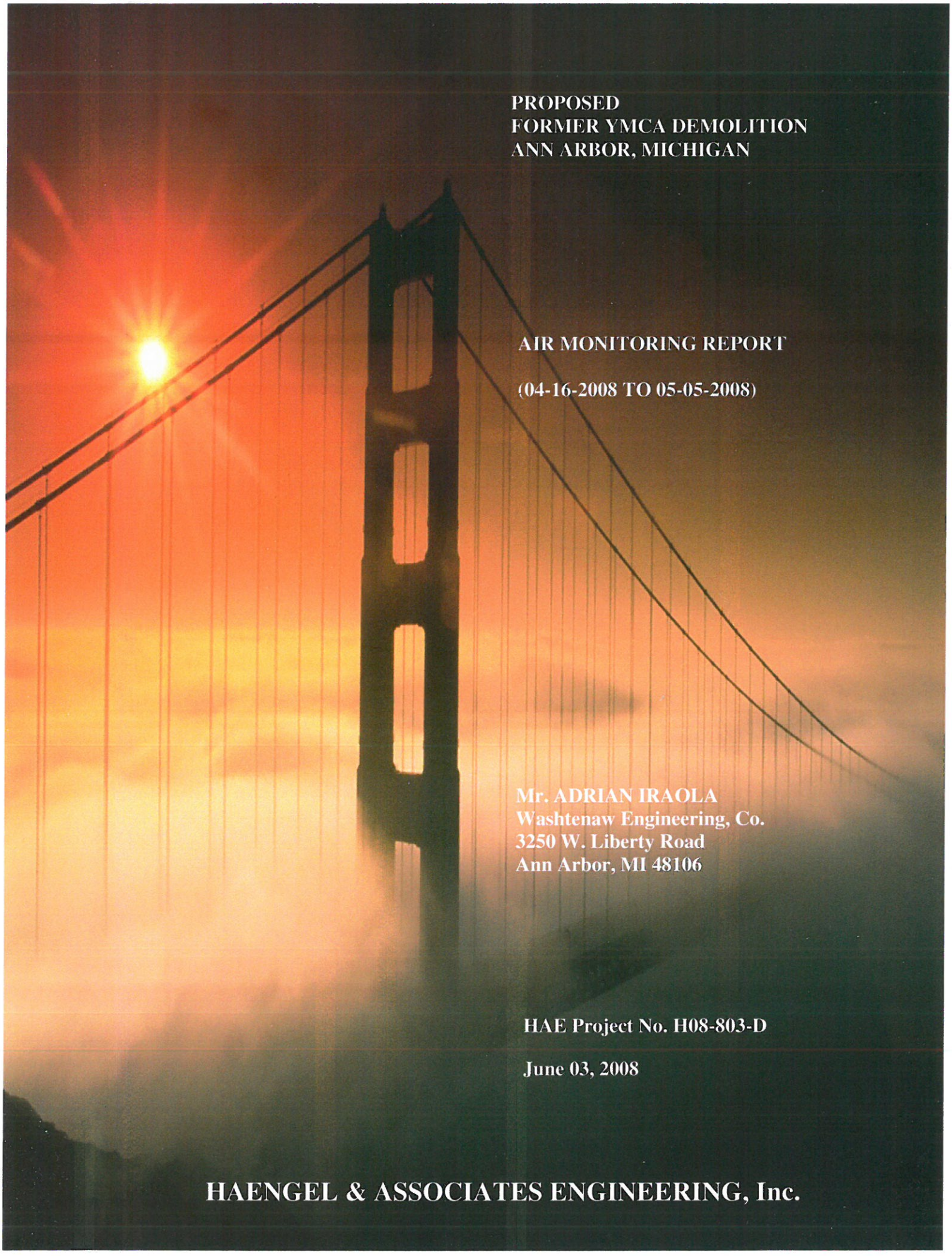

PROPOSED
FORMER YMCA DEMOLITION
ANN ARBOR, MICHIGAN

AIR MONITORING REPORT

(04-16-2008 TO 05-05-2008)

Mr. ADRIAN IRAOLA
Washtenaw Engineering, Co.
3250 W. Liberty Road
Ann Arbor, MI 48106

HAE Project No. H08-803-D

June 03, 2008

HAENGEL & ASSOCIATES ENGINEERING, Inc.

H.A.E., Inc.
ENGINEERING DIVISION
Geotechnical Environmental Structural Construction

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June 02, 2008

Mr. Adrian Iraola
Washtenaw Engineering, Co.
3250 W. Liberty Road
Ann Arbor, Michigan 48106

Re: Environmental Sampling Activities
Former Ann Arbor YMCA Building Demolition
350 S. Fifth Avenue
Ann Arbor, Michigan
HAE Project No. H08-803-D

Dear Mr. Iraola:

In accordance with your request, Haengel and Associates Engineering, Inc. (HAE) has completed air monitoring activities during demolition activities at the referenced former Ann Arbor YMCA building to verify that action levels for fugitive dust and lead were not exceeded.

This letter report documents our site activities and procedures and summarizes our findings with respect to on-site testing during demolition activities.

Background Information

The former Ann Arbor YMCA building was demolished by Adamo Demolition of Detroit, MI. During demolition activities, the surrounding areas were monitored for both Nuisance dust and airborne lead contaminants using Flame Atomic Adsorption.

Air samples were obtained between April 16 and May 5, 2008 during demolition activities. The air samples obtained were collected and tested for either total Lead in air by Flame AAS following NIOSHA Method 7082 or Nuisance using NIOSHA Method 500. The sampling locations are identified within the site as shown on daily reports.

Air Sampling Activities During Site Demolition
Former Ann Arbor YMCA – 350 South Fifth Avenue, Ann Arbor, Michigan
June 2, 2008
HAE Project No. H08-803-D

The samples obtained for Lead are summarized in Table 1.

Date	Sampling Point	Volume Size In Liters	Test Method	Detection Limit	Sample Result
4-16-08	S-1	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-17-08	S-1	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-17-08	S-1	420	NIOSH 7082	9.5 µg/m^3	<9.5 µg/m^3
4-17-08	S-2	420	NIOSH 7082	9.5 µg/m^3	<9.5 µg/m^3
4-17-08	S-3	367.5	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-17-08	S-4	367.5	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-17-08	S-6	315	NIOSH 7082	13 µg/m^3	<13 µg/m^3
4-17-08	S-7	315	NIOSH 7082	13 µg/m^3	<13 µg/m^3
4-17-08	S-8	270	NIOSH 7082	15 µg/m^3	<15 µg/m^3
4-17-08	S-9	270	NIOSH 7082	15 µg/m^3	<15 µg/m^3
4-18-08	S-1	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-18-08	S-2	315	NIOSH 7082	13 µg/m^3	<13 µg/m^3
4-18-08	S-3	315	NIOSH 7082	13 µg/m^3	<11 µg/m^3
4-18-08	S-4	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-19-08	S-1	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-19-08	S-2	270	NIOSH 7082	15 µg/m^3	<15 µg/m^3
4-19-08	S-3	350	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-19-08	S-4	262.5	NIOSH 7082	15 µg/m^3	<15 µg/m^3
4-21-08	S-1	315	NIOSH 7082	13 µg/m^3	<13 µg/m^3
4-21-08	S-2	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-21-08	S-3	270	NIOSH 7082	15 µg/m^3	<15 µg/m^3
4-21-08	S-4	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-22-08	S-1	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-22-08	S-2	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-22-08	S-3	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-22-08	S-4	270	NIOSH 7082	15 µg/m^3	<15 µg/m^3
4-23-08	S-2	400	NIOSH 7082	10 µg/m^3	<10 µg/m^3
4-23-08	S-4	500	NIOSH 7082	8 µg/m^3	< 8 µg/m^3
4-24-08	S-3	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3

Air Sampling Activities During Site Demolition
Former Ann Arbor YMCA – 350 South Fifth Avenue, Ann Arbor, Michigan
June 2, 2008
HAE Project No. H08-803-D

Table 1 - Continued

Date	Sampling Point	Volume Size In Liters	Test Method	Detection Limit	Sample Result
4-24-08	S-4	315	NIOSH 7082	13 µg/m^3	<13 µg/m^3
4-26-08	S-4	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-26-08	S-5	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-27-08	S-2	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-28-08	S-2	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-28-08	S-4	315	NIOSH 7082	13 µg/m^3	<13 µg/m^3
4-29-08	S-2	315	NIOSH 7082	13 µg/m^3	<13 µg/m^3
4-29-08	S-4	315	NIOSH 7082	13 µg/m^3	<13 µg/m^3
4-29-08	S-2	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
4-29-08	S-4	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
5-04-08	S-1	1080	NIOSH 7082	3.7 µg/m^3	<3.7 µg/m^3
5-04-08	S-2	1080	NIOSH 7082	3.7 µg/m^3	<3.7 µg/m^3
5-04-08	S-3	945	NIOSH 7082	4.2 µg/m^3	<4.2 µg/m^3
5-04-08	S-4	945	NIOSH 7082	4.2 µg/m^3	<4.2 µg/m^3
5-05-08	S-1	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3
5-05-08	S-2	360	NIOSH 7082	11 µg/m^3	<11 µg/m^3

Air Sampling Activities During Site Demolition
Former Ann Arbor YMCA – 350 South Fifth Avenue, Ann Arbor, Michigan
June 2, 2008
HAE Project No. H08-803-D

The samples obtained for Dust are summarized in Table 2.

Date	Sampling Point	Volume Size In Liters	Test Method	Detection Limit	Sample Result
4-16-08	S-2	60	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-16-08	S-3	60	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-16-08	S-4	60	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-16-08	S-5	60	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-17-08	S-5	52.5	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-17-08	S-10	60	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-18-08	S-5	45.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-18-08	S-	52.5	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-19-08	S-5	52.5	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-19-08	S-6	52.5	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-21-08	S-5	52.5	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-22-08	S-5	52.5	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-23-08	S-1	50.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-23-08	S-3	50.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-24-08	S-1	60.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-24-08	S-2	60.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-25-08	S-1	70.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-25-08	S-3	60.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-26-08	S-1	90.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-26-08	S-2	90.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-26-08	S-3	90.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-27-08	S-1	60.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-28-08	S-1	60.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-28-08	S-3	60.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-29-08	S-1	60.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-29-08	S-3	60.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
4-30-08	S-1	90.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
5-04-08	S-5	60.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3
5-05-08	S-1	60.0	NIOSH 0500	0.02 mg/sample	<0.2 mg/m^3

In summary, the tests results were all reported as non-detect, below the limits of detection for the respective test method. We thank you for the opportunity to provide our services on this project. If there are any questions regarding our letter report, please contact us at 734-455-9771.

Respectfully,

HAENGEL & ASSOCIATES ENGINEERING, INC.

Jefferey T. Anagnostou, P.E., C.P.G.
Project Consultant

Anthony S. Nestor, P.E.
Project Engineer

2 pc: encl.

PARTICULATES NOT OTHERWISE REGULATED, TOTAL 0500

DEFINITION: total aerosol mass CAS: NONE RTECS: NONE

METHOD: 0500, Issue 2 EVALUATION: FULL Issue 1: 15 February 1984
Issue 2: 15 August 1994

OSHA: 15 mg/m³
NIOSH: no REL
ACGIH: 10 mg/m³, total dust less than 1% quartz

PROPERTIES: contains no asbestos and quartz less than 1%

SYNONYMS: nuisance dusts; particulates not otherwise classified

SAMPLING

SAMPLER:	FILTER (tared 37-mm, 5-µm PVC filter)
FLOW RATE:	1 to 2 L/min
VOL-MIN:	7 L @ 15 mg/m³
-MAX:	133 L @ 15 mg/m³
SHIPMENT:	routine
SAMPLE STABILITY:	indefinitely
BLANKS:	2 to 10 field blanks per set
BULK SAMPLE:	none required

ACCURACY

RANGE STUDIED: 8 to 28 mg/m³
BIAS: 0.01%
OVERALL PRECISION ($\hat{S}_{rT}$): 0.058 [1]
ACCURACY: ± 11.04%

MEASUREMENT

TECHNIQUE:	GRAVIMETRIC (FILTER WEIGHT)
ANALYTE:	airborne particulate material
BALANCE:	0.001 mg sensitivity; use same balance before and after sample collection
CALIBRATION:	National Institute of Standards and Technology Class S-1.1 weights or ASTM Class 1 weights
RANGE:	0.1 to 2 mg per sample
ESTIMATED LOD:	0.03 mg per sample
PRECISION ($\hat{S}_r$):	0.026 [2]

APPLICABILITY: The working range is 1 to 20 mg/m³ for a 100-L air sample. This method is nonspecific and determines the total dust concentration to which a worker is exposed. It may be applied, e.g., to gravimetric determination of fibrous glass [3] in addition to the other ACGIH particulates not otherwise regulated [4].

INTERFERENCES: Organic and volatile particulate matter may be removed by dry ashing [3].

OTHER METHODS: This method is similar to the criteria document method for fibrous glass [3] and Method 5000 for carbon black. This method replaces Method S349 [5]. Impingers and direct-reading instruments may be used to collect total dust samples, but these have limitations for personal sampling.

EQUIPMENT:

1. Sampler: 37-mm PVC, 2- to 5-µm pore size membrane or equivalent hydrophobic filter and supporting pad in 37-mm cassette filter holder.
2. Personal sampling pump, 1 to 2 L/min, with flexible connecting tubing.
3. Microbalance, capable of weighing to 0.001 mg.
4. Static neutralizer: e.g., Po-210; replace nine months after the production date.
5. Forceps (preferably nylon).
6. Environmental chamber or room for balance (e.g., 20 °C ± 1 °C and 50% ± 5% RH).

SPECIAL PRECAUTIONS: None.

PREPARATION OF FILTERS BEFORE SAMPLING:

1. Equilibrate the filters in an environmentally controlled weighing area or chamber for at least 2 h. NOTE: An environmentally controlled chamber is desirable, but not required.
2. Number the backup pads with a ballpoint pen and place them, numbered side down, in filter cassette bottom sections.
3. Weigh the filters in an environmentally controlled area or chamber. Record the filter tare weight, W_1 (mg).
   a. Zero the balance before each weighing.
   b. Handle the filter with forceps. Pass the filter over an antistatic radiation source. Repeat this step if filter does not release easily from the forceps or if filter attracts balance pan. Static electricity can cause erroneous weight readings.
4. Assemble the filter in the filter cassettes and close firmly so that leakage around the filter will not occur. Place a plug in each opening of the filter cassette. Place a cellulose shrink band around the filter cassette, allow to dry and mark with the same number as the backup pad.

SAMPLING:

5. Calibrate each personal sampling pump with a representative sampler in line.
6. Sample at 1 to 2 L/min for a total sample volume of 7 to 133 L. Do not exceed a total filter loading of approximately 2 mg total dust. Take two to four replicate samples for each batch of field samples for quality assurance on the sampling procedure.

SAMPLE PREPARATION:

7. Wipe dust from the external surface of the filter cassette with a moist paper towel to minimize contamination. Discard the paper towel.
8. Remove the top and bottom plugs from the filter cassette. Equilibrate for at least 2 h in the balance room.
9. Remove the cassette band, pry open the cassette, and remove the filter gently to avoid loss of dust.
   NOTE: If the filter adheres to the underside of the cassette top, very gently lift away by using the dull side of a scalpel blade. This must be done carefully or the filter will tear.

CALIBRATION AND QUALITY CONTROL:

10. Zero the microbalance before all weighings. Use the same microbalance for weighing filters before and after sample collection. Maintain and calibrate the balance with National Institute of Standards and Technology Class S-1.1 or ASTM Class 1 weights.

11. The set of replicate samples should be exposed to the same dust environment, either in a laboratory dust chamber [7] or in the field [8]. The quality control samples must be taken with the same equipment, procedures and personnel used in the routine field samples. The relative standard deviation calculated from these replicates should be recorded on control charts and action taken when the precision is out of control [7].

MEASUREMENT:

12. Weigh each filter, including field blanks. Record the post-sampling weight, W_2 (mg). Record anything remarkable about a filter (e.g., overload, leakage, wet, torn, etc.)

CALCULATIONS:

13. Calculate the concentration of total particulate, C (mg/m^3), in the air volume sampled, V (L):

$$C = \frac{(W_2 - W_1) - (B_2 - B_1) \cdot 10^3}{V}, \ mg/m^3.$$

where: W_1 = tare weight of filter before sampling (mg)
W_2 = post-sampling weight of sample-containing filter (mg)
B_1 = mean tare weight of blank filters (mg)
B_2 = mean post-sampling weight of blank filters (mg)

EVALUATION OF METHOD:

Lab testing with blank filters and generated atmospheres of carbon black was done at 8 to 28 mg/m^3 [2,6]. Precision and accuracy data are given on page 0500-1.

REFERENCES:

[1] NIOSH Manual of Analytical Methods, 3rd ed., NMAM 5000, DHHS (NIOSH) Publication No. 84-100 (1984).
[2] Unpublished data from Non-textile Cotton Study, NIOSH/DRDS/EIB.
[3] NIOSH Criteria for a Recommended Standard ... Occupational Exposure to Fibrous Glass U.S. Department of Health, Education, and Welfare, Publ. (NIOSH) 77-152, 119-142 (1977).
[4] 1993-1994 Threshold Limit Values and Biological Exposure Indices, Appendix D, ACGIH, Cincinnati, OH (1993).
[5] NIOSH Manual of Analytical Methods, 2nd ed., V. 3, S349, U.S. Department of Health, Education, and Welfare, Publ. (NIOSH) 77-157-C (1977).
[6] Documentation of the NIOSH Validation Tests, S262 and S349, U.S. Department of Health, Education, and Welfare, Publ. (NIOSH) 77-185 (1977).
[7] Bowman, J.D., D.L. Bartley, G.M. Breuer, L.J. Doemeny, and D.J. Murdock. Accuracy Criteria Recommended for the Certification of Gravimetric Coal Mine Dust Personal Samplers. NTIS Pub. No. PB 85-222446 (1984).
[8] Breslin, J.A., S.J. Page, and R.A. Jankowski. Precision of Personal Sampling of Respirable Dust in Coal Mines. U.S. Bureau of Mines Report of Investigations #8740 (1983).

METHOD REVISED BY:

Jerry Clere and Frank Hearl, P.E., NIOSH/DRDS.

LEAD by Flame AAS

7082

Pb MW: 207.19 (Pb) CAS: 7439-92-1 (Pb) RTECS: OF7525000 (Pb)
223.19 (PbO) 1317-36-8 (PbO) OG1750000 (PbO)

METHOD: 7082, Issue 2 **EVALUATION:** FULL **Issue 1:** 15 February 1984 **Issue 2:** 15 August 1994

OSHA: 0.05 mg/m³
NIOSH: <0.1 mg/m³; blood Pb ≤60 µg/100 g
ACGIH: 0.05 mg/m³

PROPERTIES: soft metal; d 11.3 g/cm³; MP 327.5 °C; valences +2, +4 in salts

SYNONYMS: elemental lead and lead compounds except alkyl lead

SAMPLING		MEASUREMENT	
SAMPLER:	FILTER (0.8-µm cellulose ester membrane)	**TECHNIQUE:**	ATOMIC ABSORPTION SPECTROPHOTOMETER, FLAME
FLOW RATE:	1 to 4 L/min	**ANALYTE:**	lead
VOL-MIN:	200 L @ 0.05 mg/m³	**ASHING:**	conc. HNO_3, 6 mL + 30% H_2O_2, 1 mL; 140 °C
-MAX:	1500 L	**FINAL SOLUTION:**	10% HNO_3, 10 mL
SHIPMENT:	routine	**FLAME:**	air-acetylene, oxidizing
SAMPLE STABILITY:	stable	**WAVELENGTH:**	283.3 nm
BLANKS:	2 to 10 field blanks per set	**BACKGROUND CORRECTION:**	D_2 or H_2 lamp, or Zeeman
ACCURACY		**CALIBRATION:**	Pb^{2+} in 10% HNO_3
RANGE STUDIED:	0.13 to 0.4 mg/m³ [1]; 0.15 to 1.7 mg/m³ (fume) [2]	**RANGE**	10 to 200 µg per sample [2,3]
BIAS:	- 3.1%	**ESTIMATED LOD:**	2.6 µg per sample [4]
OVERALL PRECISION ($\hat{S}_{rT}$):	0.072 [1]; 0.068 (fume) [2]	**PRECISION ($\hat{S}_r$):**	0.03 [1]
ACCURACY:	± 17.6%		

APPLICABILITY: The working range is 0.05 to >1 mg/m³ for a 200-L air sample. The method is applicable to elemental lead, including Pb fume, and all other aerosols containing lead. This is an elemental analysis, not compound specific. Aliquots of the samples can be analyzed separately for additional elements.

INTERFERENCES: Use D_2 or H_2 continuum or Zeeman background correction to control flame or molecular absorption. High concentrations of calcium, sulfate, carbonate, phosphate, iodide, fluoride, or acetate can be corrected.

OTHER METHODS: This method combines and replaces P&CAM 173 [3] and S341 [4,5] for lead. Method 7300 (ICP-AES) and 7105 (AAS/GF) are alternate analytical methods. Method 7505 is specific for lead sulfide. The following have not been revised: the dithizone method, which appears in P&CAM 102 [5] and the lead criteria document [6]; and P&CAM 191 (ASV) [7].

