



June 2, 2017

Mr. Jacky Luo
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, New York 12233-7013

Re: RACER Trust – General Motors – Fisher Guide Site –
NYSDEC Order on Consent Index #D-7-0853-15-06
Vapor Intrusion Mitigation IRM – Completion Report Addendum

Dear Mr. Luo:

Pursuant to the Department's request, this letter provides a summary of Vapor Intrusion (VI) activities and sampling results through 2014. In 2005, NYSDEC requested the investigation of the potential existence and extent of soil gas associated with site-related volatile organic compounds (VOCs) in ground water. Since 2005, three rounds of sub-slab vapor and indoor air investigations were implemented in March 2006, March 2007 and October 2009. The analytical results for TCE, TCA and PCE from these sampling events are summarized on Figure 2 of the September 2014 VI Mitigation Completion Report (attachment 1).

Comparison of these data to the NYS VI Guidance (NYSDOH 2006) indicated that:

- TCE concentrations in some samples of indoor air were greater than 5 $\mu\text{g}/\text{m}^3$, and
- TCE concentrations in some sub-slab vapor samples were greater than 250 $\mu\text{g}/\text{m}^3$.

The NYSDOH air guidelines for TCE in indoor air has since been revised to 2 $\mu\text{g}/\text{m}^3$ (NYSDOH 2015).

In addition to sampling performed in the Manufacturing Building, the following activities have been conducted in connection with potential vapor intrusion conditions at the facility:

- 2006 Building Survey. This effort focused on the condition of the building envelope and interior walls, and concluded that interior air spaces are in constant communication.
- 2006 Fact Sheet provided to building tenants. This fact sheet notified tenants of on-going vapor intrusion investigation and provided 2006 sub-slab vapor and indoor air sampling results (O'Brien & Gere 2006a).

- 2007 Floor Sealing Activities. This effort resulted in the sealing of drain holes in the facility floor and the sealing of sump covers.
- 2008 Diagnostic Sub-Slab Communication Tests. This effort resulted in the completion of sub-slab communication testing in unoccupied spaces over approximately 20% to 25% of the building footprint, and provided communication information beneath for the majority of the Manufacturing Building.
- Discovery of a source of PCE use within the northwest portion of the building in 2008. The tenant, located in the northwest wing of the building, was found to be using a PCE-containing product in its processes. Documentation of PCE use by this tenant was provided to NYSDEC in GM's letter of March 11, 2008 regarding 2008 Vapor Intrusion Evaluation (Hartnett 2008). This is relevant to indoor air testing data. As of 2014, PCE was no longer being used by this tenant.
- 2007 and 2008 Risk Evaluations. The conclusion of these risk evaluations was that hazard indices and cancer risks for 1, 5, 10 and 25 year worker exposures were within USEPA's acceptable ranges.
- 2008 Vapor Intrusion Evaluation. This report summarized risk evaluations, sub-slab communication findings, and provided an evaluation of technologies to address vapor intrusion at the facility (O'Brien & Gere 2008).
- 2010 Fact Sheet provided to building tenants. This fact sheet notified tenants of the on-going vapor intrusion investigation and provided 2006, 2007 and 2009 sub-slab vapor and indoor air sampling results (O'Brien & Gere 2010c).
- 2010 *Vapor Intrusion Mitigation Interim Remedial Measure Work Plan* (O'Brien & Gere 2010a) was developed and it proposed the installation of VI mitigation measures as a two-phase approach consisting of the installation of a partial sub-slab depressurization system (SSDS) as a first phase (Phase I) with sub-slab communication and indoor air testing to evaluate impact on indoor air concentrations
- 2010 through 2011 Phase I systems were installed
 - » System I is a 540-linear foot directionally-drilled suction pipe, located within facility bays F12 through F24, consisting of 4-inch diameter slotted HDPE piping, a fan capable of 195 cfm @ 34.6 inches of water column vacuum (static fan pressure), mounted on the western exterior wall of the facility, with a vertical exhaust pipe extending above roof line
 - » System II is a 100-ft long trench installed suction pipe, located within facility bays E8 through E11, consisting of 4-inch diameter perforated PVC piping, a fan capable of 94 cfm @ 1.04 inches of water column vacuum (static fan pressure), mounted on the roof with vertical exhaust pipe extending above the roof line.
- 2011 Phase I systems were commissioned
- 2011 Post-construction communication testing was performed. Based on post-construction communication testing, the sub slab depressurization systems influence approximately 380,000 square feet, or about 58% of the manufacturing facility floor space.

