0/0	0/0/0/0

SS-17-A	Jan 2012 ppb	Mar 2012 ppb	Aug 2012 ppb
Methane (%)	-	-	0.26 U
Methane, field (%)	0.0/0.0	0.0/0	0/0/0/0
Trichloroethene	26 (b)	24 (b)	120 (b)

IA-17-Office	Jan 2014 ppb	Jun 2014 ppb	Feb 2015 ppb	Feb 2016 ppb
Benzene	0.34/0.35	1.9/2.3 (a)	0.48	0.63

LEGEND

- EP-1 SUCTION POINT LOCATION
- PIPING AND FAN LOCATION
- SS-17-E COMPLIANCE POINT LOCATION
- BRICK
- CONCRETE BLOCK
- ALUMINUM WALL
- INTERIOR WALL
- FLOOR DRAIN
- H HEATER
- W WATER TANK
- CARPET
- TILING
- DOOR
- SS-17-B EXISTING SOIL VAPOR PROBE LOCATION
- IA-17-A EXISTING INDOOR AIR LOCATION
- GP12-09 DEEP GAS PROBE

IA-17-Office	Jan 2014 ppb	Jun 2014 ppb
Benzene	0.34/0.35	1.9/2.3 (a)

- SAMPLE IDENTIFICATION
- SAMPLE DATE
- SAMPLE UNITS
- CRITERIA
- CONCENTRATION
- PARAMETER
- EXCEEDS SPECIFIED SCREENING LEVEL

Chemical	ODH Non-Residential Screening Levels	
	Indoor Air (a) (ppb)	Sub-Slab (b) (ppb)
Benzene	2	20
Methane	0.05	0.5
Methane, field	0.05	0.5
Trichloroethene	2	20

GHD

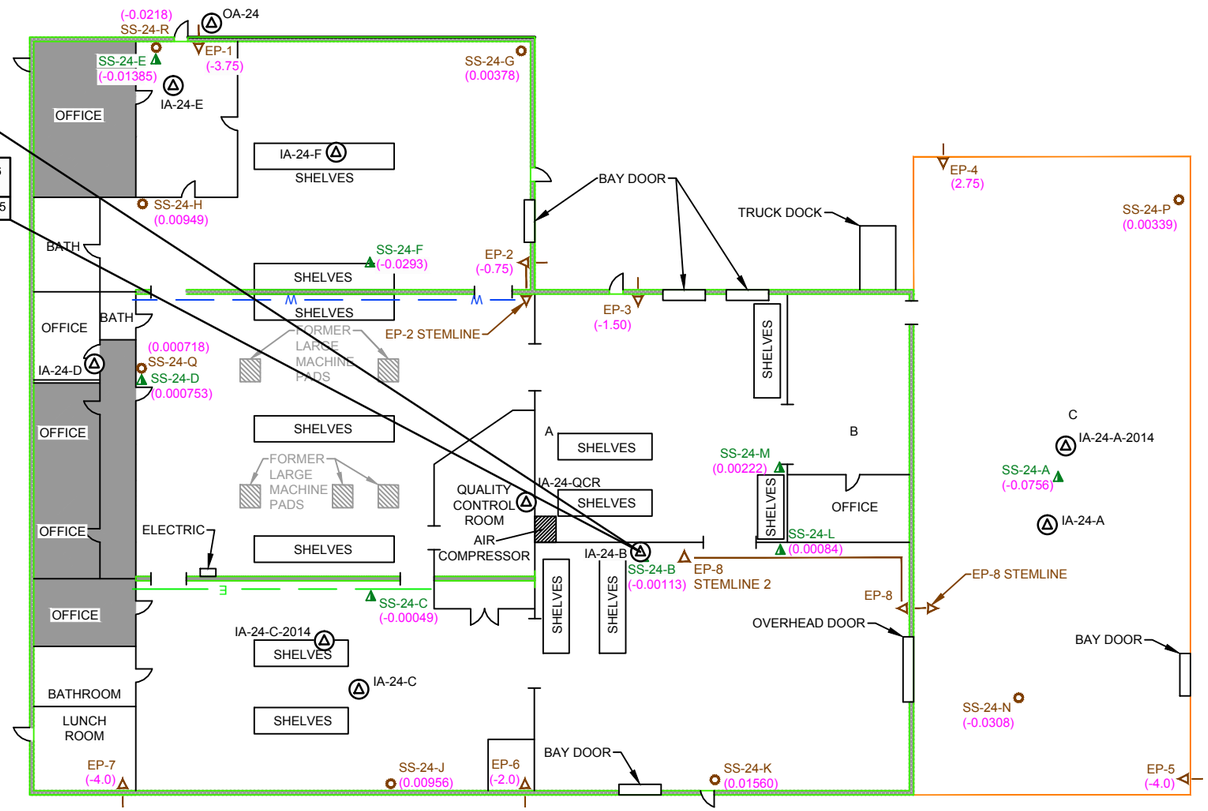
figure 4.6

2075 DRYDEN ROAD
PARCEL NUMBER 5175, BUILDING 17
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

38443-102(018)GN-WA006 JAN 6, 2017

SS-24-B	Jan 2012 ppb	Mar 2012 ppb	Aug 2012 ppb	Sep 2013 ppb	Dec 2014 ppb	Feb 2015 ppb	Jul 2015 ppb	Feb 2016 ppb
Trichloroethene	37 (b)	30 (b)	48 (b)	6.5/7.1	22 (b)/21 (b)	33.7 (b)	9.8	26 (b)