REAGENTS:

1. Nitric acid, conc.*
2. Nitric acid, 10% (v/v). Add 100 mL conc. HNO_3 to 500 mL water; dilute to 1 L.
3. Hydrogen peroxide, 30% H_2O_2 (w/w), reagent grade.*
4. Calibration stock solution, 1000 µg/mL Pb. Commercial standard or dissolve 1.00 g Pb metal in minimum volume of (1+1) HCl and dilute to 1 L with 1% (v/v) HCl. Store in a polyethylene bottle. Stable ≥ one year.
5. Air, compressed, filtered.
6. Acetylene
7. Distilled or deionized water.

* See SPECIAL PRECAUTIONS.

EQUIPMENT:

1. Sampler: Cellulose ester filter, 0.8-µm pore size, 37-mm diameter, in cassette filter holder.
2. Personal sampling pump, 1 to 4 L/min, with flexible connecting tubing.
3. Atomic Absorption Spectrophotometer with an air-acetylene burner head and background correction.
4. Lead hollow cathode lamp or electrode dischargeless lamp.
5. Regulators, two-stage, for air and acetylene.
6. Beakers, Phillips, 125-mL, or Griffin, 50-mL with watchglass covers.**
7. Volumetric flasks, 10- and 100-mL.**
8. Assorted volumetric pipets as needed.**
9. Hotplate, surface temperature 140°C.
10. Bottles, polyethylene, 100-mL.

** Clean all glassware with conc. nitric acid and rinse thoroughly with distilled or deionized water before use.

SPECIAL PRECAUTIONS: Concentrated nitric acid is an irritant and may burn skin. Perform acid digestions in a fume hood. Hydrogen peroxide is a strong oxidizing agent, a strong irritant, and corrosive to the skin. Wear gloves and eye protection.

SAMPLING:

1. Calibrate each personal sampling pump with a representative sampler in line.
2. Sample at an accurately known flow rate between 1 and 4 L/min for up to 8 h for a total sample size of 200 to 1500 L for TWA measurements. Do not exceed a filter loading of ca. 2 mg total dust.

SAMPLE PREPARATION:

NOTE 1: The following sample preparation gave quantitative recovery (see EVALUATION OF METHOD) [4]. Steps 4 through 9 of Method 7300 or other quantitative ashing techniques may be substituted, especially if several metals are to be determined on a single filter.

NOTE 2: The Appendix gives a microwave digestion procedure which may be necessary for complete recovery of lead from some matrices, especially epoxy-based paint.

3. Open the cassette filter holders and transfer the samples and blanks to clean beakers.
4. Add 3 mL conc. HNO_3, and 1 mL 30% H_2O_2 and cover with a watchglass. Start reagent blanks at this step.
   NOTE: If PbO_2 is not present in the sample, the 30% H_2O_2 need not be added [2,4].
5. Heat on 140 °C hotplate until volume is reduced to about 0.5 mL.
6. Repeat two more times using 2 mL conc. HNO_3 and 1 mL 30% H_2O_2 each time.
7. Heat on 140 °C hotplate until ca. 0.5 mL liquid remains.
8. When sample is dry, rinse the watchglass and walls of the beaker with 3 to 5 mL 10% HNO_3. Allow the solution to evaporate to dryness.
9. Cool each beaker and dissolve the residues in 1 mL conc. HNO_3
10. Transfer the solution quantitatively to a 10-mL volumetric flask and dilute to volume with distilled water.

NOTE: If the concentration (M) of any of the following is expected to exceed the lead concentration (M) by 10-fold or more, add 1 mL 1 M Na_2EDTA to each flask before dilution to volume: CO_3^{2-}, PO_4^{3-}, I^-, F^-, CH_3COO^-. If Ca^{2+} or SO_4^{2-} are present in 10-fold or greater excess, make all standards and samples 1% (w/w) in La[3].

CALIBRATION AND QUALITY CONTROL:

11. Prepare a series of working standards covering the range 0.25 to 20 µg/mL Pb (2.5 to 200 µg Pb per sample).
    a. Add aliquots of calibration stock solution to 100-mL volumetric flasks. Dilute to volume with 10% HNO_3. Store the working standards in polyethylene bottles and prepare fresh weekly.
    b. Analyze the working standards together with the blanks and samples (steps 14 and 15).
    c. Prepare a calibration graph of absorbance vs. solution concentration (µg/mL).
12. Aspirate a standard for every 10 samples to check for instrument drift.
13. Check recoveries with at least one spiked media blank per 10 samples. Use method of standard additions occasionally to check for interferences.

MEASUREMENT:

14. Set spectrophotometer as specified by the manufacturer and to conditions on page 7082-1.
    NOTE: An alternate wavelength is 217.0 nm [8]. Analyses at 217.0 nm have slightly greater sensitivity, but poorer signal-to-noise ratio compared to 283.3 nm. Also, non atomic absorption is significantly greater at 217.0 nm, making the use of D or H_2 continuum, or Zeeman background correction mandatory at that wavelength.
15. Aspirate standards, samples, and blanks. Record absorbance readings.
    NOTE: If the absorbance values for the samples are above the linear range of the standards, dilute with 10% HNO_3, reanalyze, and apply the appropriate dilution factor in the calculations.

CALCULATIONS:

16. Using the measured absorbances, calculate the corresponding concentrations (µg/mL) of lead in the sample, C_s, and average media blank, C_b, from the calibration graph.
17. Using the solution volumes (mL) of the sample, V_s, and media blanks, V_b, calculate the concentration, C (mg/m³), of lead in the air volume sampled, V (L):

$$C = \frac{C_s V_s - C_b V_b}{V}, \text{ mg/m}^3.$$

NOTE: µg/mL ≡ mg/m

EVALUATION OF METHOD:

Method S341 [9] was issued on October 24, 1975, and validated over the range 0.13 to 0.4 mg/m³ for a 180-L air sample, using generated atmospheres of lead nitrate [1]. Recovery in the range 18 to 72 µg Pb per sample was 98%, and collection efficiency of 0.8-µm mixed cellulose ester filters (Millipore Type AA) was 100% for the aerosols. Subsequent studies on analytical recovery of 200 µg Pb per sample gave the following results [2,4]:

Species	Digestion Method	Analytical Recovery, %
Pb metal	HNO_3 only	92 ± 4
Pb metal	$HNO_3 + H_2O_2$	103 ± 3
PbO	HNO_3 only	93 ± 4
PbS	HNO_3 only	93 ± 5
PbO_2	HNO_3 only	82 ± 3
PbO_2	$HNO_3 + H_2O_2$	100 ± 1
Pb in paint*	HNO_3 only	95 ± 6
Pb in paint*	$HNO_3 + H_2O_2$	95 ± 6

*Standard Reference Material #1579, U.S. National Institute of Standards and Technology.

Additional collection efficiency studies were also done using Gelman GN-4 filters for the collection of Pb fume, which had geometric mean diameter of 0.1 µm [2]. Mean collection efficiency for 24 sampling runs at flow rates between 0.15 and 4.0 L/min was > 97 ± 2%. Overall precision, $\hat{S}_{rT}$, was 0.072 for lead nitrate aerosol [1,9] and 0.068 for Pb fume [2,4].

REFERENCES:

[1] Documentationof the NIOSH Validation Tests, U.S. Department of Health, Education, and Welfare, Publ. (NIOSH) 77-185 (1977).

[2] Heavy Metal Aerosols: Collection and Dissolution Efficiencies, Final Report of NIOSH Contract 210-79-0058, W. F. Gutknecht, M. H. Ranade, P. M. Grohse, A. Damle, and D. O'Neal, Research Triangle Institute; available as Order No. PB 83-106740 from NTIS, Springfield, VA 22161 (1981).

[3] NIOSH Manual of Analytical Methods, 2nd ed., V. 5, P&CAM 173, U.S. Department of Health, Education, and Welfare, Publ. (NIOSH) 77-157-A (1979).

[4] NIOSH Manual of Analytical Methods, 2nd ed., V. 7, S341 (revised 3/25/81), U.S. Department of Health and Human Services, Publ. (NIOSH) 82-100 (1982).

[5] NIOSH Manual of Analytical Methods, 2nd. ed., V. 1, P&CAM 102, U.S. Department of Health, Education, and Welfare, Publ. (NIOSH) 77-157-A (1977).

[6] Criteria for a Recommended Standard...Occupational Exposure to Inorganic Lead (Revised Criteria), U.S. Department of Health, Education, and Welfare, Publ. (NIOSH) 78-158 (1978).

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[8] Analytical Methods for Atomic Absorption Spectrophotometry, Perkin-Elmer (1976).

[9] NIOSH Manual of Analytical Methods, 2nd ed., V. 3, S341, U.S. Department of Health, Education, and Welfare, Publ. (NIOSH) 77-157-C (1977).

[10] DataChem Laboratories in-house procedure for microwave sample digestion.

[11] Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Ed; U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. U.S. Government Printing Office: Washington, DC, SW-846 (1986).

[12] Kingston, H.M. and L.B. Jassie, "Safety Guidelines for Microwave Systems in the Analytical Laboratory." Introduction to Microwave Acid Decomposition: Theory and Practice; Kingston, H.M. and Jassie, L.B., Eds.; ACS Professional Reference Book Series; American Chemical Society: Washington, DC, (1988).

[13] 1985 Annual Book of ASTM Standards, Vol. 11.01; "Standard Specification for Reagent Water; ASTM, Philadelphia, PA, D1193 – 77 (1985).

[14] Introduction to Microwave Sample Preparation: Theory and Practice; Kingston, H.M. and Jassie, L.B., Eds.; ACS Professional Reference Book Series; American Chemical Society: Washington DC (1988).

[15] Kingston, H.M. EPA IAG #DW1-393254-01-0 January 1 – March 31, 1988, Quarterly Report.

[16] Binstock, D.A., Yeager, W.M., Grohse, P.M. and Gaskill, A. Validation of a Method for Determining Elements in Solid Waste by Microwave Digestion, Research Triangle Institute Technical Report Draft, RTI Project Number 321U-3579-24, prepared for the Office of Solid Waste, U.S. Environmental Protection Agency, Washington, DC 20460 (November, 1989).

METHOD REVISED BY:

Mark Millson, NIOSH/DPSE and R. DeLon Hull, Ph.D., NIOSH/DBBS; S341 originally validated under NIOSH Contract CDC-94-74-45; additional studies under NIOSH Contract 210-79-0058.

James B. Perkins, David L. Wheeler, and Keith Nicholson, Ph.D., DataChem Laboratories, Salt Lake City, UT, prepared the microwave digestion procedure in the Appendix.

APPENDIX - MICROWAVE DIGESTION FOR LEAD IN PAINT CHIPS (AND OTHER MATRICES)

This procedure is an alternative to the procedure presented in the Sample Preparation section of this method. It provides a rapid, complete acid digestion prior to analysis by flame atomic absorption (FAA), heated graphite furnace atomic absorption(HGFAA), and inductively coupled plasma spectroscopy (ICP) [10].

Apparatus and Material[11-16]

1. Microwave apparatus requirements
   a. The microwave unit provides programmable power with a minimum of 574 W and can be programmed to within ± 10 W of the required power.
   b. The microwave unit cavity is corrosion resistant as well as ventilated. All electronics are protected against corrosion for safe operation.
   c. The system requires Teflon PFA digestion vessels (120-mL capacity) capable of withstanding pressures up to 7.5 ± 0.7 atm (110 ± 10 psi) and capable of controlled pressure relief at pressures exceeding 7.5 ± 0.7 atm (110 ± 10 psi).
   d. A rotating turntable is employed to ensure homogeneous distribution of microwave radiation within the unit. The speed of the turntable should be a minimum of 3 rpm.
   e. A safety concern relates to the useof sealed containers without pressure relief valves in the unit. Temperature is the important variable controlling the reaction. Pressure is needed to attain elevated temperatures but must be safely contained [12].
   f. Polymeric volumetric ware in plastic (Teflon or polyethylene), 50- or 100-mL capacity.
   g. Disposable polypropylene filter funnel.
   h. Analytical balance, 300-g capacity, and minimum ± 0.001 g.

Reagents

1. Nitric acid, concentrated, spectroscopy grade.
2. Reagent Water. Reagent water shall be interference free. All references to water in the method refer to reagent water that meets the ASTM Type 2 standard.

Procedure

1. Calibration of Microwave Equipment
   Calibrate microwave equipment in accordance with manufacturer's instructions. If calibration instructions are not available, see EPA Method 3051 [11].
2. All digestion vessels and volumetric ware must be carefully acid washed and rinsed with reagent water. All digestion vessels should be cleaned by leaching with hot (1:1) nitric acid for a minimum of fifteen minutes, rinsed with reagent water, and dried in a clean environment.
3. Sample Digestion
   a. Tare the Teflon PFA digestion vessel.
   b. Weigh out 0.1 g paint chip sample to the nearest 0.001 g into the tared Teflon PFA sample vessel. With large paint chip samples, measure out a 2 cm piece, weigh to the nearest 0.001 g, and quantitatively transfer it to the vessel.
   c. Add 5.0 ± 0.1 mL concentrated nitric acid to the sample vessel in a fume hood. If a vigorous reaction occurs, allow the reaction to stop before capping the vessel. Cap the vessel and torque the cap to 12 ft-lb (16 N-m) according to the manufacturer's directions. The sample vessel may be connected to an overflow vessel using Teflon PFA connecting tubes. Place the vessels in the microwave carrousel. Connect the overflow vessels to the center well of the unit.
   d. Place the vessels evenly distributed in the turntable of the microwave unit using groups of two, six,

or 12 sample vessels. Any vessels containing 5 mL of nitric acid for reagent blank purposes are counted as sample vessels. When fewer than the recommended number of samples are to be digested, i.e., three samples plus one blank, the remaining vessels should be filled with 5 mL of nitric acid to achieve the full complement of vessels. This provides an energy balance since the microwave power absorbed is proportional to the total mass in the cavity [14]. Irradiate each group of samples to achieve a temperature of 180 °C in five minutes at a pressure of 50 psi. Continue to irradiate to achieve a temperature of 180 °C at 100 psi after 25 minutes. Continue digestion for five minutes. A sample digestion program for 12 samples is presented in the following table.

PROGRAM VARIABLES FOR PAINT CHIPS SAMPLE DIGESTION WITH NITRIC ACID

Stage	(1)	(2)	(3)
Power	90%	90%	0%
Pressure, psi	50	100	0
Run Time, min	10:00	20:00	05:00
Time @ P, min	05:00	15:00	00:00
Temperature	180°C	180°C	0°C
Fan Speed	100%	100%	100%

Number of Vessels:	12
Liquid Volume per Vessel:	5 mL
Sample Weight:	0.1 g

If the analyst wishes to digest other than two, six, or 12 samples at a time, use different values of power as long as they result in the same time and temperature conditions.

e. At the end of the microwave program, allow the vessels to cool for a minimum of five minutes before removing them from the microwave unit. If a loss of sample is detected (e.g., material in overflow collection vessel, liquid outside liner), determine the reason for the loss (e.g., loss of vessel seal integrity, use of a digestion time longer than 30 minutes, too large a sample, or improper heating conditions). Once the source of the loss has been corrected, prepare a new sample beginning at Section 2. If insufficient material is available for reanalysis, dilute remaining digestate and note that some sample loss may have occurred.

f. Uncap and vent each vessel in a fume hood. Add 20 mL reagent water, then reseal vessels and shake to mix thoroughly. Transfer the sample to an acid-cleaned polyethylene bottle. If the digested sample contains particulates which may clog nebulizers or interfere with injection of the sample into the instrument, allow the sample to settle or filter it:

Settling: Allow the sample to stand until the supernatant is clear (usually, overnight is sufficient). If it does not clear, filter the sample.

Filtering: The filtering apparatus must be thoroughly precleaned and rinsed with dilute nitric acid. Filter the sample through quantitative filter paper into a second acid-cleaned container.

The digestate is now ready for analysis for elements of interest using the appropriate method.

4. Calculations: Report the concentrations based on the actual weight of the original sample.

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Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42020 Koppermick Rd. Ste. 206
Canton, MI 48187

Fax: (734) 414-7421 Phone: (734) 414-7289
Project: **FORMER YMCA DEMOLITION ANN ARBOR, MI/08/803-D**

Customer ID: HAEI22
Customer PO:
Received: 04/18/08 8:40 AM
EMSL Order: 160805065
EMSL Proj:
Report Date: 4/18/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	*Analyzed*	*Volume*	*RDL*	*Lead Concentration*	*Notes*
0001	4/18/2008	360 L	11 µg/m³	<11 µg/m³	
Client Sample	PUMP P#1, SAMPLE S#1 DATE 4/16/08				***Collected:*** 4/17/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced execept in full, without written approval by EMSL. This report relates only to those Items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted

ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 4/18/2008 2:24:38 PM

PB w/RDL

160805063

Email: nael@earthlin
Client No: #AE122

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR,

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.CO

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third*
Company:	Haengel & Assoc. Engineering Inc.	**EMSL-Bill to:**	Haengel & Assoc. Engineering
Street:	42030 Koppernick Rd., Suite 318	**Street:**	42030 Koppernick Rd., Suite
Box #:		**Box #:**	
City/State:	Canton, MI **Zip** 48187	**City/State:**	Canton MI **Zip** 48
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition, Ann Arbor, MI. / #08-803-0	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ Air, NIOSH 7082 KF
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count &
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☒ ~~Nuisance Dust (NIOSH 0500 & 0600)~~
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) - **TOTAL SAMPLE #**

Relinquished:	4/18/08 4:40	**Date:**		**Time:**	
Received:	AW	**Date:**		**Time:**	
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

Rec'd A Brauer 4-18-08 840 pc WF

5065

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR,

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P#1, Sample S#1 Date 04-16-2008	NIOSH 7082/Total Lead/Flow rate 2.00 Ton: 12:00 Toff: 15:60 Location: 15'S, 35'E of NE corner of bldg.	Vol. air = 360(L)
Pump P#2, Sample S#2 Date 04-16-2008	NIOSH 0500/Total dust/Flow rate 2.0 Ton: 12:05 Toff: 12:35 Location: 12'S of SE corner of bldg.	Vol air = 60(L)
Pump P#3, Sample S#3 Date 04-16-2008	NIOSH 0500/Total dust/Flow rate 2.0 Ton: 12:10 Toff: 12:40 Location: 12'W of SW corner of bldg.	Vol. air = 60(L)
Pump P#4 Sample S#4 Date 04-16-2008	NIOSH 0500/Total dust/Flow rate 2.0 Ton: 12:15 Toff: 12:45 Location: 25'N of NW corner of bldg.	Vol. air = 60(L)
Pump P#5, Sample S#5 Date 04-16-2008	NIOSH 0500/Total Dust/Flow rate 2.0 Ton: 12:20 Toff: 12:50 Location: 45'N, 30'W of NE corner of bldg.	Vol. air = 60(L)

Relinquished: _____ **Date:** _____ **Time:** _____

Received: D. Brown **Date:** 4-18-08 **Time:** 840

Relinquished: _____ **Date:** _____ **Time:** _____

Received: _____ **Date:** _____ **Time:** _____

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42020 Koppernick Rd. Ste 318
Canton, MI. 48187

April 18, 2008

Ref Number: 080801170
Samples Received: April 17, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition, Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#2	12' S. of SE Corner of Bldg.	60	0.02	**<0.2**
S#3	12' W. of SW Corner of Bldg.	60	0.02	**<0.2**
S#4	25' N. of NW Corner of Bldg.	60	0.02	**<0.2**
S#5	45' N., 30' W. of NE Corner of Bldg.	60	0.02	**<0.2**

LOD-Estimated Limit Of Detection
* Modified
Reviewed by:

Approved Signatory

08080117D

Client No: HAE122

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third p*
Company:	Haengel & Assoc. Engineering, Inc.	**EMSL-Bill to:**	Haengel & Assoc. Engineering, In
Street:	42030 Koppernick Rd., Suite 318	**Street:**	42030 Koppernick Rd., Suite 3
Box #:		**Box #:**	
City/State:	Canton, MI **Zip** 48187	**City/State:**	Canton MI **Zip** 4818
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition, Ann Arbor, MI. / 408-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ ~~Air, NIOSH 7082~~
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & id
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☒ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S)

TOTAL SAMPLE #

RECEIVED
EMSL OF MICHIGAN
DATE: 4/17/09 TIME: 4:40
SIGNATURE

Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

086801170

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
~~Pump P#1, Sample S#1 Date 04-16-2008~~	~~NIOSH 7082/Total Lead/Flow rate: 2.00 Ton: 12:00 Toff: 15:00 Location: 15'S, 35'E of NE corner of bldg.~~	~~Vol. air = 360(L)~~
Pump P#2, Sample S#2 Date: 04-16-2008	NIOSH 0500/Total dust/Flow rate: 2.0 Ton: 12:05 Toff: 12:35 Location: 12'S. of SE corner of bldg.	Vol air = 60(L)
Pump P#3, Sample S#3 Date 04-16-2008	NIOSH0500 /Total dust/Flow rate: 2.0 Ton: 12:10 Toff: 12:40 Location 12'W of SW corner of bldg.	Vol. air = 60(L)
Pump P#4 Sample S#4 Date 04-16-2008	NIOSH0500/Total dust/Flow rate: 2.0 Ton: 12:15 Toff 12:45 Location: 25'N of NW corner of bldg.	Vol. air = 60(L)
Pump P#5, Sample S#5 Date 04-16-2008	NIOSH 0500/Total Dust/Flow rate: 2.0 Ton: 12:20 Toff: 12:50 Location: 45'N, 30'W of NE corner off bldg.	Vol. air = 60(L)