- 2011 Emissions modeling was performed and communicated to NYSDEC. Based on the modeling results, neither system was expected to result in ambient air concentrations in excess of NYSDEC DAR-1 modeling guidance thresholds. In addition, modeling results indicated that operation of both systems simultaneously was also expected to result in ambient air concentrations below the NYSDEC DAR-1 modeling guidance thresholds for on-site and off-site locations. Based on the modeling, system operation was initiated without emissions controls in October 2011.
- 2012 Post-construction indoor air samples were collected during the heating season. Post-SSDS installation results indicate that indoor air concentrations of TCE are below the corresponding concentrations in Table 3.1 of NYSDOH's October 2006 *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH 2006). Indoor air results were provided to NYSDEC and NYSDOH as part of the monthly progress report for the site. A figure showing a summary of indoor air results from 2012 and 2014 is attached (Figure 1).
- 2013 baseline sub-slab communication testing was conducted in the vicinity of the SSDS. Results indicated that communication testing results had changed since system start-up. Following discussions with NYSDEC, a round of indoor air sampling was proposed.
- 2014 Indoor air sampling was conducted during the heating season. Indoor air sampling results indicate that indoor air concentrations of TCE are below the corresponding concentrations in Table 3.1 of NYSDOH's October 2006 *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH 2006). A figure showing a summary of indoor air results from 2012 and 2014 is attached (Figure 1).
- 2014 *VI Mitigation IRM Completion Report* submitted summarizing construction, commissioning and sampling activities and results. Analytical results from two rounds of post-SSDS indoor air sampling performed during the heating season indicated that the objective of the SSDS IRM (March 2012 and again in March 2014), which was to reduce indoor air concentrations of TCE to levels below 5 µg/m³ and indoor air concentrations of PCE to 100 µg/m³, has been met. Note: since 2014, the NYSDOH air guidelines for TCE and PCE have been revised to 2 µg/m³ and 30 µg/m³, respectively (NYSDOH 2015 and 2013). The results of the 2012 and 2014 indoor air sampling event are also below these revised air guidelines.

Sub-slab communication testing results may be dependent on many factors including, but not limited to, soil moisture content, barometric pressure and other building or natural influences. The cause of the 2013 changes in communication testing results is uncertain. For instance, it is possible that changes in soil moisture content beneath the slab could have caused changes in communication testing results. On two occasions since 2011, water has been observed to be entrained in the blower for System 1, indicating that portions of the system were inundated. During one of these occasions, water associated with the building fire protection system had been discharged in the vicinity of the western end of System 1, during routine fire protection system draining. Natural slab settling activities or above-slab tenant operations could also contribute to changes in sub-slab communication. With the addition and departure of tenants, operations within the building have changed over the years.

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Despite variations in sub-slab communication, indoor air results collected in March 2012 and again in March 2014 show that indoor air concentrations are below the corresponding concentrations in Table 3.1 of the NYSDOH Final VI Guidance Average indoor air concentration of TCE (and 2015 update), which averaged approximately $1 \mu\text{g}/\text{m}^3$ in March 2012 and $0.5 \mu\text{g}/\text{m}^3$ in March 2014. Thus, the SSDS has reduced indoor air concentrations of TCE by approximately 98-99%. Communication testing results collected in 2014 and 2015 are attached as Figure 2 and indicate that depressurization continues to occur at or above target/commissioned levels.