IA-24-B	Sep 2013 ppb	Feb 2014 ppb	Dec 2014 ppb	Feb 2015 ppb	Jul 2015 ppb	Feb 2016 ppb
Tetrachloroethene	0.040 U	0.13 J	41 (a)	0.16	0.042 U/0.040 U	0.11 J/0.25



LEGEND

- EP-1 — SUCTION POINT LOCATION
- PIPING AND FAN LOCATION
- CP-1 — COMPLIANCE POINT LOCATION
- BH19-13 — BOREHOLE LOCATION
- CONCRETE BLOCK
- SHEET METAL
- INTERIOR WALL
- WATER LINE
- ELECTRICAL LINE
- CARPET
- DOOR
- SS-24-A — EXISTING SOIL VAPOR PROBE LOCATION
- IA-24-A — EXISTING INDOOR AIR LOCATION
- EXCEEDS SPECIFIED SCREENING LEVEL
- (-0.0166) — VACUUM READING MEASURED ON FEBRUARY 11, 2016 IN INCHES OF WATER COLUMN (" W.C.)

IA-24-A	Mar 2012
Methane	%
Methane, field	-
	0/0.0

SAMPLE IDENTIFICATION
SAMPLE DATE
SAMPLE UNITS
CRITERIA
CONCENTRATION
PARAMETER

Chemical	ODH Non-Residential Screening Levels		USEPA Regional Screening Levels (THQ = 0.1)	
	Indoor Air (a) (ppb)	Sub-Slab (b) (ppb)	MCL (c) (µg/L)	Protection of Industrial Indoor Air (d) (µg/L)
Tetrachloroethene	25	250	5	11
Trichloroethene	2	20	5	2.19

figure 4.7

2215 EAST RIVER ROAD
PARCEL NUMBER 3207, BUILDING 24
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

38443-102(018)GN-WA007 JAN 6, 2017

Table 1

Proposed Annual Hybrid Sampling Locations
South Dayton Dump and Landfill Site
Moraine, Ohio

Bldg No.	Current Vacuum	Current SS Exceedances	Current IA Exceedance	VI occuring?	Previous Proficiency Sample Locations	Proposed Annual Sampling Locations	Notes
8	Acceptable with exception of SS-8-G to SS-8-I, SS-8-L, and SS-8-M	TCE	Benzene	No	SS-8-A SS-8-B SS-8-D IA-8-A IA-8-Office IA-8-D IA-8-F	SS-8-A IA-8-A IA-8-Office IA-8-D IA-8-F	Continued sampling at SS-8-A proposed in order to provide analytical evidence that IA exceedances of Benzene are not due to VI, and to monitor SSDS
9	Acceptable	TCE	Benzene Xylenes	No	SS-9-A IA-9-A IA-9-B	SS-9-A IA-9-A IA-9-B	Continued sampling at SS-9-A proposed in order to provide analytical evidence that IA exceedances of Benzene and Xylenes are not due to VI, and to monitor SSDS.
12 OP	Acceptable	TCE	Benzene Xylenes Naphthalene	No	SS-12-OP-A SS-12-OP-B IA-12-OP-A IA-12-OP-B	SS-12-OP-A SS-12-OP-B IA-12-OP-A IA-12-OP-B IA-12-OP-Office	IA-12-OP-Office was added to monitor IA air quality in an area anticipated to involve the greatest worker occupancy
12 SJ	Acceptable	TCE	None	No	IA-12-SJ-A IA-12-SJ-B (2015) IA-12-SJ-C IA-12-SJ-D SS-12-SJ-B SS-12-SJ-C	IA-12-SJ-A (machine area) IA-12-SJ-D (Break Room) IA-12-SJ-C (Office filing area) IA-12-SJ-C-2013 (machine area) SS-12-SJ-B	SS-12-SJ-C was removed as there have been no exceedances from this probe since January 2014
14	Acceptable	1,1-DCA TCE	Benzene	No	SS-14-A IA-14-A IA-14-B IA-14-C	SS-14-A IA-14-A IA-14-B IA-14-C	Rationale: Although sub-slab vacuums are now at or better than -0.004"w.c., continued SS sampling at SS-14-A is proposed to obtain analytical data to prove that any IA exceedances are not due to VI.
15	Acceptable	N/A	PCE	No	IA-15-A IA-15-C IA-15-F SS-15-A SS-15-C	IA-15-A IA-15-C IA-15-F SS-15-A SS-15-C	No changes proposed
17	Acceptable	N/A	None	No	IA-17-A IA-17-B IA-17-Office	IA-17-A IA-17-B IA-17-Office	No changes proposed
24	Acceptable with exception of SS-24-C, SS-24-D, SS-24-G to SS-24-M, SS-24-P, and SS-24-Q	TCE	None	No	IA-24-A IA-24-B IA-24-C IA-24-D IA-24-F	IA-24-B IA-24-D	Reduced IA sampling proposed based on the lack of IA exceedances in previous sampling rounds back to 2012. SS exceedances at SS-24-B are less than the ODH Screening Levels (AF=33). IA-24-D proposed based on location in offices, and IA-24-B is proposed based on proximity to worst-case probe and previous PCE exceedance

Note:

Vacuum acceptability: better than -0.004"w.c.

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