Relinquished: ______ Date: ______ Time: ______
Received: ______ Date: ______ Time: ______
Relinquished: ______ Date: ______ Time: ______
Received: ______ Date: ______ Time: ______

HAE

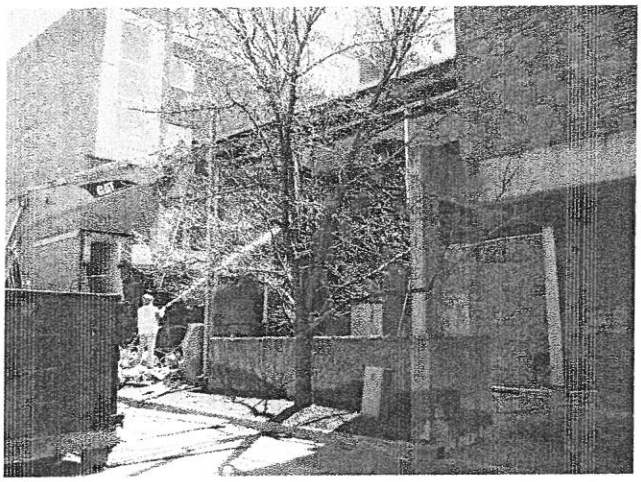
Geotechnical

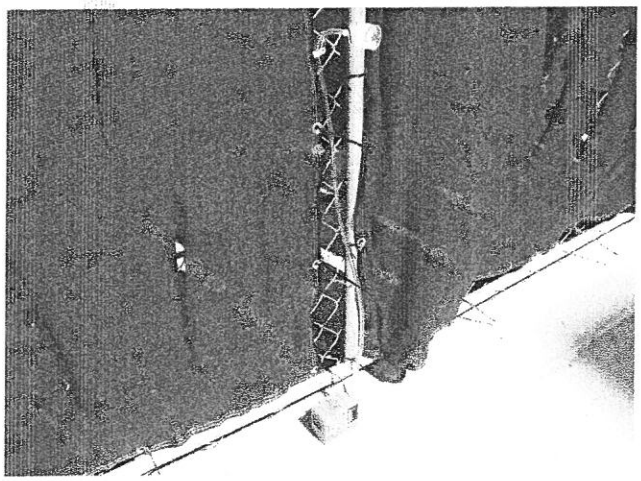
Environmental

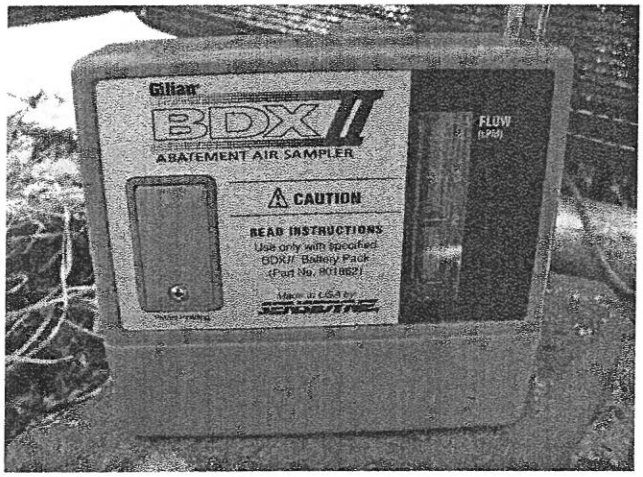
Construction

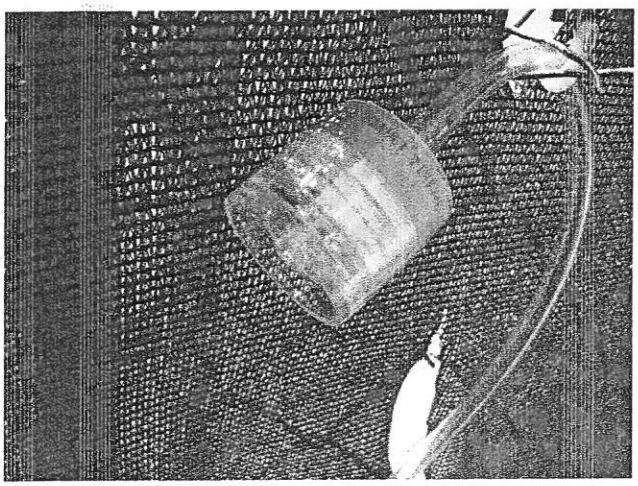
42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: hael@earthlink.net

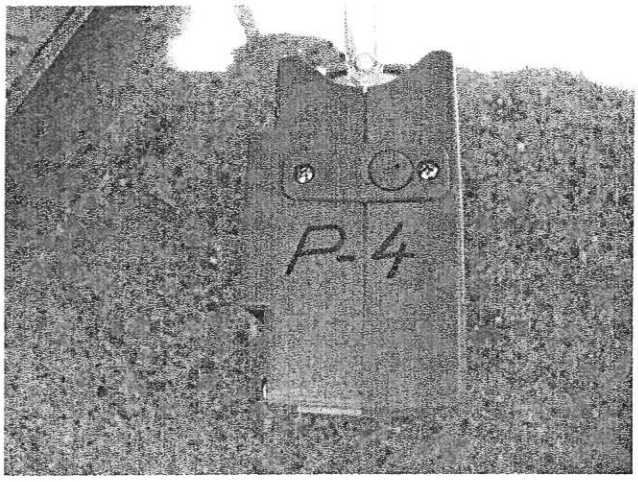
Project Name: Former YMCA Demolition
Project No.: H08-803-D







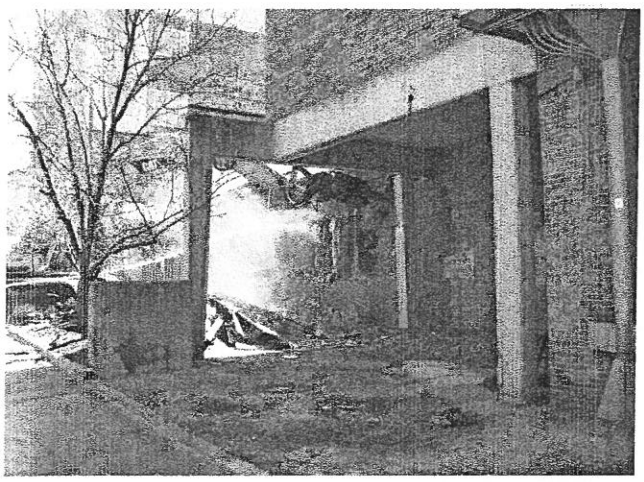


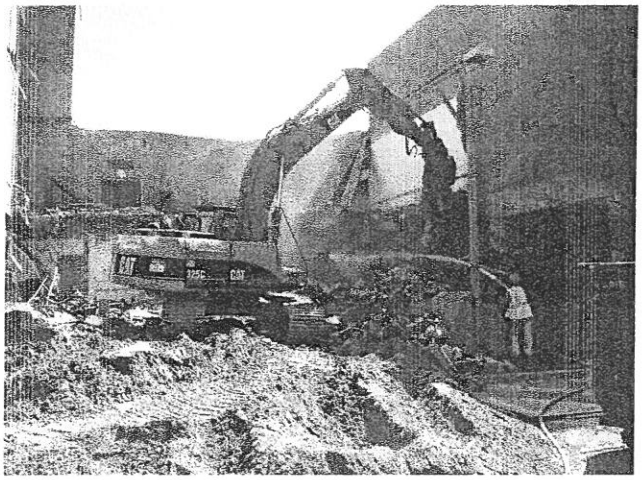


04-16-2008

HAE
Geotechnical
Environmental
Construction
42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

Project Name: Former YMCA Demolition
Project No.: H08-803-D





EMSL Analytical
2001 East 52nd St., Indianapolis, IN 46205
Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42020 Koppermick Rd. Ste. 206
Canton, MI 48187

Fax: (734) 414-7421 Phone: (734) 414-7289
Project: **FORMER YMCA DEMOLITION ANN ARBOR, MI/ 08-803-D**

Customer ID: HAEI22
Customer PO:
Received: 04/18/08 8:40 AM
EMSL Order: 160805071
EMSL Proj:
Report Date: 4/18/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	Analyzed	Volume	RDL	Lead Concentration	Notes
0001	4/18/2008	420 L	9.5 µg/m³	<9.5 µg/m³	
Client Sample	PUMP P#1, SAMPLE S#1/4/17/08				*Collected:* 4/17/2008
0002	4/18/2008	420 L	9.5 µg/m³	<9.5 µg/m³	
Client Sample	PUMP P#2, SAMPLE S#2/4/17/08				*Collected:* 4/17/2008
0003	4/18/2008	367.5 L	11 µg/m³	<11 µg/m³	
Client Sample	PUMP P#3, SAMPLE S#3/4/17/08				*Collected:* 4/17/2008
0004	4/18/2008	367.5 L	11 µg/m³	<11 µg/m³	
Client Sample	PUMP P#4, SAMPLE S#4/4/17/08				*Collected:* 4/17/2008
0005	4/18/2008	315 L	13 µg/m³	<13 µg/m³	
Client Sample	PUMP P#1, SAMPLE S#6/4/17/08				*Collected:* 4/17/2008
0006	4/18/2008	315 L	13 µg/m³	<13 µg/m³	
Client Sample	PUMP P#2, SAMPLE S#7/4/17/08				*Collected:* 4/17/2008
0007	4/18/2008	270 L	15 µg/m³	<15 µg/m³	
Client Sample	PUMP P#3, SAMPLE S#8/4/17/08				*Collected:* 4/17/2008
0008	4/18/2008	270 L	15 µg/m³	<15 µg/m³	
Client Sample	PUMP P#6, SAMPLE S#9/4/17/08				*Collected:* 4/17/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced execept in full, without written approval by EMSL. This report relates only to those Items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted

ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 4/18/2008 2:26:32 PM

PB w/RDL

160805071

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third p*
Company:	Haengel & Assoc. Engineering, Inc	**EMSL-Bill to:**	Haengel & Assoc. Engineerin
Street:	42030 Koppernick Rd., Suite 318	**Street:**	42030 Koppernick Rd., Suite
Box #:		**Box #:**	
City/State:	Canton, MI **Zip** 48187	**City/State:**	Canton MI **Zip** 4818
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition, Ann Arbor, MI / H08-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ Air, NIOSH 7082 KB
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS
- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count &
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS
- ☒ ~~Nuisance Dust (NIOSH 0500 & 0600)~~
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) _____ - _____ **TOTAL SAMPLE #** _____

Relinquished:		**Date:**	**Time:**
Received:		**Date:**	**Time:**
Relinquished:	4/17/08	**Date:**	**Time:** 4:40
Received:		**Date:**	**Time:**

Rec'd AB 4-18-08 8:40 am

5071

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P#1 Sample S#1 /04-17-08	NIOSH 7082/Total Lead/Flow rate: 2.0 Location: 15'S, 35'E of NE corner of bldg. Time on: 8:30 Time off: 12:00	Vol. air: 420(L)
Pump P#2 Sample S#2 /04-17-08	NIOSH 7082/Total Lead/Flow rate: 2.0 Location: 12'S of SE corner of bldg. Time 8:35 Time off 12:05	Vol. air: 420(L)
Pump P#3 Sample S#3 /04-17-08	NIOSH 7082/Total Lead/Flow rate: 1.75 Location: 12'W of SW corner of bldg. Time on: 8:40 Time off: 12:10	Vol. air: 367.5(L)
Pump P#4 Sample S#4 /04-17-08	NIOSH 7082/Total Lead/Flow rate: 1.75 Location: 25'N of NW corner of bldg. Time on: 8:45 Time off 12:15	Vol. air: 367.5(L)
~~Pump P#5 Sample S#5 /04-17-08~~	~~NIOSH 0500/Total Dust/Flow rate: 1.75 Location: 48'ft 36'ft of NE corner of bldg. Time on: 8:50 Time off 9:20~~	~~Vol. air: 52.5(L)~~
Pump P#1 Sample S#6 /04-17-08	NIOSH 7082/Total Lead/Flow rate 1.75 Time on: 13:10 Time off: 16:10	Vol. air: 315(L)
Pump P#2 Sample S#7 /04-17-08	NIOSH 7082/Total Lead/Flow rate: 1.75 Time on: 13:15 Time off: 16:15	Vol. air: 315(L)
Pump P#3 Sample S#8 /04-17-08	NIOSH 7082/Total Lead/Flow rate: 1.5 Time on 13:20 Time off 16:20	Vol. air: 270(L)
Pump P#4 Sample S#9 /04-17-08	NIOSH 7082/Total Lead/Flow rate: 1.5 Time on 13:25 Time off 16:25	Vol. air: 270(L)
~~Pump P#5 Sample S#10 /04-17-08~~	~~NIOSH 0500/Total Dust/Flow rate 2.0 Time on: 13:30 Time off 14:00~~	~~Vol. air: 60(L)~~

Relinquished: _____ **Date:** _____ **Time:** _____

Received: D Brown **Date:** 4-18-08 **Time:** 840

Relinquished: _____ **Date:** _____ **Time:** _____

Received: _____ **Date:** _____ **Time:** _____

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42020 Koppernick Rd. Ste 318
Canton, MI. 48187

April 18, 2008

Ref Number: 080801169
Samples Received: April 17, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition, Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#5	45' N. 30'W. of NE Corner of Bldg.	52.5	0.02	**<0.2**
S#10	Location: Not Submitted	60	0.02	**<0.2**

LOD-Estimated Limit Of Detection
* Modified
Reviewed by:

Approved Signatory

080801169

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third p*
Company:	Haengel & Assoc. Engineering, Inc	**EMSL-Bill to:**	Haengel & Assoc. Engineering
Street:	42030 Koppernick Rd. Suite 318	**Street:**	42030 Koppernick Rd., Suite
Box #:		**Box #:**	
City/State:	Canton MI **Zip** 48187	**City/State:**	Canton MI **Zip** 4818
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition, Ann Arbor, MI / H08-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
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TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

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- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ ~~Air, NIOSH 7082~~
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
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Air Samples
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- ☐ Mold & Fungi by Agar Plate count & i
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

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- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
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- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

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- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
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- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☒ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) **TOTAL SAMPLE #**

RECEIVED
EMSL OF MICHIGAN
DATE: 4/17/08 TIME: 9:40
SIGNATURE RW WI

Relinquished:		**Date:**	**Time:**
Received:		**Date:**	**Time:**
Relinquished:		**Date:**	**Time:**
Received:		**Date:**	**Time:**

0808011169

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P#1 Sample S#1 / 04-17-08	NIOSH 7082 / Total Lead / Flow rate: 2.0 Location: 15'S, 35'E of NE corner of bldg. Time on: 8:30 Time off: 12:05	Vol. air: 420(L)
Pump P#2 Sample S#2 / 04-17-08	NIOSH 7082 / Total Lead / Flow rate: 2.0 Location: 8'S of SE corner of bldg. Ton 8:35 Toff 12:05	Vol. air: 420(L)
Pump P#3 Sample S#3 / 04-17-08	NIOSH 7082 / Total Lead / Flow rate: 1.75 Location: 12'W of SW corner of bldg. Timeon: 8:40 Time off: 12:10	Vol. air: 367.5(L)
Pump P#4 Sample S#4 / 04-17-08	NIOSH 7082 / Total Lead / Flow rate: 1.75 Location: 25'N of NW corner of bldg. Time on: 8:45 Time off 12:15	Vol air: 367.5(L)
Pump P#5 Sample S#5 / 04-17-08	NIOSH 0500 / Total Dust / Flow rate: 1.75 Location: 45'N, 30'W of NE corner of bldg. Time on: 8:50 Time off 9:20	Vol. air: 52.5(L)
Pump P#1 Sample S#6 / 04-17-08	NIOSH 7082 / Total Lead / Flow rate: 1.75 Time on: 13:10 Time off: 16:10	Vol. air: 315(L)
Pump P#2 Sample S#7 / 04-17-08	NIOSH 7082 / Total Lead / Flow rate: 1.75 Time on: 13:15 Time off: 16:15	Vol. air: 315(L)
Pump P#3 Sample S#8 / 04-17-08	NIOSH 7082 / Total Lead / Flow rate: 1.5 Time on 13:20 Time off 16:20	Vol. air: 270(L)
Pump P#4 Sample S#9 / 04-17-08	NIOSH 7082 / Total Lead / Flow rate: 1.5 Time on 13:25 Time off 16:25	Vol. air: 270(L)
Pump P#5 Sample S#10 / 04-17-08	NIOSH 0500 / Total Dust / Flow rate 2.0 Time on: 13:30 Time off: 14:00	Vol. air: 60(L)

Relinquished: _____ **Date:** _____ **Time:** _____
Received: _____ **Date:** _____ **Time:** _____
Relinquished: _____ **Date:** _____ **Time:** _____
Received: _____ **Date:** _____ **Time:** _____

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

HAE

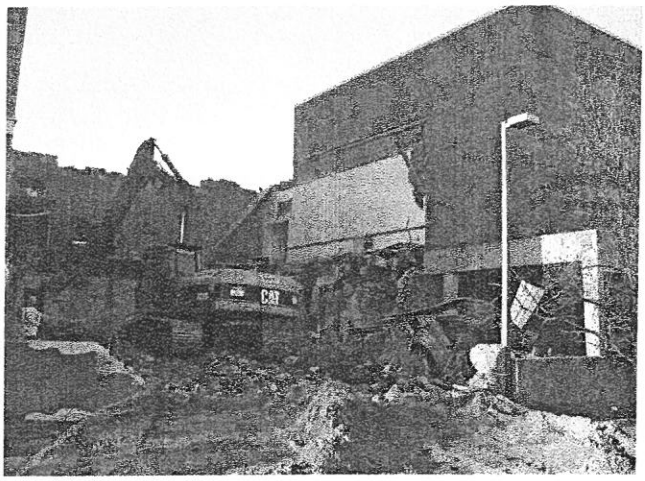
Geotechnical

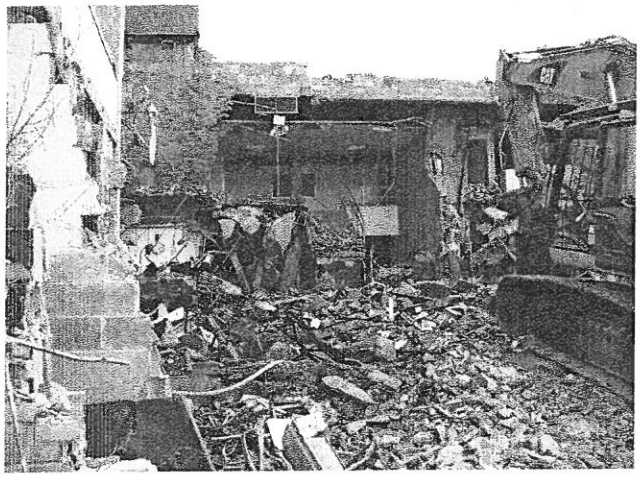
Environmental

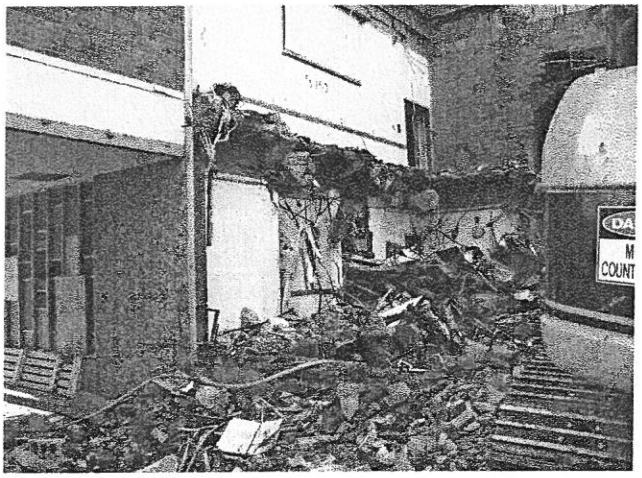
Construction

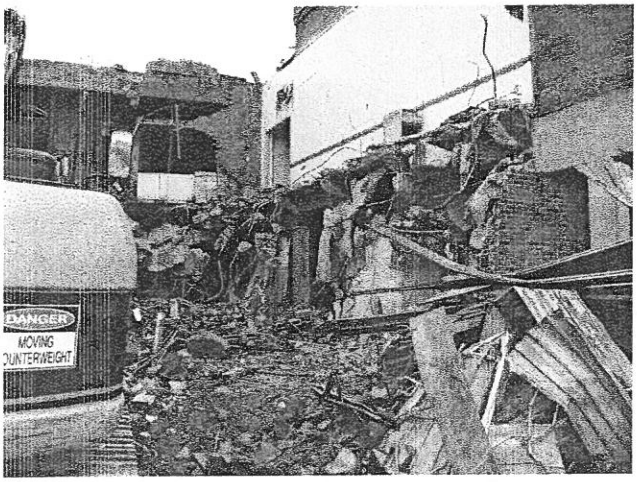
42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