Given these results, the objective of the SSDS IRM, which is to reduce indoor air concentrations of TCE and PCE to levels below the NYSDOH air guidelines ($2 \mu\text{g}/\text{m}^3$ for TCE and $30 \mu\text{g}/\text{m}^3$ for PCE), has been met. RACER recommends that a Phase II IRM is not necessary, and the Phase I VI Mitigation IRM be adopted as the VI Mitigation System for the facility.

As a result of discussions with NYSDEC, indoor air sampling was proposed for the 2016-2017 heating season. These samples were collected in late March 2017 and the tabulated and validated results will be provided in June.

RACER will complete an operation, maintenance and monitoring (OM&M) plan to document long-term system maintenance and monitoring procedures in June.

Please contact me at (201) 247 – 4890 should you have any questions or require further information.

Sincerely,



Brendan Mullen, P.E.
Cleanup Manager, NY

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Attachments:

Figure 1 – Post-SSDS Indoor Air Sampling Results (Updated 2012 and 2014 data figure that reflects 2014 data validation)

Figure 2 – VI Mitigation System Post-Mitigation Permanent Communication Test Point Locations As-Built
Attachment 1 - Figure 2 of the September 2014 VI Mitigation Completion Report

cc: Distribution List

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References

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Hartnett, James F. (GM). 2008. Letter from James F. Hartnett (GM) to Susan Edwards, P.E. (NYSDEC) dated March 11, 2008 regarding VI Evaluation.

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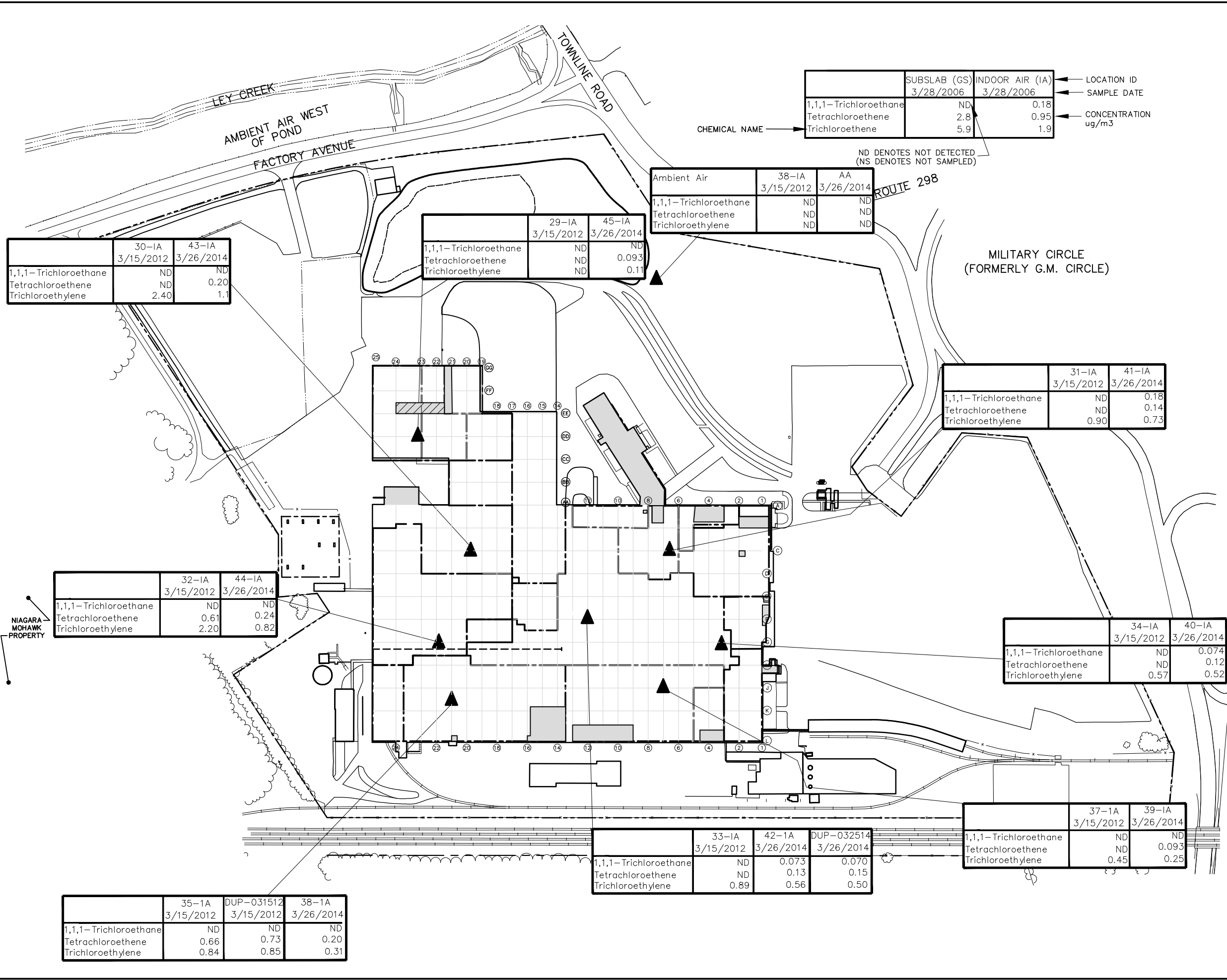
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FIGURE 1