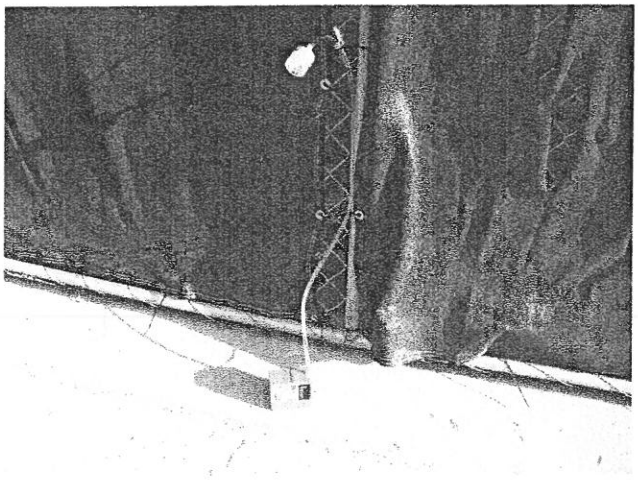
Project Name: Former YMCA Demolition
Project No.: H08-803-D











04-17-2008

HAE

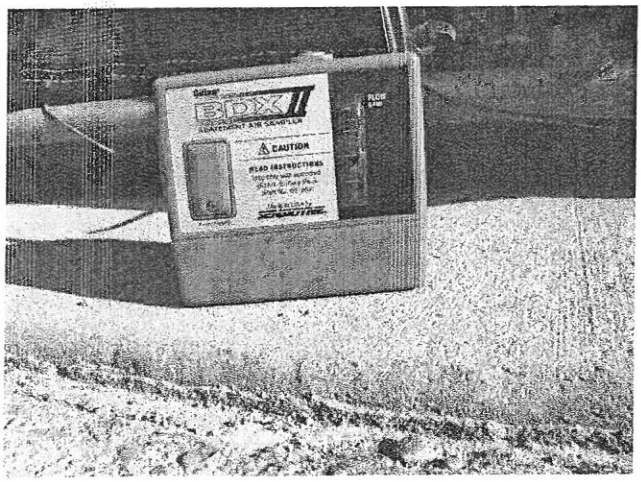
Geotechnical

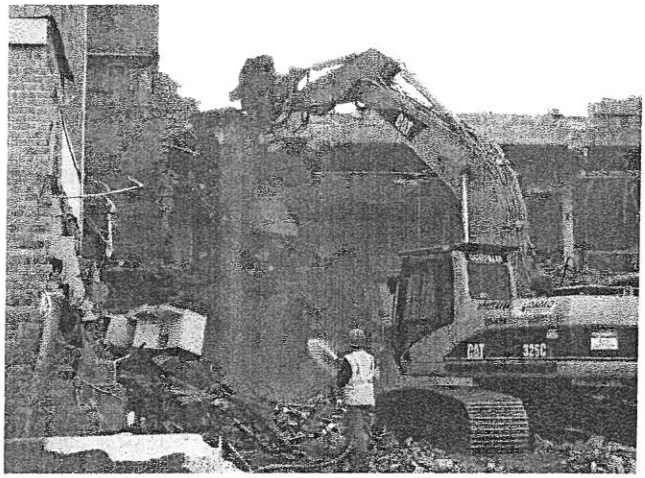
Environmental

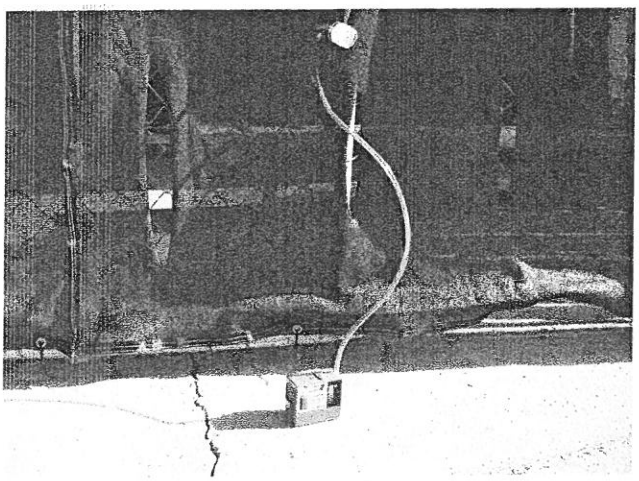
Construction

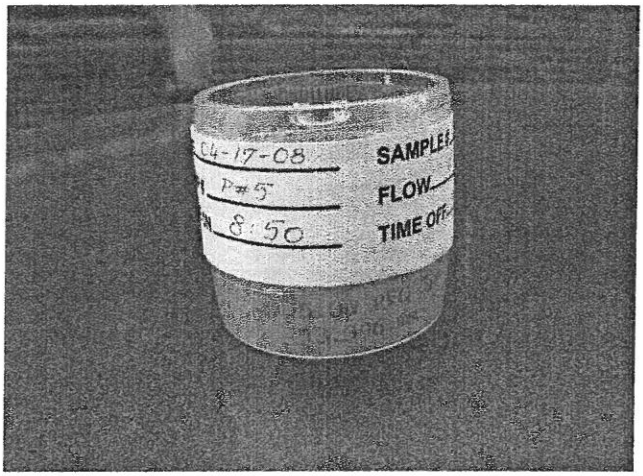
42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

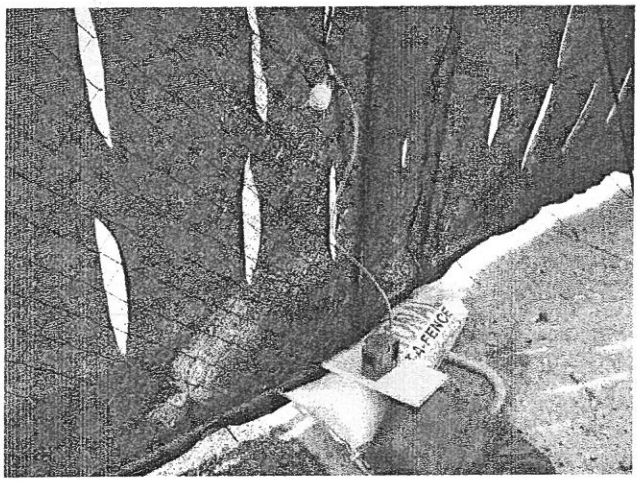
Project Name: Former YMCA Demolition
Project No.: H08-803-D

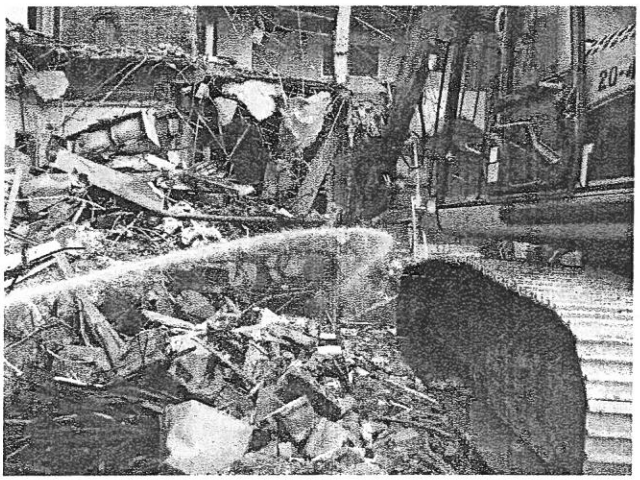












04-17-2008

HAE

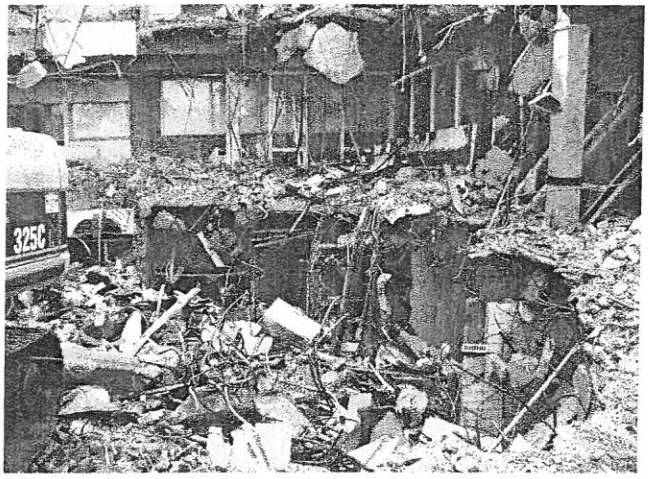
Geotechnical

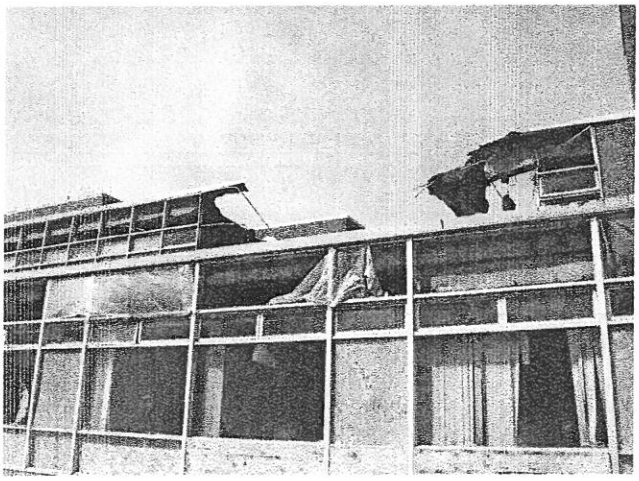
Environmental

Construction

42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

Project Name: Former YMCA Demolition
Project No.: H08-803-D





04-17-2008

EMSL Analytical
2001 East 52nd St., Indianapolis, IN 46205
Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42020 Koppermick Rd. Ste. 206
Canton, MI 48187

Fax: (734) 414-7421 Phone: (734) 414-7289
Project: **FORMER YMCA/DEMOP ANN ARBOR, MI/H08-803-D**

Customer ID: HAEI22
Customer PO:
Received: 04/21/08 9:30 AM
EMSL Order: 160805143
EMSL Proj:
Report Date: 4/21/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	Analyzed	Volume	RDL	Lead Concentration	Notes
0001	4/21/2008	360 L	11 µg/m³	<11 µg/m³	
Client Sample	PUMP P#1 SAMPLE S#1 04-18-2008				Collected: 4/18/2008
0002	4/21/2008	315 L	13 µg/m³	<13 µg/m³	
Client Sample	PUMP P#2 SAMPLE S#2 04-18-2009				Collected: 4/18/2008
0003	4/21/2008	315 L	13 µg/m³	<13 µg/m³	
Client Sample	PUMP P#3 SAMPLE S#3 04-18-2010				Collected: 4/18/2008
0004	4/21/2008	360 L	11 µg/m³	<11 µg/m³	
Client Sample	PUMP P#4 SAMPLE S#4 04-18-2011				Collected: 4/18/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced execept in full, without written approval by EMSL. This report relates only to those Items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted

ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 4/21/2008 2:40:23 PM

PB w/RDL

16080514 3 Client # : HAE12[illegible]
E-mail : haei @ earth[illegible]

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M[illegible]

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third p[illegible]*
Company:	Haengel & Assoc. Engineering, Inc.	**EMSL-Bill to:**	Haengel & Assoc. Engineering
Street:	42030 Koppernick Rd., Suite 318	**Street:**	42030 Koppernick Rd., Suite 3[illegible]
Box #:		**Box #:**	
City/State:	Canton, MI **Zip** 48187	**City/State:**	Canton, MI **Zip** 4818[illegible]
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / H08-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ Air, NIOSH 7082 KB
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & i[illegible]
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) TOTAL SAMPLE #

Relinquished:	David Horton	Date:	04-18-08	Time:	2:30 p.m.
Received:	[illegible]	Date:	4-18-08	Time:	2:30
Relinquished:		Date:		Time:	
Received:	Krystle Burke	Date:	4-21-08	Time:	9:30 FX

5143

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION NIOSH 7082 - LEAD	VOLUME Air (L) Area (Inches sq.)
Pump P#1, Sample S#1 04-18-2008	Location: 15'S, 35'E of NE corner of bldg. Ton = 10:15 Toff = 13:15 FR = 2.0	Vol. air = 360 (L)
Pump P#2, Sample S#2 04-18-2008	Location: 12'S of SE corner of bldg. Ton = 10:20 Toff = 13:20 FR = 1.75	Vol. air = 315 (L)
Pump P#3, Sample S#3 04-18-2008	Location: 12'W of SW corner of bldg. Ton = 10:25 Toff = 13:25 FR = 1.75	Vol. air = 315 (L)
Pump P#4, Sample S#4 04-18-2008	Location: 25'N of NW corner of bldg. Ton = 10:30 Toff = 13:30 FR = 2.0	Vol. air = 360 (L)

Relinquished: _____ **Date:** _____ **Time:** _____
Received: _____ **Date:** _____ **Time:** _____
Relinquished: _____ **Date:** _____ **Time:** _____
Received: _____ **Date:** _____ **Time:** _____

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42020 Koppernick Rd. Ste 318
Canton, MI. 48187

April 19, 2008

Ref Number: 080801181
Samples Received: April 18, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition; Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#5	45' N., 30'W. of NE Corner of Bldg.	45.0	0.02	**<0.2**

LOD-Estimated Limit Of Detection
* Modified
Reviewed by:

Approved Signatory

Client #: HAE122
E-mail: haei@earthlink.n[illegible]

080801181

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, MI

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third pa[rty]*
Company:	Haengel & Assoc. Engineering, Inc	**EMSL-Bill to:**	Haengel & Assoc. Engineer[ing]
Street:	42030 Koppernick Rd., Suite 318	**Street:**	42030 Koppernick Rd., Suite
Box #:		**Box #:**	
City/State:	Canton, MI **Zip** 48187	**City/State:**	Canton, MI **Zip** 48187
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / H08-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & id
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☒ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) - TOTAL SAMPLE #

Relinquished:	Daniel Horotan	Date:	04-18-08	Time:	2:30 p.m.
Received:	RW	Date:	4-18-08	Time:	2:30
Relinquished:		Date:		Time:	
Received:		Date:		Time:	

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION NIOSH 0500 - DUST	VOLUME Air (L) Area (Inches sq.)
Pump P#5, Sample S#5 04-18-2008	45'N, 30'W of NE corner of bldg. Ton = 10:35 Toff = 11:05 FR = 1.5	Vol. air = 45(L)

Relinquished: Daniel Horotan Date: Time:

Received: Date: Time:

Relinquished: Date: Time:

Received: Date: Time:

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42020 Koppernick Rd. Ste 318
Canton, MI. 48187

April 22, 2008

Ref Number: 080801206
Samples Received: April 21, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition, Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#6	45'N., 35' W. of NE Corner of BLDG.	52.5	0.02	**<0.2**

LOD-Estimated Limit Of Detection
* Modified
Reviewed by:

Approved Signatory

E-mail: nyfield@emsl

08080/206

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third pa*
Company:	Hoengel & Assoc. Engineering, Inc.	**EMSL-Bill to:**	Hoengel & Assoc. Engineering,
Street:	42030 Koppernick Rd., Suite 318	**Street:**	42030 Koppernick Rd., Suite 3
Box #:		**Box #:**	
City/State:	Canton MI **Zip** 48187	**City/State:**	Canton MI **Zip** 4818
Phone Results to:	Gus Hoengel	**Fax Results to:**	Gus Hoengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / 408-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

RECEIVED
EMSL OF MICHIGAN
DATE: 4-21-08 TIME: 3:

SIGNATURE

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & id
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☒ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) _____ **TOTAL SAMPLE #** _____

Relinquished:	Daniel Montara	**Date:**	04-18-07	**Time:**	
Received:		**Date:**		**Time:**	
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

L

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

NIOSH 0500 / DUST

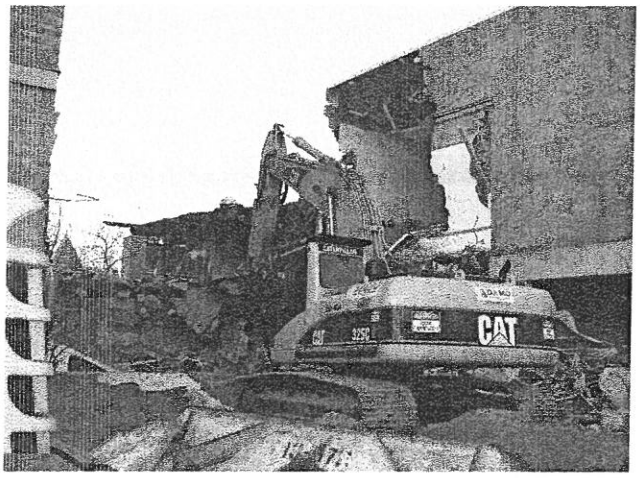
SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P#5, Sample S#6 04-18-08	45'N, 35'W of NE corner of bldg. Ton = 16:15 Toff = 16:45 FR = 1.75	Vol. air = 52.5 (L)

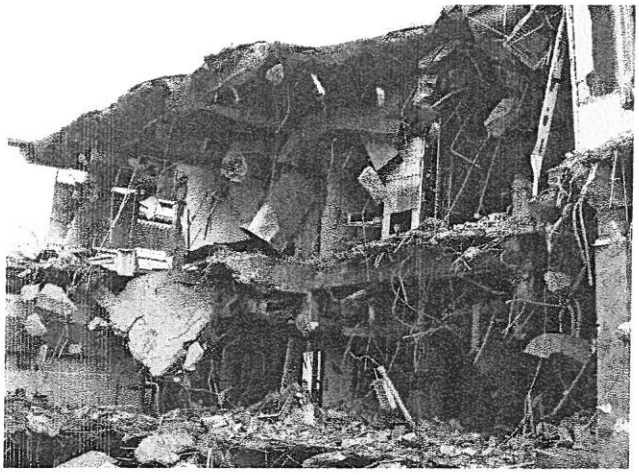
RECEIVED WI
EMSL OF MICHIGAN
DATE: 4-21-08 TIME: 3:45 pm
SIGNATURE E. B[illegible]

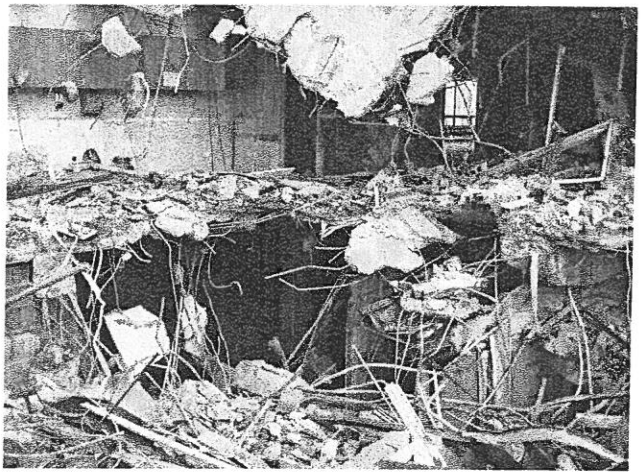
Relinquished:	Daniel [illegible]	Date:	04-18-08	Time:	
Received:		Date:		Time:	
Relinquished:		Date:		Time:	
Received:		Date:		Time:	

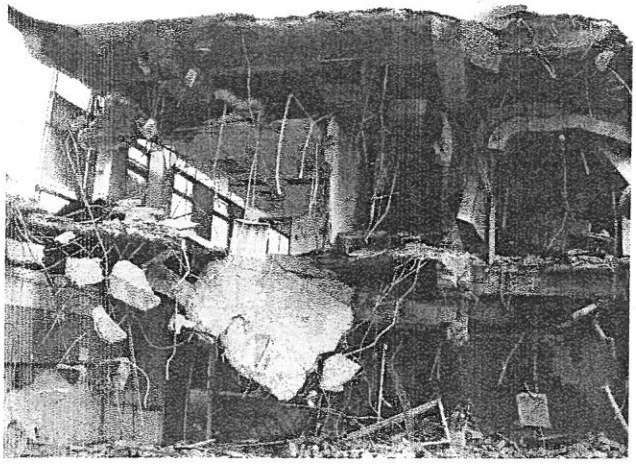
HAE
Geotechnical
Environmental
Construction
42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

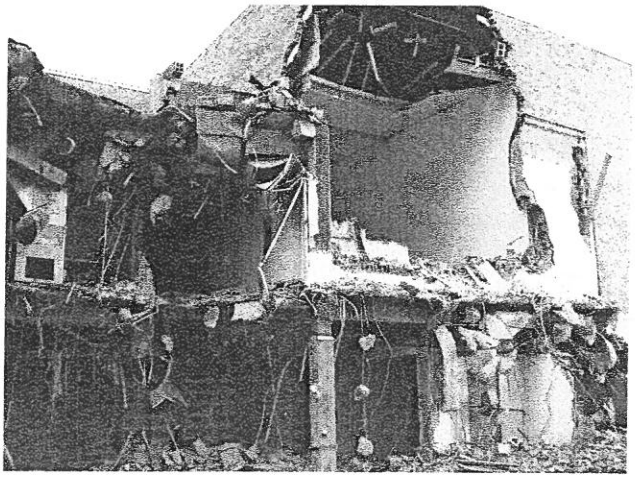
Project Name: Former YMCA Demolition
Project No.: H08-803-D











04-18-2008

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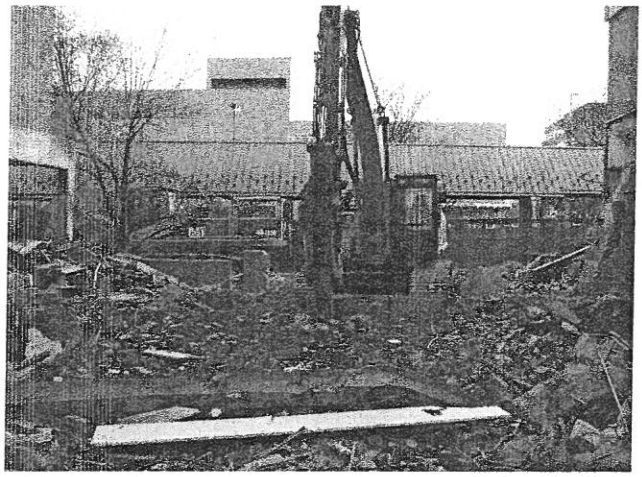

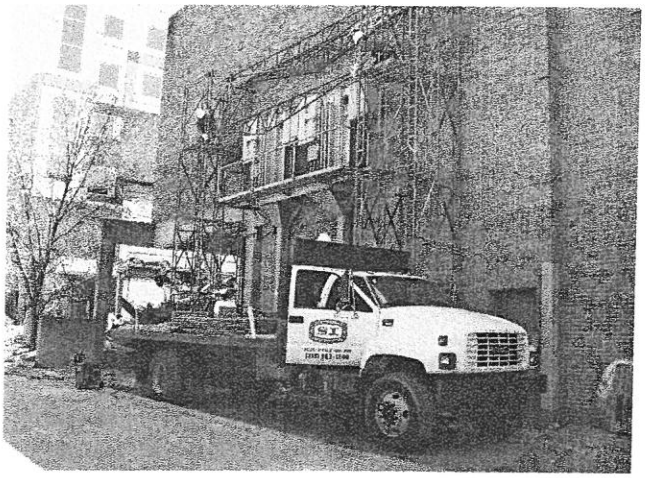

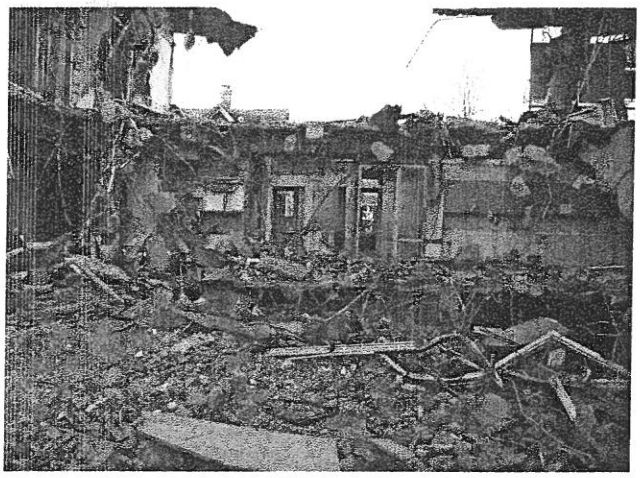

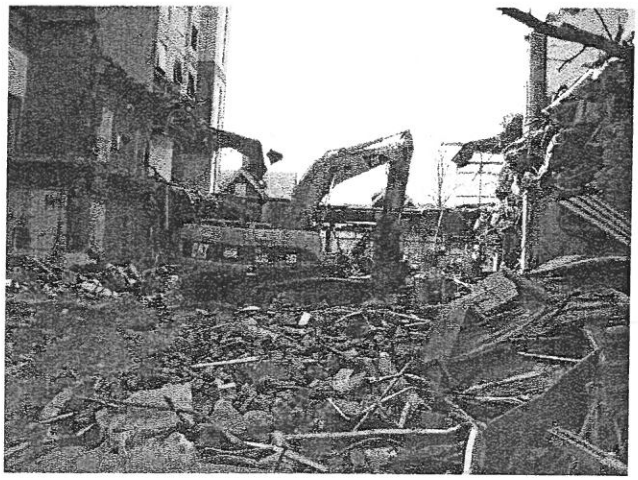

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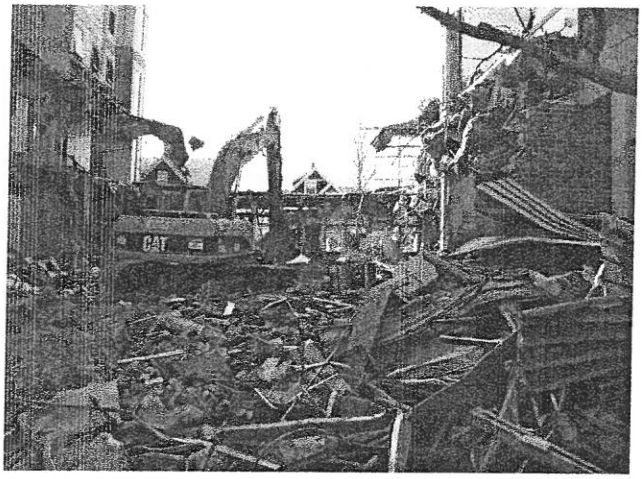

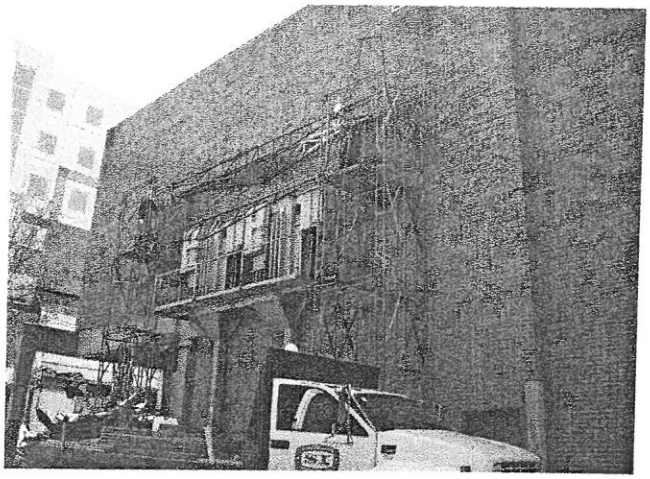

04-18-2008

EMSL Analytical
2001 East 52nd St., Indianapolis, IN 46205
Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42030 Koppermick Rd. Ste. 318
Canton, MI 48187

Fax: (734) 455-9774 Phone: (734) 455-9771
Project: **FORMER YMCA DEMO ANN ARBOR, MI/H08-803-D**

Customer ID: HAEI22
Customer PO:
Received: 04/22/08 8:30 AM
EMSL Order: 160805200
EMSL Proj:
Report Date: 4/22/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	Analyzed	Volume	RDL	Lead Concentration	Notes
0001	4/22/2008	360 L	11 µg/m³	<11 µg/m³	
Client Sample	PUMP P#1, SAMPLE S#1 4/19/08				Collected: 4/19/2008
0002	4/22/2008	270 L	15 µg/m³	<15 µg/m³	
Client Sample	PUMP P#2, SAMPLE S#2 4/19/09				Collected: 4/19/2008
0003	4/22/2008	350 L	11 µg/m³	<11 µg/m³	
Client Sample	PUMP P#3, SAMPLE S#3 4/19/10				Collected: 4/19/2008
0004	4/22/2008	262.5 L	15 µg/m³	<15 µg/m³	
Client Sample	PUMP P#4, SAMPLE S#4 4/19/11				Collected: 4/19/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced execept in full, without written approval by EMSL. This report relates only to those Items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted

ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 4/22/2008 2:16:57 PM

PB w/RDL

160805200

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, [illegible]

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.CO[illegible]

EMSL Rep: Paul Nyfield
Third Party Billing requires written authorization from third

Company:	Haengel & Assoc. Engineering, Inc	**EMSL-Bill to:**	Haengel & Associates Eng.
Street:	42030 Koppernick Rd., Ste. 318	**Street:**	42030 Koppernick Rd., ste
Box #:		**Box #:**	
City/State:	Canton, MI **Zip** 48187	**City/State:**	Canton, MI **Zip** 48[illegible]
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / H08-805-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ Air, NIOSH 7082 KB
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS
- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

RECEIVED WF
MICHIGAN
DATE: 4-21-08 TIME: 3:45P
SIGNATURE L. Brown

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count &
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS
- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) **TOTAL SAMPLE #**

Relinquished:	Izaiah Hopton	Date:	04-19-08	Time:	
Received:	[illegible signature]	Date:	4-22-08	Time:	830 A
Relinquished:		Date:		Time:	
Received:		Date:		Time:	

5200

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

NIOSH 7082

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P#1, Sample S#1 04-19-08	15'S, 35'E of NE corner of bldg. Ton = 8:25 Toff = 11.25 FR = 2.0	Vol. air = 360 (L
Pump P#2, Sample S#2 04-19-08	12'S of SE corner of bldg. Ton = 8:30 Toff = 11:30 FR = 1.5	Vol. air = 270 (L)
Pump P#3, Sample S#3 04-19-08	12'W of SW corner of bldg. Ton = 8:40 Toff = 11:35 FR = 2.0	Vol. air = 350 (L)
Pump P#4, Sample S#4 04-19-08	35'N, 35'E of NW corner of bldg. Ton = 8:45 Toff = 11:40 FR = 1.5	Vol. air = 262.5 (
	RECEIVED EMSL OF MICHIGAN DATE ____ TIME ____ SIGNATURE	

Relinquished: Daniel Hongtan Date: 04-19-08 Time:
Received: [signature] Date: Time:
Relinquished: Date: Time:
Received: Date: Time:

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42020 Koppernick Rd. Ste 318
Canton, MI. 48187

April 22, 2008

Ref Number: 080801205
Samples Received: April 21, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition, Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#5	12' S., 35' W. of SE Corner of BLDG.	52.5	0.02	**<0.2**
S#6	45' N., 30' W. of NE Corner of BLDG.	52.5	0.02	**<0.2**

LOD-Estimated Limit Of Detection
* Modified
Reviewed by:

Approved Signatory

0808012 05

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third pa*
Company:	Haengel & Assoc. Engineering, Inc	**EMSL-Bill to:**	Haengel & Assoc. Eng., Inc.
Street:	42030 Koppernick Rd., Ste 318	**Street:**	42030 Koppernick Rd., Ste 31
Box #:		**Box #:**	
City/State:	Canton MI **Zip** 48187	**City/State:**	Canton MI **Zip** 4818
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455 - 9771	**Fax #:**	(734) 455 - 9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / H08-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers - MMVFs
- ☐ Synthetic Fiber Identification
- ☐ Other:

RECEIVED WI
EMSL OF MICHIGAN
DATE: 4-21-08 TIME: 3:45 pm

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & id
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

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- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☒ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) _____ **SIGNATURE** _____ **TOTAL SAMPLE #** _____

Relinquished:	Daniel Hontar	**Date:**	04-19-08	**Time:**	
Received:		**Date:**		**Time:**	
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, MI

NIOSH 0500

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P#5, Sample S#5 04-19-08	12'S, 35'W of SE corner of bldg. Ton = 8:35 Toff = 9:10 FR = 1.5	Vol. air = 52.5 (L)
Pump P#5, Sample S#6 04-19-08	45'N, 30'W of NE corner of bldg. Ton = 11:00 Toff = 11:30 FR = 1.5	Vol. air = 52.5 (L)
	RECEIVED EMSL OF MICHIGAN DATE: ____ TIME: ____ SIGNATURE	

Relinquished: Daniel Horotan **Date:** 04-19-08 **Time:** _____
Received: _____ **Date:** _____ **Time:** _____
Relinquished: _____ **Date:** _____ **Time:** _____
Received: _____ **Date:** _____ **Time:** _____

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

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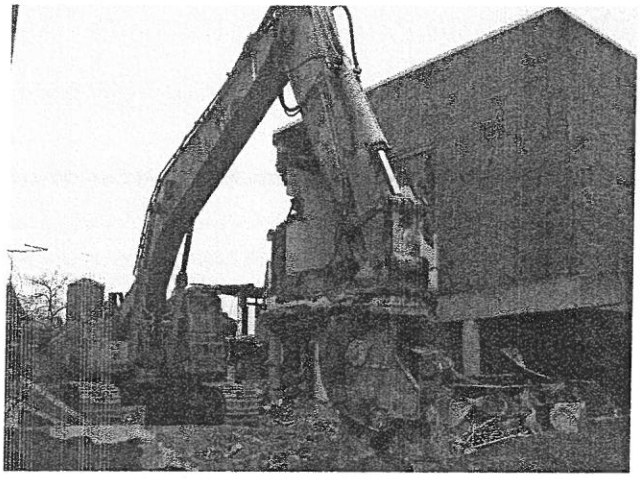

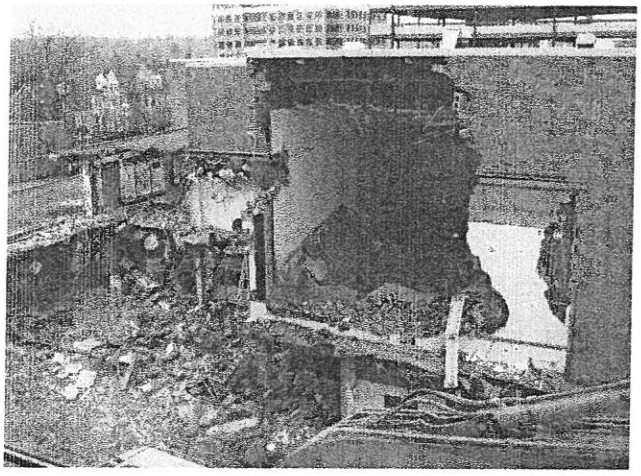

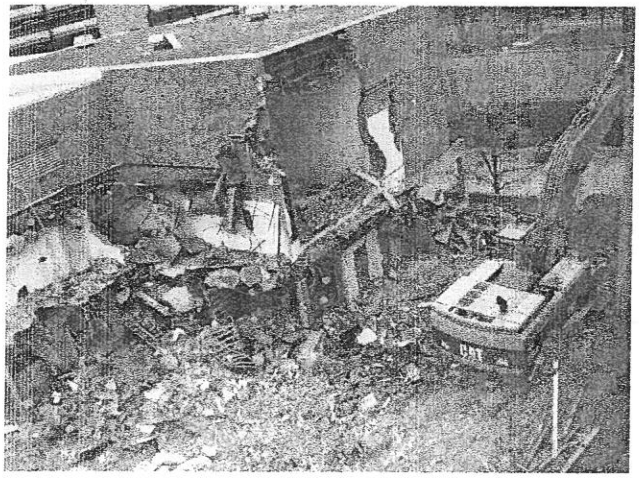

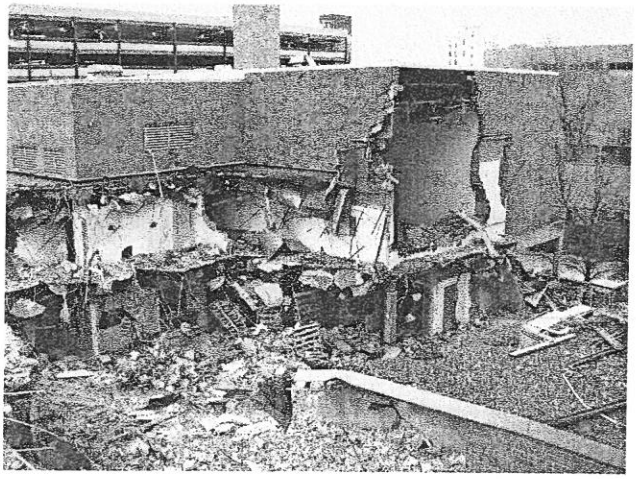

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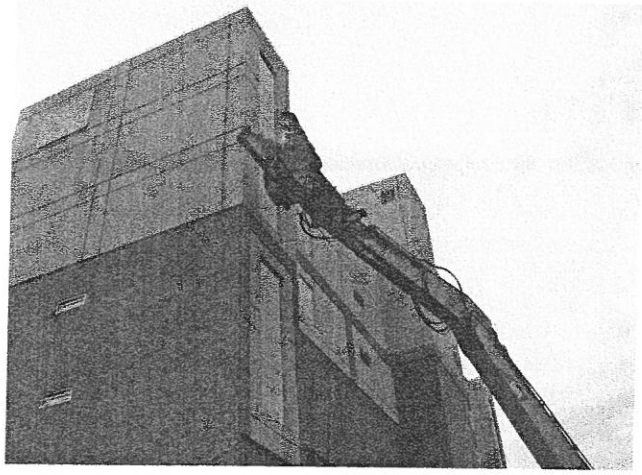

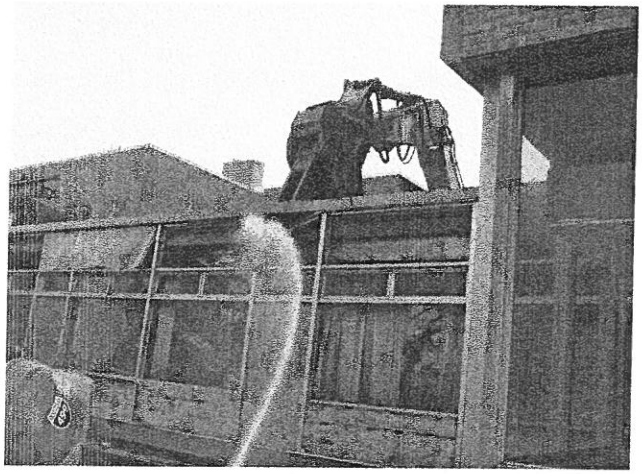

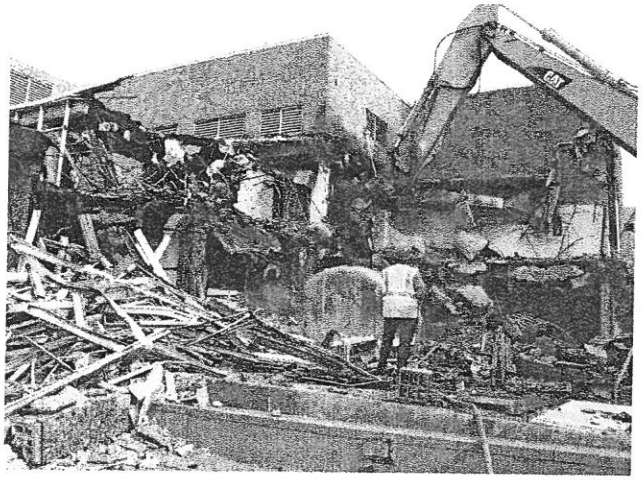

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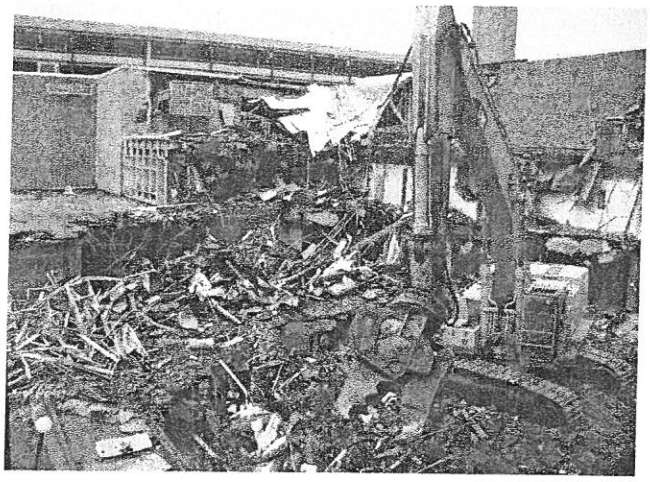
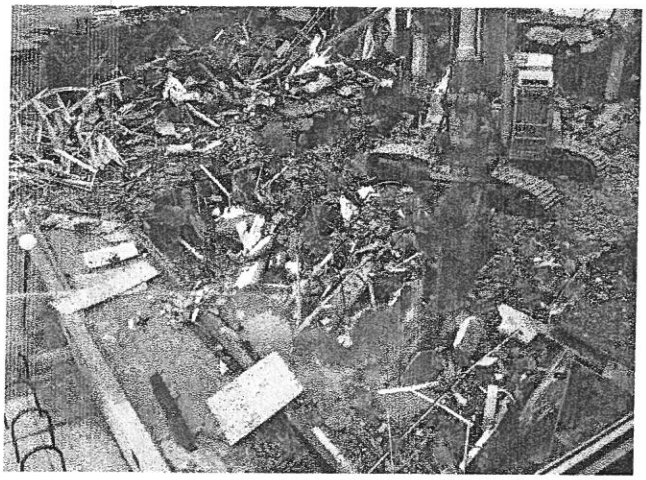
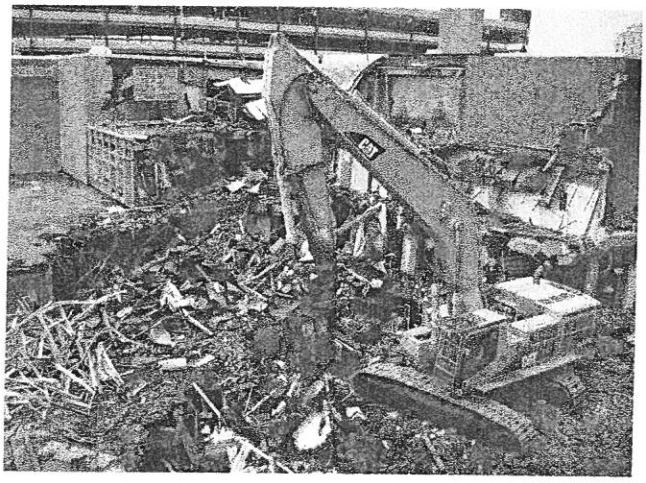
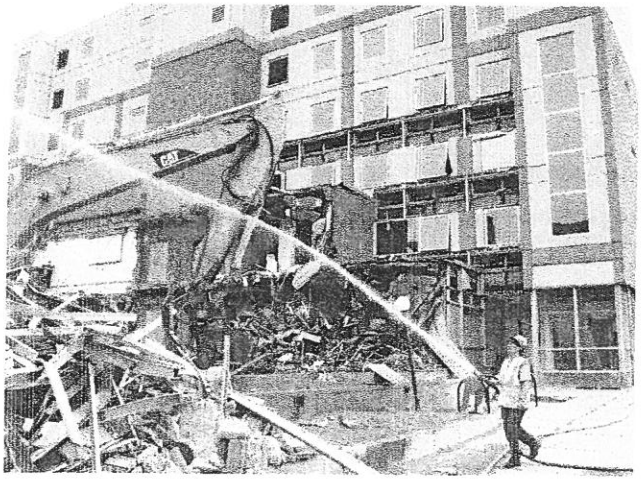
Project Name: Former YMCA Demolition
Project No.: H08-803-D