LEGEND

- PROPERTY LINE
- ☁ TREE LINE
- FENCE
- GUARDRAIL
- TENANT SPACE OUTLINES
- ☐ OFFICE AREA
- ▨ 2ND FLOOR AREA
- SUB-SLAB DEPRESSURIZATION SYSTEM
- ▲ 2012 INDOOR AIR SAMPLING
- ▲ 2014 INDOOR AIR SAMPLING

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FORMER INLAND
FISHER GUIDE FACILITY
SYRACUSE, NEW YORK
POST-SSDS SUBSLAB AND
INDOOR AIR SAMPLING
RESULTS

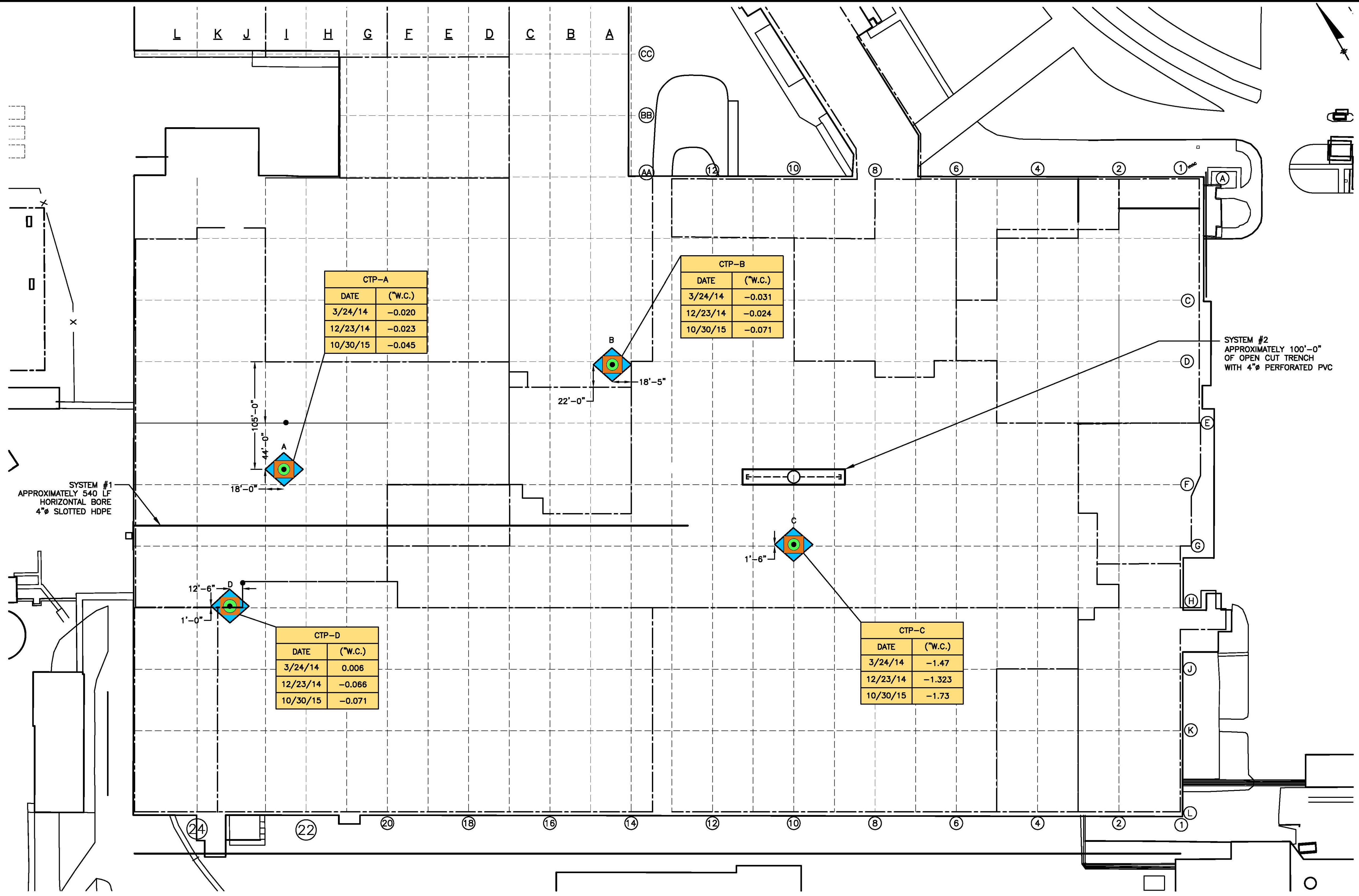


FILE NO. 15388.51661-001
MARCH 2014



Dec 02, 2015 - 3:19pm

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LEGEND

--- TENANT SPACE OUTLINES

A

 PERMANENT COMMUNICATION TEST POINT (CTP). THE LETTER ABOVE THE SYMBOL INDICATES THE CTP ID, THE PRESSURE READING IS MEASURED IN UNITS OF INCHES OF WATER COLUMN ("W.C.")