04-19-2008

EMSL Analytical
2001 East 52nd St., Indianapolis, IN 46205
Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42030 Koppermick Rd. Ste. 318
Canton, MI 48187

Fax: (734) 455-9774 Phone: (734) 455-9771
Project: **FORMER YMCA DEMO ANN ARBOR, MI/H08-803-D**

Customer ID: HAEI22
Customer PO:
Received: 04/22/08 8:30 AM
EMSL Order: 160805203

EMSL Proj:

Report Date: 4/22/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	Analyzed	Volume	RDL	Lead Concentration	Notes
0001	4/22/2008	315 L	13 µg/m³	<13 µg/m³	
Client Sample PUMP P-1, SAMPLE S-1 4/21/08					*Collected:* 4/21/2008
0002	4/22/2008	360 L	11 µg/m³	<11 µg/m³	
Client Sample PUMP P-2, SAMPLE S-2 4/21/09					*Collected:* 4/21/2008
0003	4/22/2008	270 L	15 µg/m³	<15 µg/m³	
Client Sample PUMP P-3, SAMPLE S-3 4/21/10					*Collected:* 4/21/2008
0004	4/22/2008	360 L	11 µg/m³	<11 µg/m³	
Client Sample PUMP P-4, SAMPLE S-4 4/21/11					*Collected:* 4/21/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced execept in full, without written approval by EMSL. This report relates only to those Items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted
ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 4/22/2008 2:18:48 PM

PB w/RDL

New Address 160805203

INDIANAPOLIS, IN / CHICAGO, IL / ANN ARBOR, M

EMSL ANALYTICAL, Inc. — CHAIN OF CUSTODY — WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third*
Company:	Haengel & Assoc. Engineering, Inc	**EMSL-Bill to:**	Haengel & Associates Eng.
Street:	42030 Koppernick Rd., Ste 318	**Street:**	42030 Koppernick Rd.,
Box #:		**Box #:**	
City/State:	Canton, MI **Zip** 48187	**City/State:**	Canton, MI **Zip** 481
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / 108.803.D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours | ☐ 6 Hours | ☐ 12 Hours | ☒ 24 Hours | ☐ 48 Hours | ☐ 72 Hours | ☐ 4 Days | ☐ 5 Days | ☐ 6-10 Days

SAMPLE MATRIX

☐ Air | ☐ Bulk | ☐ Soil | ☐ Wipe | ☐ Micro-Vac | ☐ Drinking Water | ☐ Wastewater | ☐ Chips | ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ Air, NIOSH 7082 vs
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & i
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

STATE OF MICHIGAN

DATE: 4/21/08 TIME: 15:45 AM NL

Client Sample # (S) — SIGNATURE — **TOTAL SAMPLE #**

Relinquished:	Abbas Hamid	**Date:**	04-21-08	**Time:**	
Received:		**Date:**	4-22-08	**Time:**	8:30 Fa
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

5203

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

NIOSH 7082

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P#1, Sample #1 04-21-08	15'S, 35'E of NE corner of bldg. Ton: 12:10 Toff: 3:10 FR: 1.75	Vol. air = 315
Pump P#2, Sample #2 04-21-08	12'S of SE corner of bldg Ton: 12:15 Toff: 3:15 FR: 2.0	Vol. air = 360
Pump P#3, Sample #3 04-21-08	12' W of SW corner of bldg. Ton: 12:20 Toff: 3:25 FR: 1.5	Vol. air = 270
Pump P#4, Sample #4 04-21-08	35'N, 35'E of NW corner of bldg. Ton: 12:25 Toff: 3:25 FR: 2.0	Vol. air = 360

RECEIVED
EMSL OF MICHIGAN
DATE: 4/22/08 TIME: 15 #5
SIGNATURE
WT

Relinquished: Abbas Hamid Date: 04-21-08 Time:
Received: Date: 4-22-08 Time: 8 30
Relinquished: Date: Time:
Received: Date: Time:

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42020 Koppernick Rd. Ste 318
Canton, MI. 48187

April 22, 2008

Ref Number: 080801204
Samples Received: April 21, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition; Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#5	12' S., 35' W. of SE Corner of BLDG.	52.5	0.02	**<0.2**

LOD-Estimated Limit Of Detection.
* Modified
Reviewed by:

Approved Signatory

08080 1204

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third pa*
Company:	Haengel & Assoc. Engineering	**EMSL-Bill to:**	Haengel & Assoc. Eng., Inc
Street:	42030 Koppernick Rd, ste 318	**Street:**	42030 Koppernick Rd., St
Box #:		**Box #:**	
City/State:	Canton, MI Zip 48187	**City/State:**	Canton, MI Zip 481
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / 408-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours	☐ 6 Hours	☐ 12 Hours	☒ 24 Hours	☐ 48 Hours	☐ 72 Hours	☐ 4 Days	☐ 5 Days	☐ 6-10 Days

SAMPLE MATRIX

☐ Air	☐ Bulk	☐ Soil	☐ Wipe	☐ Micro-Vac	☐ Drinking Water	☐ Wastewater	☐ Chips	☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

RECEIVED WT
EMSL OF MICHIGAN
DATE: 4-21-08 TIME: 3:45 P
SIGNATURE E. Ba

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & id
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☒ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S)

TOTAL SAMPLE #

Relinquished:	Abbas Hamid	Date:	04-21-08	Time:	
Received:		Date:		Time:	
Relinquished:		Date:		Time:	
Received:		Date:		Time:	

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, MI

NIOSH0500

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P#5, Sample S#5 04-21-08	12'S, 35'W of SE Corner of bldg. Ton = 12:30 Toff = 1:00 FR=1.75	Vol. air = 52.5 (

RECEIVED WF
EMSL OF MICHIGAN
DATE: 4-21-08 TIME: 3:45p
SIGNATURE

Relinquished:	Abbas Hamid	**Date:**	4-21-08	**Time:**	
Received:		**Date:**		**Time:**	
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

HAE

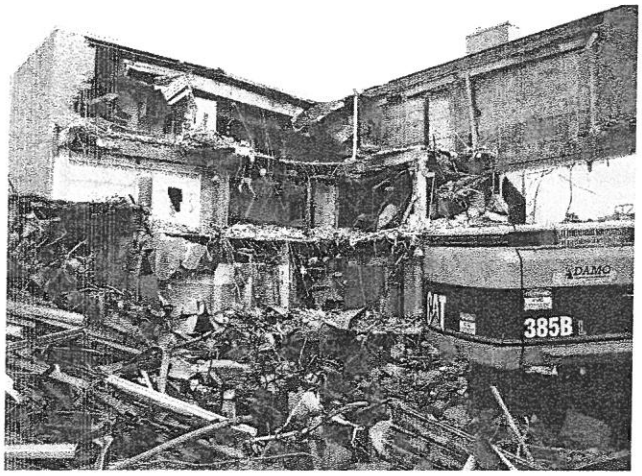
Geotechnical

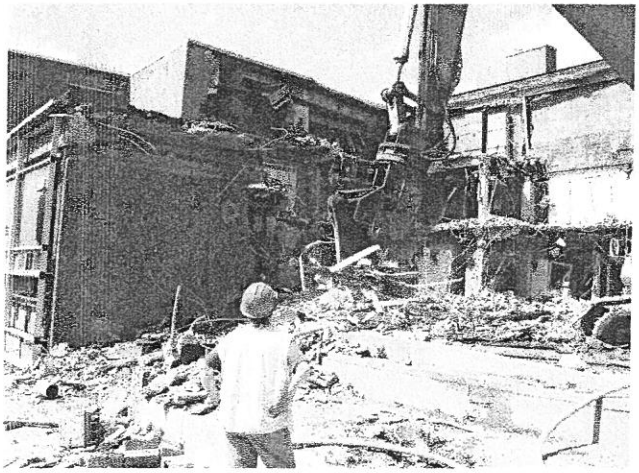
Environmental

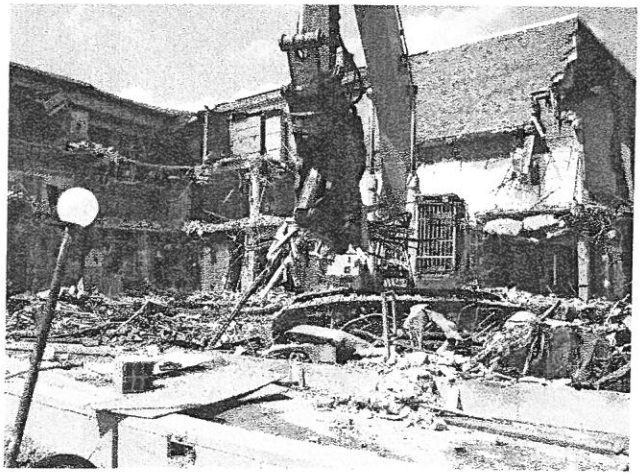
Construction

42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

Project Name: Former YMCA Demolition
Project No.: H08-803-D



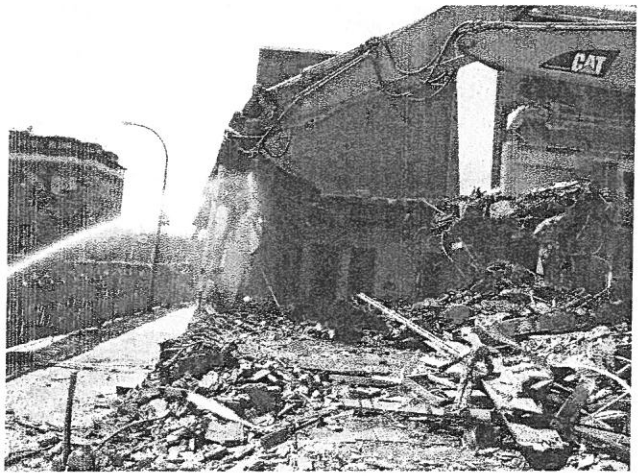


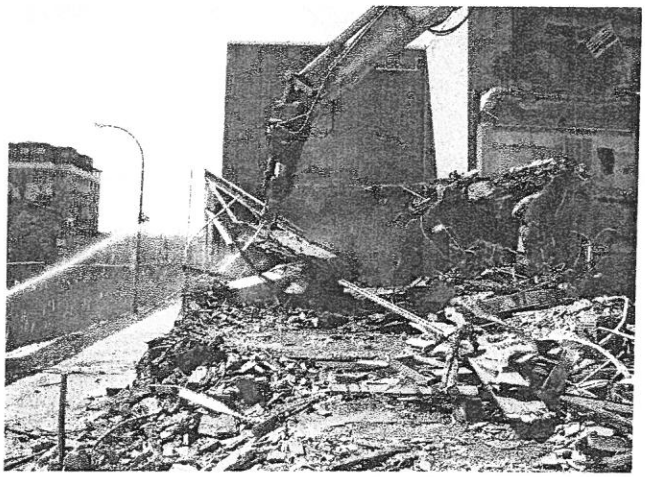


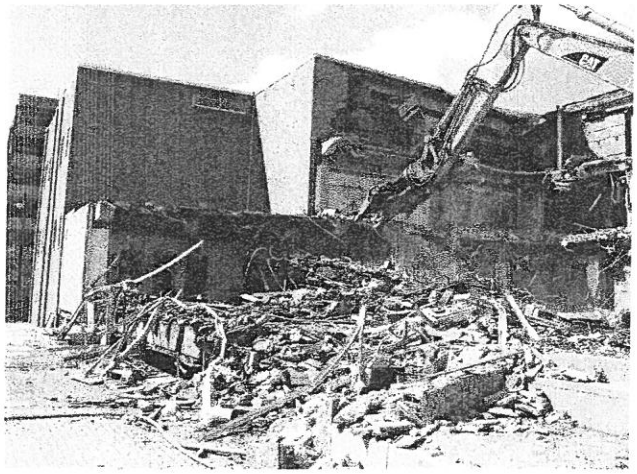
04-21-2008

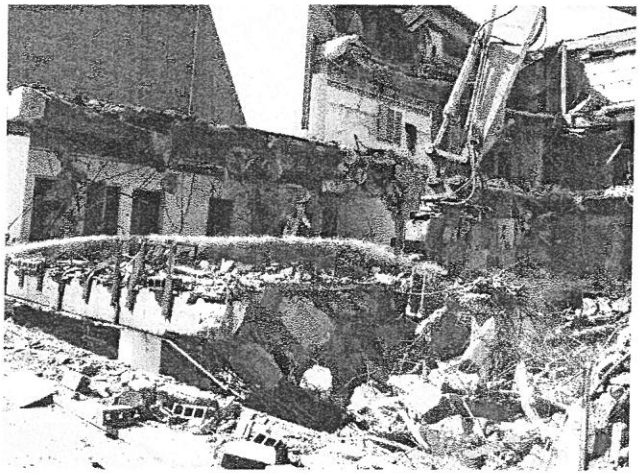
HAE
Geotechnical
Environmental
Construction
42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

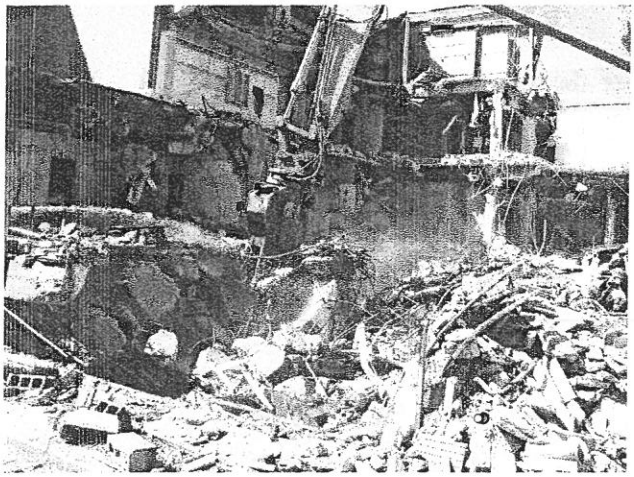
Project Name: Former YMCA Demolition
Project No.: H08-803-D











04-21-2008

EMSL Analytical
2001 East 52nd St., Indianapolis, IN 46205
Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42030 Koppermick Rd. Ste. 318
Canton, MI 48187

Fax: (734) 455-9774 Phone: (734) 455-9771
Project: **FORMER YMCA DEMO ANN ARBOR, MI /H08-803-D**

Customer ID: HAEI22
Customer PO:
Received: 04/23/08 8:40 AM
EMSL Order: 160805282
EMSL Proj:
Report Date: 4/23/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	Analyzed	Volume	RDL	Lead Concentration	Notes
0001	4/23/2008	360 L	11 µg/m³	<11 µg/m³	
Client Sample	PUMP P#1, SAMPLE S#1 4/22/08				Collected: 4/22/2008
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0003	4/23/2008	360 L	11 µg/m³	<11 µg/m³	
Client Sample	PUMP P#3, SAMPLE S#3 4/22/10				Collected: 4/22/2008
0004	4/23/2008	270 L	15 µg/m³	<15 µg/m³	
Client Sample	PUMP P#4, SAMPLE S#4 4/22/11				Collected: 4/22/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced execept in full, without written approval by EMSL. This report relates only to those Items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted
ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 4/23/2008 1:54:55 PM

PB w/RDL

1608 5282

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, MI

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third pa*
Company:	Haengel & Assoc. Engineering, Inc.	**EMSL-Bill to:**	Haengel & Associates Eng., I
Street:	42030 Koppernick Rd., Ste 318	**Street:**	42030 Koppernick Rd., Ste 3
Box #:		**Box #:**	
City/State:	Canton, MI **Zip** 48187	**City/State:**	Canton, MI **Zip** 4818
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / 408-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours	☐ 6 Hours	☐ 12 Hours	☒ 24 Hours	☐ 48 Hours	☐ 72 Hours	☐ 4 Days	☐ 5 Days	☐ 6-10 Days

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☐ Air	☐ Bulk	☐ Soil	☐ Wipe	☐ Micro-Vac	☐ Drinking Water	☐ Wastewater	☐ Chips	☐ Other

ASBESTOS ANALYSIS

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- ☐ TEM NOB (Gravimetric) NY 198.4

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- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

RECEIVED
EMSL OF MICHIGAN
DATE: 4/22/08 TIME:
SIGNATURE OJ
WALK IN

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other: 12:50pm

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & id
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) - **TOTAL SAMPLE #**

Relinquished:	Abbas Hamid	**Date:**	4-22-08	**Time:**	
Received:		**Date:**	4/22/08	**Time:**	1250 PM
Relinquished:		**Date:**	4/23/08	**Time:**	8:40 A
Received:		**Date:**		**Time:**	

5282

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

NIOSH 7082

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P#1, Sample S#1 04-22-08	15'S, 35'E of NE Corner of bldg. Ton = 8:15 Toff = 11:15 FR = 2.0	Vol. air = 360
Pump P#2, Sample S#2 04-22-08	12'S of SE Corner of bldg. Ton = 8:20 Toff = 11:20 FR = 2.0	Vol. air = 360
Pump P#3, Sample S#3 04-22-08	12'W of SW Corner of bldg. Ton = 8:25 Toff = 11:25 FR = 2.0	Vol. air = 360
Pump P#4, Sample S#4 04-22-08	35'N, 35'E of NW Corner of bldg. Ton = 8:30 Toff = 11:30 FR = 1.5	Vol. air = 270

RECEIVED
EMSL OF MICHIGAN
DATE: 4/22/08 TIME: 1250pm
SIGNATURE 03
WALK IN

Relinquished:	Abbas Hamid	Date:	4-22-08	Time:	
Received:	[signature]	Date:	4-23-08	Time:	
Relinquished:		Date:		Time:	
Received:		Date:		Time:	

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42030 Koppernick Rd. Ste 318
Canton, MI. 48187

April 23, 2008

Ref Number: 080801214
Samples Received: April 22, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition, Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#5	12' S., 35' W. of SE Corner of BLDG.	52.5	0.02	**<0.2**

LOD-Estimated Limit Of Detection
* Modified
Reviewed by:

Approved Signatory

0808012 14

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third*
Company:	Haengel & Associates Engineering	**EMSL-Bill to:**	Haengel & Associates Engineering
Street:	42030 Koppernick Rd	**Street:**	42030 Koppernick Rd., Su
Box #:	Suite 318	**Box #:**	
City/State:	Canton / MI **Zip** 48187	**City/State:**	Canton, MI **Zip** 481
Phone Results to:	(734) 455-9771	**Fax Results to:**	Gus Haengel
Telephone #:	Gus Haengel	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / 468-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

RECEIVED EMSL OF MICHIGAN DATE: 4/22/08 TIME: 0737 SIGNATURE

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other: 12:50 pm

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count &
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☒ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) WALK IN

TOTAL SAMPLE #

Relinquished:	Abbas Hamid	**Date:** 4-22-08	**Time:**
Received:		**Date:** 4/22/08	**Time:** 12:48 pm
Relinquished:		**Date:**	**Time:**
Received:		**Date:**	**Time:**

080801211

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

NIOSH 0500

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P#5, Sample S#5 04-22-08	12'S, 35' W of SE corner of bldg Ton = 8:10 Toff = 8:40 FR = 1.75	Vol. air = 52.

RECEIVED
EMSL OF MICHIGAN
DATE: 4/22/08 TIME: 1250pm
SIGNATURE 03
WALK IN

Relinquished:	Abbas Hamid	Date:	4-22-08	Time:	
Received:		Date:		Time:	
Relinquished:		Date:		Time:	
Received:		Date:		Time:	

HAE

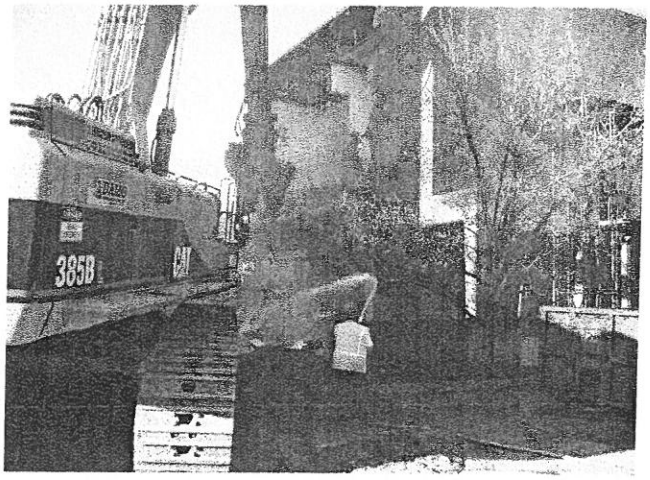
Geotechnical

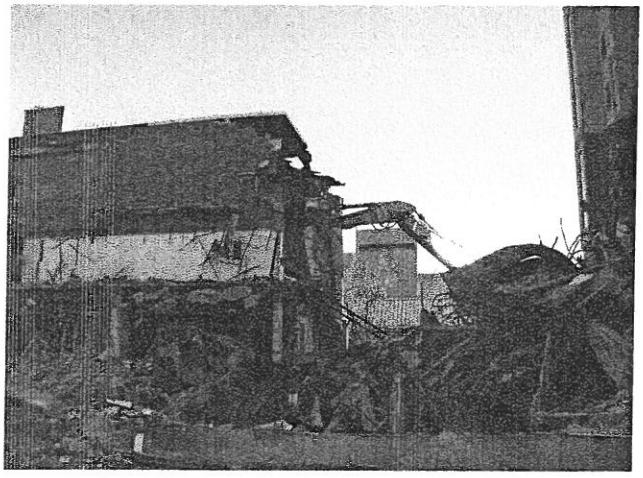
Environmental

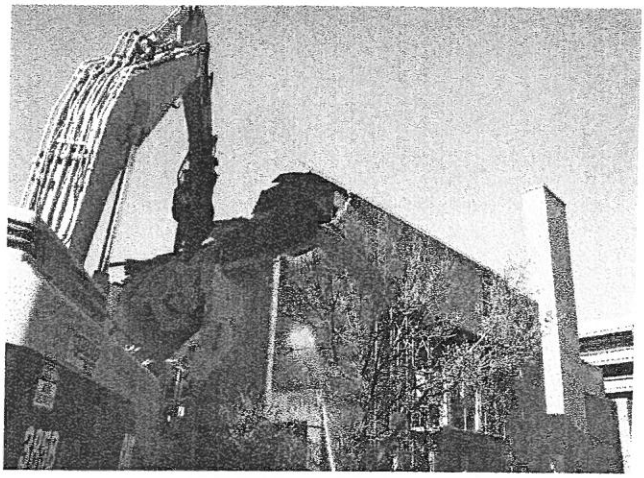
Construction

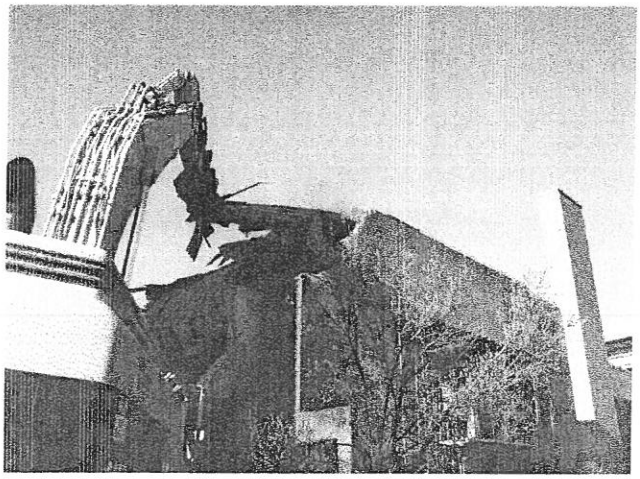
42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

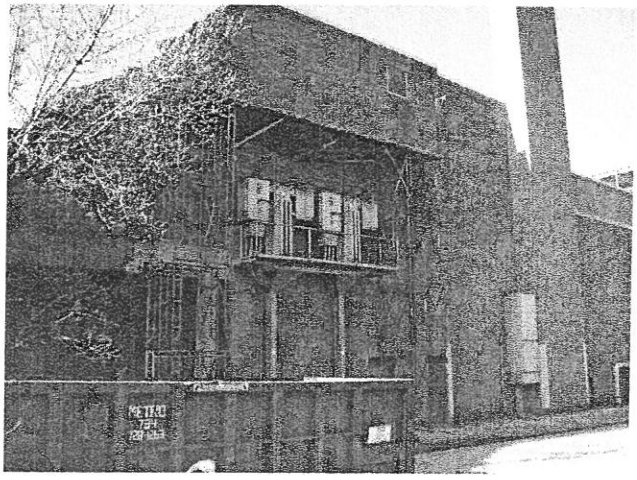
Project Name: Former YMCA Demolition
Project No.: H08-803-D











04-22-2008

HAE

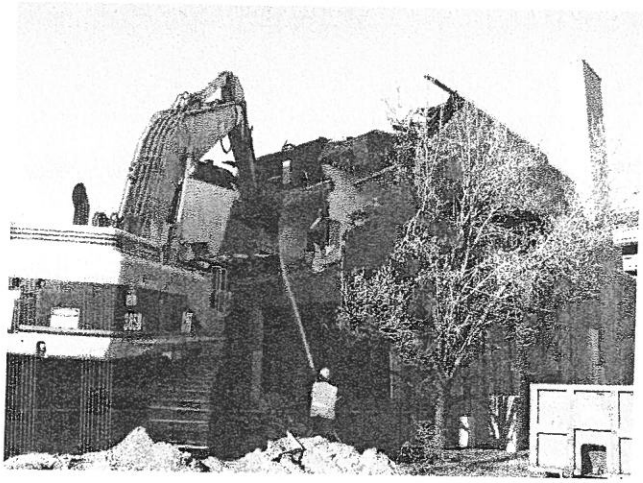
Geotechnical

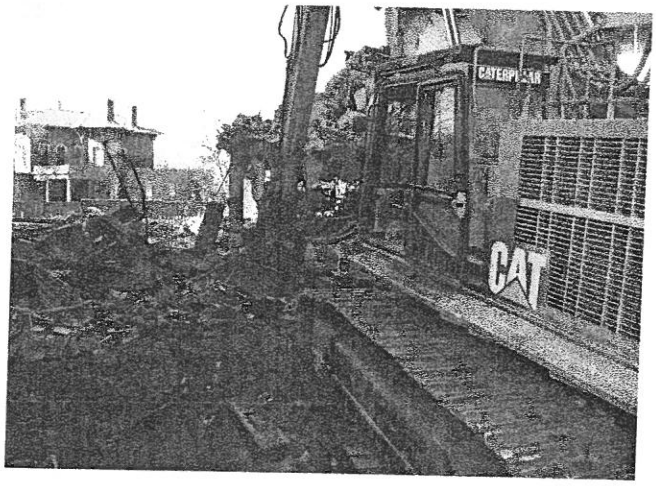
Environmental

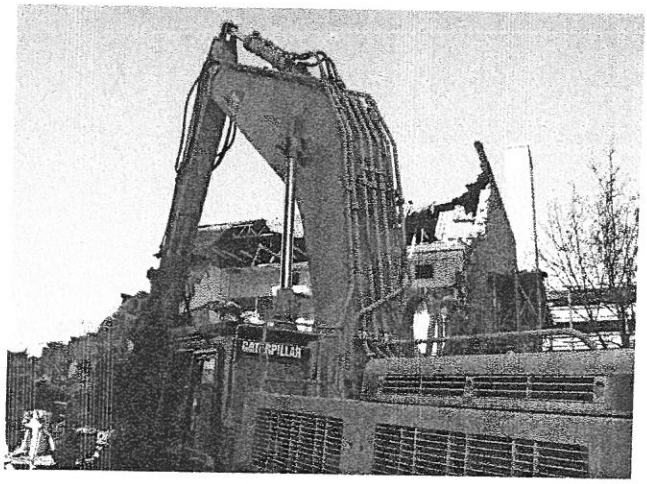
Construction

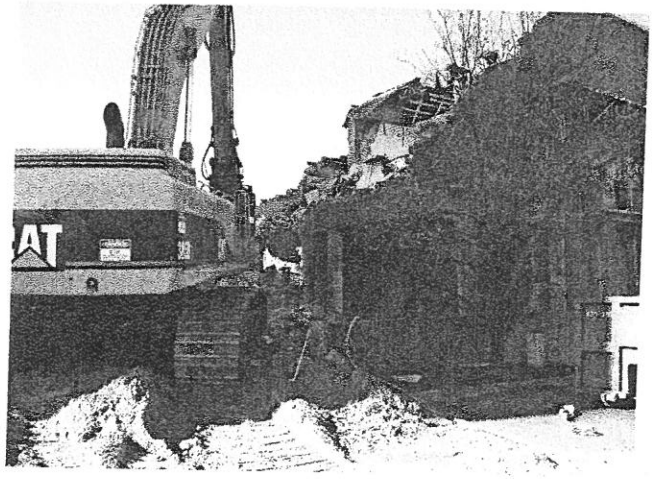
42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

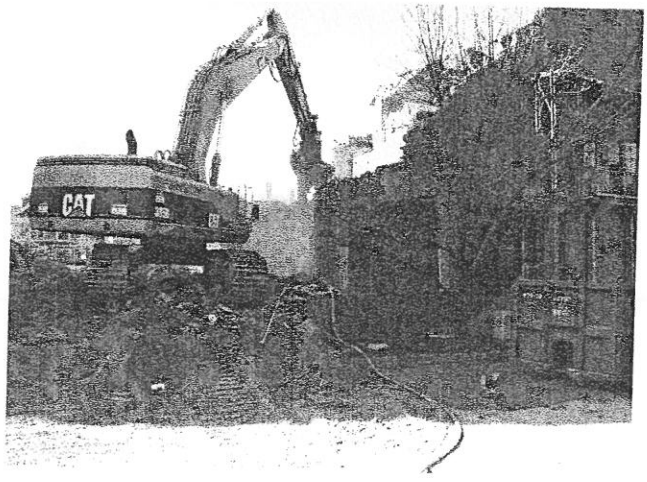
Project Name: Former YMCA Demolition
Project No.: H08-803-D











04-22-2008

EMSL Analytical
2001 East 52nd St., Indianapolis, IN 46205
Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42030 Koppermick Rd. Ste. 318
Canton, MI 48187

Fax: (734) 455-9774 Phone: (734) 455-9771
Project: **FORMER YMCA DEMO ANN ARBOR, MI /H08-803-D**

Customer ID: HAEI22
Customer PO:
Received: 04/24/08 9:20 AM
EMSL Order: 160805363
EMSL Proj:
Report Date: 4/24/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	Analyzed	Volume	RDL	Lead Concentration	Notes
0001	4/24/2008	400 L	10 µg/m³	<10 µg/m³	
Client Sample PUMP P#2, SAMPLE S#2 4/23/08					*Collected:* 4/23/2008
0002	4/24/2008	500 L	8.0 µg/m³	<8.0 µg/m³	
Client Sample PUMP P#4, SAMPLE S#4 4/23/09					*Collected:* 4/23/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced execept in full, without written approval by EMSL. This report relates only to those Items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted

ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 4/24/2008 2:36:27 PM

PB w/RDL

16080 5363 E-mail: haei@earthlink.

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep: Paul Nyfield
Company: Hoengel & Assoc. Eng. Inc.
Street: 42030 Koppernick Rd. Ste. 318
Box #:
City/State: Canton MI **Zip** 48187
Phone Results to: Gus Hoengel
Telephone #: (734) 455-9771
Project Name/Number: Former YMCA Demolition Ann Arbor, MI / H08-803-D

Third Party Billing *requires written authorization from third pa*
EMSL-Bill to: Hoengel & Assoc. Eng., Inc.
Street: 42030 Koppernick Rd. Suite
Box #:
City/State: Canton MI **Zip** 4818
Fax Results to: Gus Hoengel
Fax #: (734) 455-9774
Purchase Order #:

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
☐ NIOSH 7400 (A) Issue 2: August 1994
☐ OSHA w/TWA

TEM AIR
☐ AHERA 40 CFR, Part 763 Subpart E
☐ NIOSH 7402 Issue 2
☐ EPA Level II

PLM - Bulk
☐ EPA 600/R-93/116
☐ NY Stratified Point Count
☐ California Air Resource Board (CARB) 435
☐ NIOSH 9002
☐ PLM NOB (Gravimetric) NYS 198.1
☐ EPA Point Count (400 Points)
☐ EPA Point Count (1,000 Points)
☐ Standard Addition Point Count

SOILS
☐ EPA Protocol Qualitative
☐ EPA Protocol Quantitative
☐ EMSL MSD 9000 Method fibers/gram
☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
☐ Drop Mount (Qualitative)
☐ Chatfield SOP-1988-02
☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
☐ ASTM D-6480-99
☐ Qualitative ☐

TEM WATER
☐ EPA 100.1
☐ EPA 100.2
☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
☐ Soil, SW846-7420
☒ Air, NIOSH 7082 KB
☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
☐ Wastewater, SW 846-7420
☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
☐ Air, NIOSH 7105
☐ Wastewater, SW846-7421
☐ Soil, SW846-7421
☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
☐ Soil, SW846-6010
☐ Air, NIOSH 7300

MATERIALS ANALYSIS

☐ Full Particle Identification
☐ Optical Particle Identification
☐ Dust Mites and Insect Fragments
☐ Particle Size & Distribution
☐ Product Comparison
☐ Paint Characterizaton
☐ Failure Analysis
☐ Corrosion Analysis
☐ Glove Box Containment Study
☐ Petrographic Examination of Concrete
☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
☐ Man Made Vitrous Fibers – MMVF's
☐ Synthetic Fiber Identification
☐ Other:

MICROBIAL ANALYSIS

Air Samples
☐ Mold & Fungi by Air O Cell
☐ Mold & Fungi by Agar Plate count & id
☐ Bacterial Count and Gram Stain
☐ Bacterial Count and Identification

Water Samples
☐ Total Coliforms, Fecal Coliforms
☐ Escherichia Coli, Fecal Streptococcus
☐ Legionella
☐ Salmonella
☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
☐ Mold & Fungi – Direct Examination
☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
☐ Mold & Fungi – Culture (Count & ID)
☐ Mold & Fungi – Culture (Count only)
☐ Bacterial Count & Gram Stain
☐ Bacterial Count & Identification (3 most prominent types)
☐ Other:

IAQ ANALYSIS

☐ Nuisance Dust (NIOSH 0500 & 0600)
☐ Airborne Dust (PM10, TSP)
☐ Silica Analysis by XRD ☐ Niosh 7500
☐ HVAC Efficiency
☐ Carbon Black
☐ Airborne Oil Mist
☐ Other:

Client Sample # (S) — TOTAL SAMPLE #

Relinquished:	Daniel Howtarn	Date:	04-23-08	Time:	
Received:	[signature]	Date:	4-23-08	Time:	4:05
Relinquished:		Date:		Time:	
Received:	[signature]	Date:	4-24-08	Time:	920

160805363

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

NIOSH 7082 - Lead

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P#2, Sample S#2 04-23-2008	12'S, 10'W of SE corner of bldg. Ton = 12:20 Toff = 15:40 FR = 2.0	Vol. air = 400(L)
Pump P#4, Sample S#4 04-23-2008	12'S, 15'E of SW corner of bldg. Ton = 12:25 Toff = 15:45 FR = 2.5	Vol. air = 500(L)

Relinquished: Daniel Horstan **Date:** 04-23-08 **Time:**
Received: **Date:** 4-24-08 **Time:** 9:00
Relinquished: **Date:** **Time:**
Received: **Date:** **Time:**

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42020 Koppernick Rd. Ste 318
Canton, MI. 48187

April 24, 2008

Ref Number: 080801236
Samples Received: April 23, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition, Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#1	12'S., 55' W. of SE Corner of BLDG..	50	0.02	**<0.2**
S#3	15' S., 60' E. of SW Corner of BLDG.	50	0.02	**<0.2**

LOD-Estimated Limit Of Detection
* Modified
Reviewed by:

Approved Signatory

E-mail: hoei@earthlink.

080801234

EMSL

INDIANAPOLIS, IN **CHICAGO, IL** **ANN ARBOR, I**

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COI

EMSL Rep: Paul Nyfield
Company: Haengel & Assoc. Eng, Inc.
Street: 42030 Koppernick Rd, Ste. 318
Box #:
City/State: Canton MI **Zip** 48187
Phone Results to: Gus Haengel
Telephone #: (734) 455-9771
Project Name/Number: Former YMCA Demolition Ann Arbor, MI / #08-803-D

Third Party Billing requires written authorization from third
EMSL-Bill to: Haengel & Assoc. Eng, In
Street: 42030 Koppernick Rd., Ste
Box #:
City/State: Canton, MI **Zip** 481
Fax Results to: Gus Haengel
Fax #: (734) 455-9774
Purchase Order #:

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count &
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
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- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☒ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S)

TOTAL SAMPLE #

Relinquished:	Daniel Honotan	Date:	04-23-08	Time:	
Received:	RW	Date:	4-23-08	Time:	4:05
Relinquished:		Date:		Time:	
Received:		Date:		Time:	

EMSL

0808012736

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR,

NIOSH 0500 - Dust

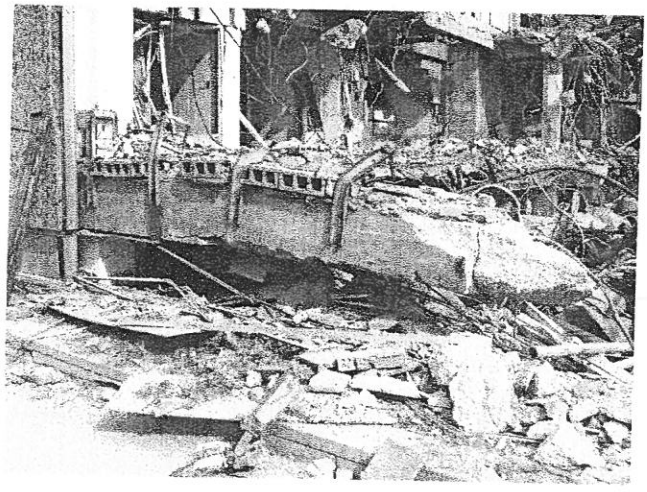
SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P#1, Sample S#1 04-23-2008	12'S, 55'W of SE corner of bldg. Ton = 15:05 Toff = 15:30 FR = 2.0	Vol. air = 50(L)
~~Pump~~ P#3 Sample S#3 04-23-2008	15'S, 60'E of SW corner of bldg. Ton = 15:10 Toff = 15:35 FR = 2.0	Vol. air = 50(L

Relinquished: Daniel Hoover **Date:** 04-23-08 **Time:**
Received: **Date:** **Time:**
Relinquished: **Date:** **Time:**
Received: **Date:** **Time:**

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

HAE
Geotechnical
Environmental
Construction
42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

Project Name: Former YMCA Demolition
Project No.: H08-803-D



04-23-2008

HAE

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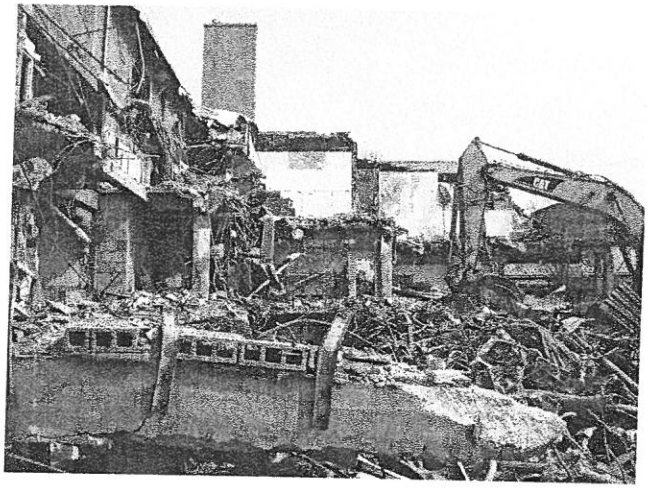