CTP-A	
DATE	("W.C.")
3/24/14	-0.020
12/23/14	-0.023
10/30/15	-0.045

CTP-B	
DATE	("W.C.")
3/24/14	-0.031
12/23/14	-0.024
10/30/15	-0.071

CTP-D	
DATE	("W.C.")
3/24/14	0.006
12/23/14	-0.066
10/30/15	-0.071

CTP-C	
DATE	("W.C.")
3/24/14	-1.47
12/23/14	-1.323
10/30/15	-1.73

SYSTEM #2
 APPROXIMATELY 100'-0"
 OF OPEN CUT TRENCH
 WITH 4" PERFORATED PVC

SYSTEM #1
 APPROXIMATELY 540 LF
 HORIZONTAL BORE
 4" SLOTTED HDPE

PLAN

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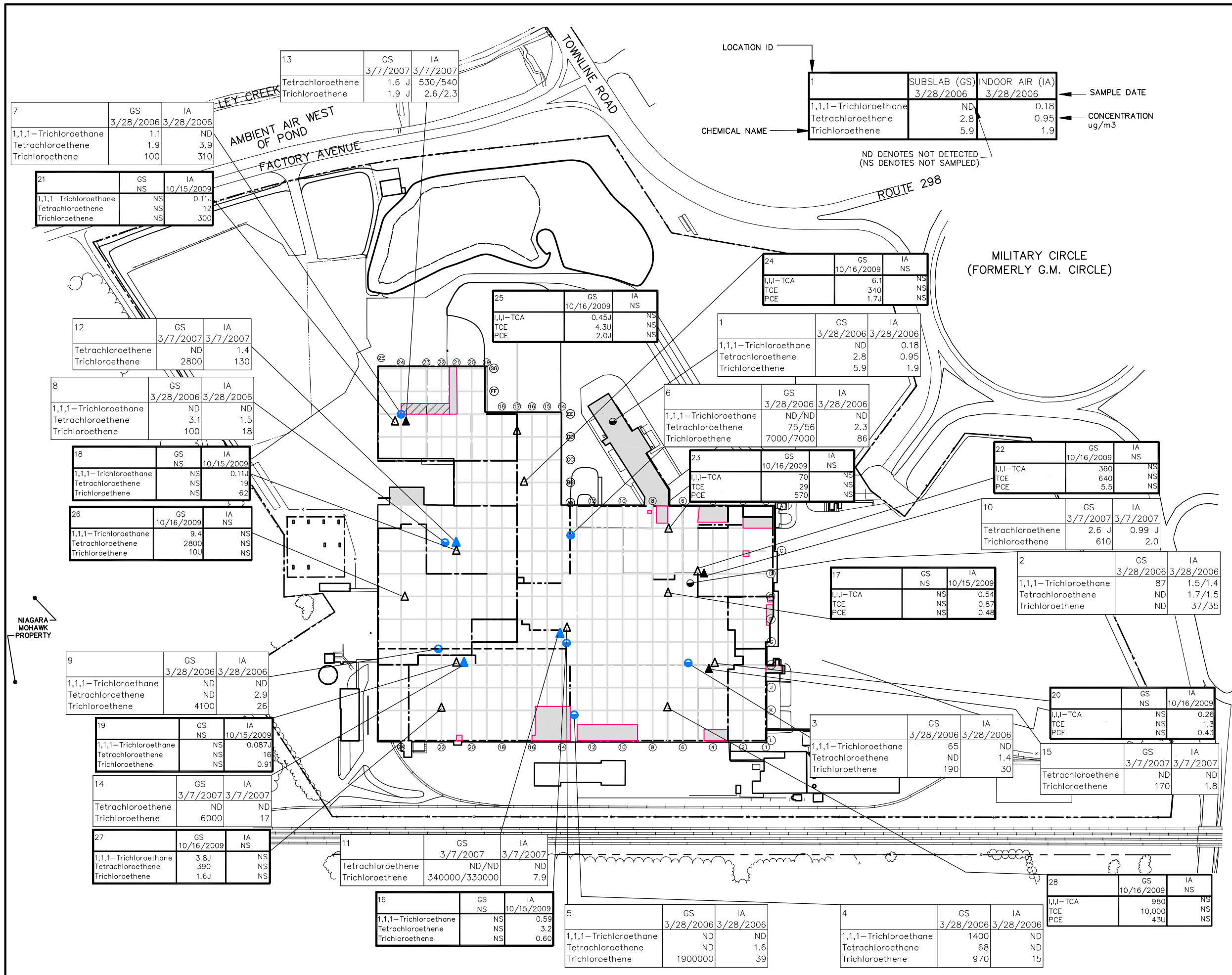
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VAPOR INTRUSION MITIGATION SYSTEM
 POST-MITIGATION PERMANENT
 COMMUNICATION TEST
 POINT LOCATIONS AS-BUILT

FILE NO. 15388.61859-001
DATE 12/2/15



LEGEND

- PROPERTY LINE
- ☁ TREE LINE
- x-x-x FENCE
- GUARDRAIL
- TENANT SPACE OUTLINES
- Office Area
- 2ND FLOOR AREA
- SUB-SLAB DEPRESSURIZATION SYSTEM
- ▲ 2009 SUBSLAB & INDOOR AIR SAMPLE LOCATIONS
- ▲ 2006/2007 SUBSLAB & INDOOR AIR SAMPLE LOCATIONS ABOVE 5ug/M³ IA, AND 50 ug/M³ GS
- ▲ 2007 SUBSLAB & INDOOR AIR SAMPLE LOCATIONS
- 2006 SUBSLAB & INDOOR AIR SAMPLE LOCATIONS

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