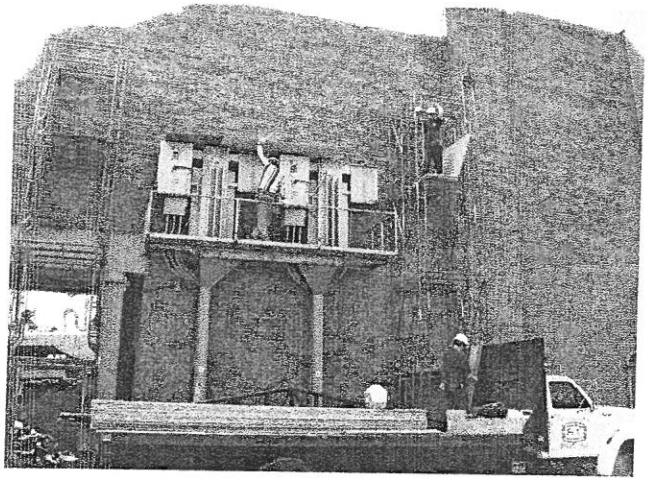

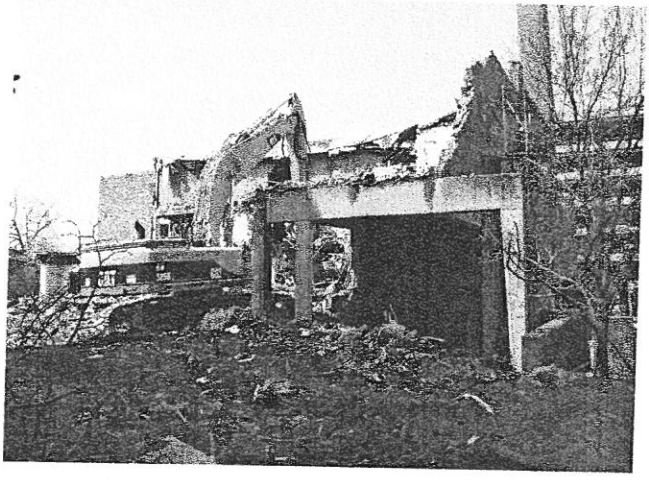

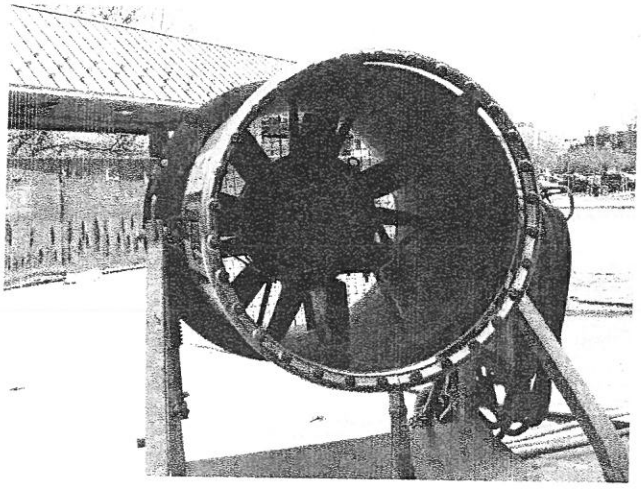

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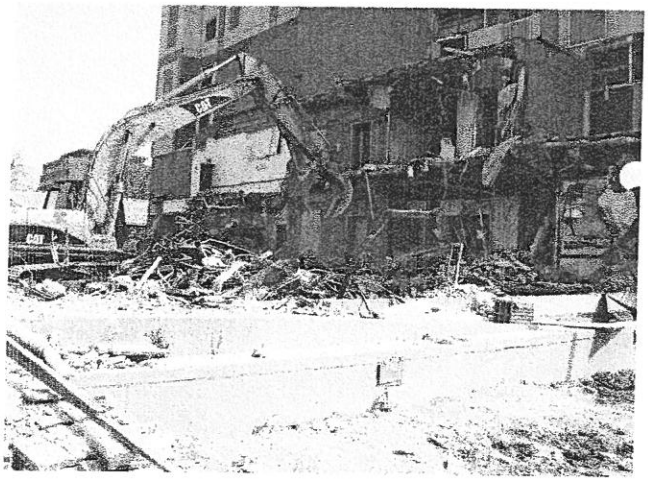

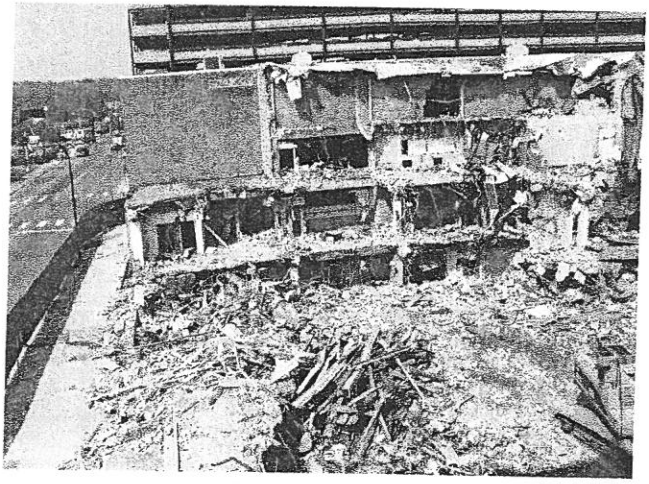

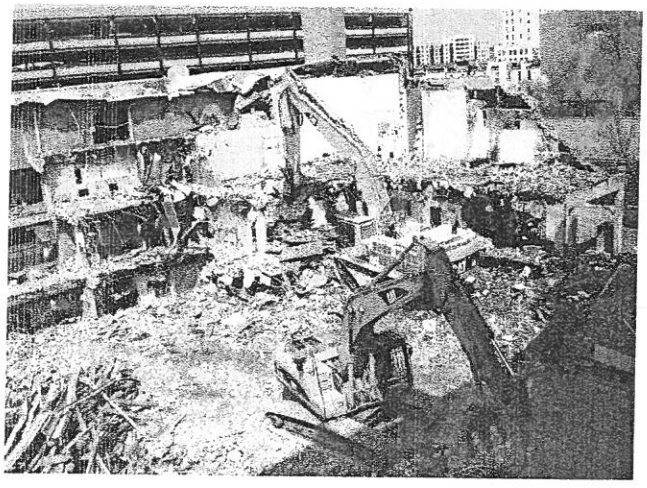

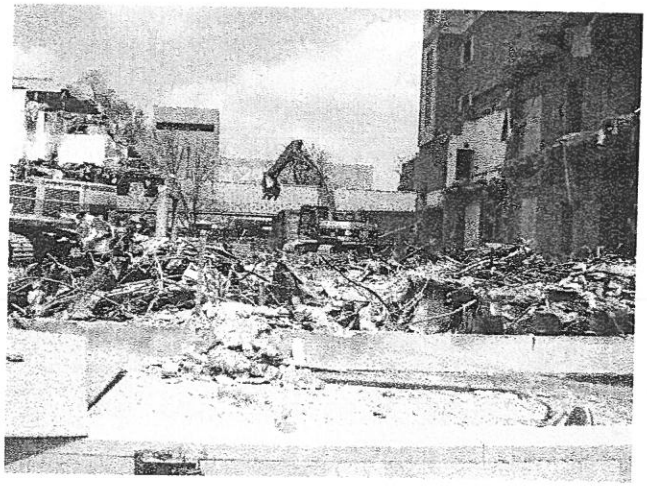

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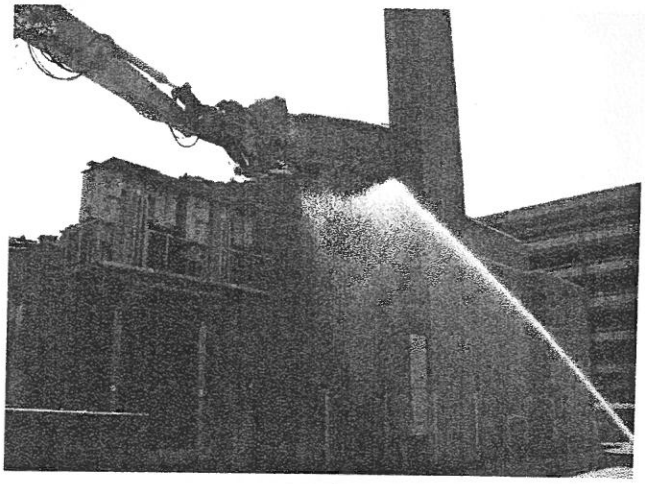

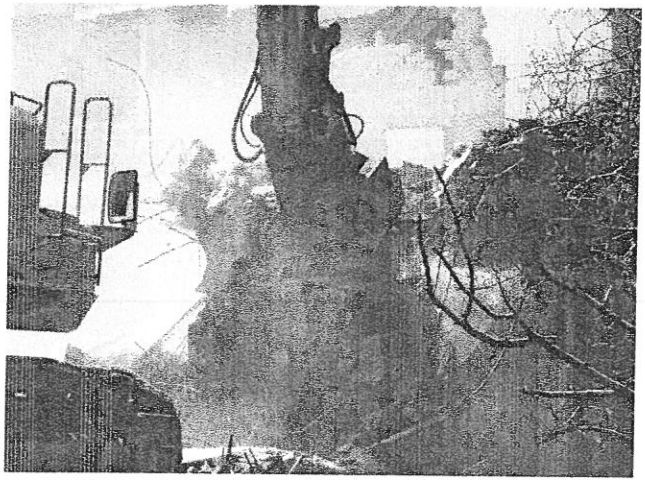

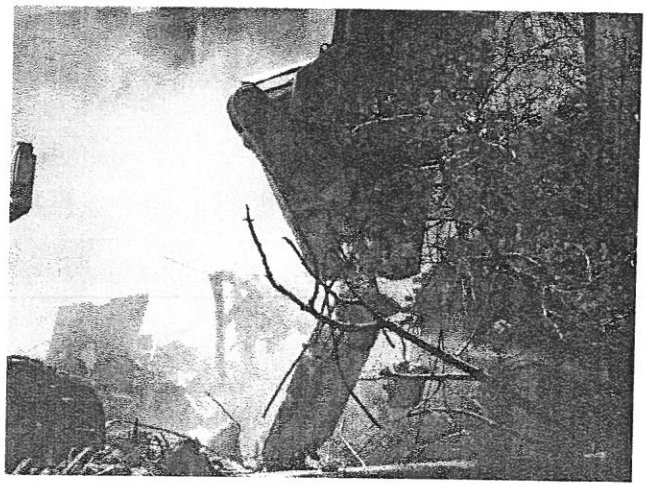

04-23-2008

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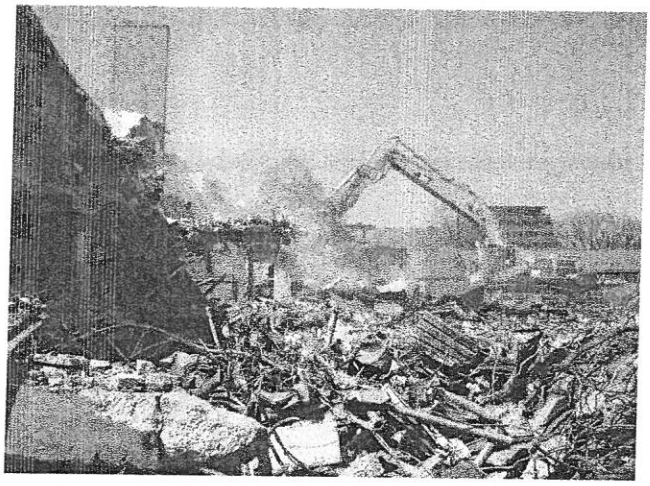

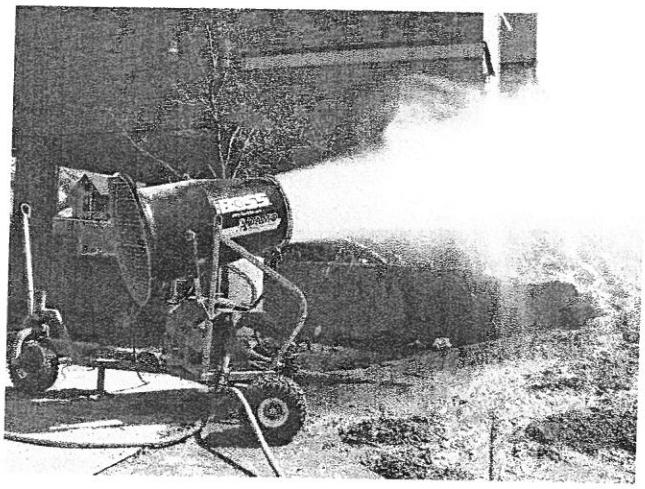

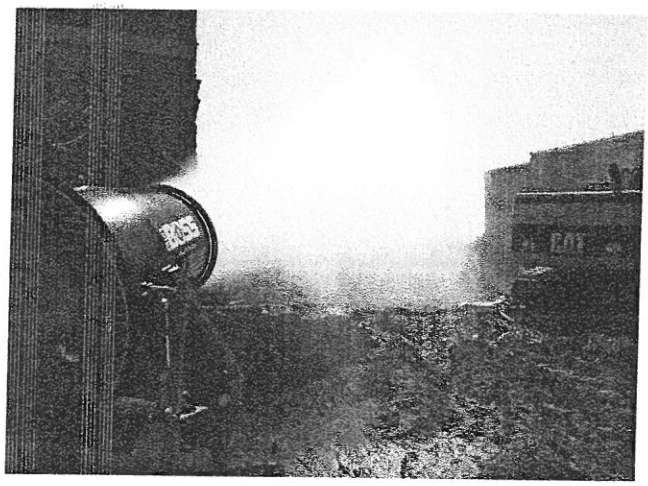

04-23-2008

EMSL Analytical
2001 East 52nd St., Indianapolis, IN 46205
Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42030 Koppermick Rd. Ste. 318
Canton, MI 48187

Fax: (734) 455-9774 Phone: (734) 455-9771
Project: **FORMER YMCA DEMO ANN ARBOR, MI/ H08-803-D**

Customer ID: HAEI22
Customer PO:
Received: 04/25/08 8:55 AM
EMSL Order: 160805446
EMSL Proj:
Report Date: 4/25/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	Analyzed	Volume	RDL	Lead Concentration	Notes
0001	4/25/2008	360 L	11 µg/m³	<11 µg/m³	
Client Sample PUMP P#3, SAMPLE S#3 4/24/08					*Collected:* 4/24/2008
0002	4/25/2008	315 L	13 µg/m³	<13 µg/m³	
Client Sample PUMP P#4, SAMPLE S#4 4/24/09					*Collected:* 4/24/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced execept in full, without written approval by EMSL. This report relates only to those items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted
ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 4/25/2008 2:16:24 PM

PB w/RDL

160805446

EMSL

INDIANAPOLIS, IN **CHICAGO, IL** **ANN ARBOR, M**

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third pa*
Company:	Haengel & Assoc. Eng., Inc.	**EMSL-Bill to:**	Haengel & Assoc, Eng., In
Street:	42030 Koppernick Rd., ste 38	**Street:**	42030 Koppernick Rd., ste
Box #:		**Box #:**	
City/State:	Canton, MI **Zip** 48187	**City/State:**	Canton, MI **Zip** 4818
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / 168-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & id
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
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- ☐ Salmonella
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- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
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- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) **TOTAL SAMPLE #**

Relinquished:	Abbas Hamid	**Date:** 04-24-08	**Time:**
Received:		**Date:** 4-24-08	**Time:** 2:40
Relinquished:		**Date:** 4/25/08	**Time:** 9:55
Received:		**Date:**	**Time:**

5446

EMSL

INDIANAPOLIS, IN **CHICAGO, IL** **ANN ARBOR, M**

NIOSH 7082

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P#3, Sample S#3 04-24-08	35'N, 10'W from NE corner of bldg. Ton: 9:15 Toff: 12:45 F.R.: 2.0	Vol. air = 36[illegible]
Pump P#4, Sample S#4 04-24-08	45'N, 5'E from NW corner of bldg Ton: 9:20 Toff: 12:20 F.R.: 1.75	Vol. air = 315

Relinquished:	[signature]	Date: 4-24-08	Time:
Received:	[signature]	Date: 4/25/08	Time:
Relinquished:		Date:	Time:
Received:		Date:	Time:

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42020 Koppernick Rd. Ste 318
Canton, MI. 48187

April 25, 2008

Ref Number: 080801252
Samples Received: April 24, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition, Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#1	35' N., 29' W. from NE Corner of BLDG.	60	0.02	**<0.2**
S#2	40' N., 45' E. from NW Corner of BLDG..	60	0.02	**<0.2**

LOD-Estimated Limit Of Detection
* Modified
Reviewed by:

Approved Signatory

EMSL

080801252

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, I

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.CO

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third*
Company:	Haengel & Assoc. Eng., Inc	**EMSL-Bill to:**	Haengel & Assoc. Eng
Street:	42050 Koppernick Rd., Ste 18	**Street:**	42050 Koppernick Rd., S
Box #:		**Box #:**	
City/State:	Canton, MI **Zip** 48187	**City/State:**	Canton, MI **Zip** 481
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former MIE A Demolition Ann Arbor, MI / 408-803-D	**Purchase Order #:**	

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☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

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- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) _____ - _____ **TOTAL SAMPLE #** _____

Relinquished:	Abbas Hamid	**Date:**	04-24-08	**Time:**	
Received:	AW	**Date:**	4-24-08	**Time:**	2140
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR,

NIOSH 0500 - Dust

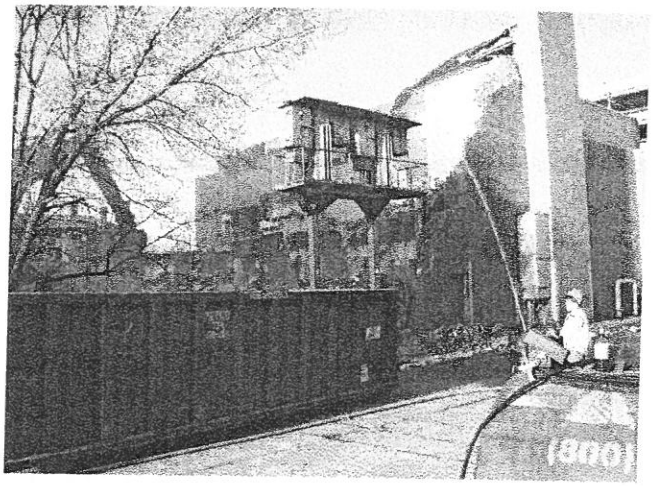
SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P#1, Sample S#1 04-24-08	35'N, 29'W from NE corner of bldg Ton = 9:05 Toff = 9:35 F.R: 2.0	Vol. air = 6
PUMP P# 2, Sample S#2 04-24-08	40'N, 45'E from NW corner of bldg Ton = 9:10 Toff = 9:40 F.R: 2.0	Vol. air = 6

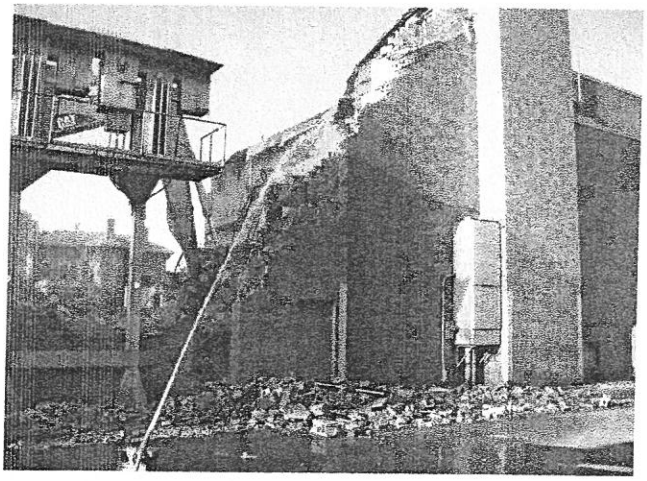
Relinquished: Abbas Hamid **Date:** 04-24-08 **Time:**
Received: **Date:** **Time:**
Relinquished: **Date:** **Time:**
Received: **Date:** **Time:**

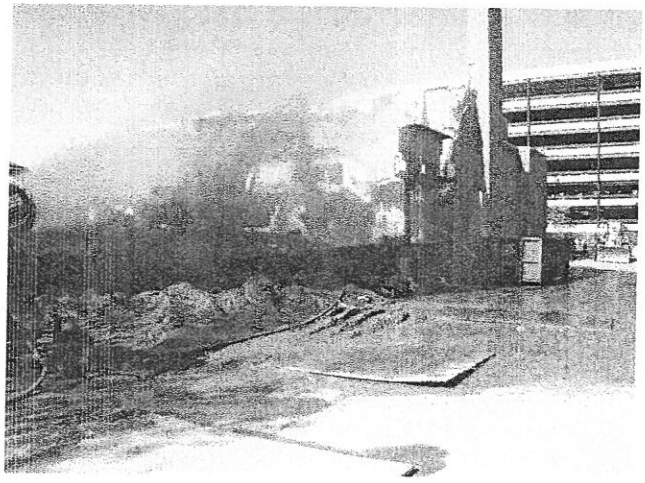
EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

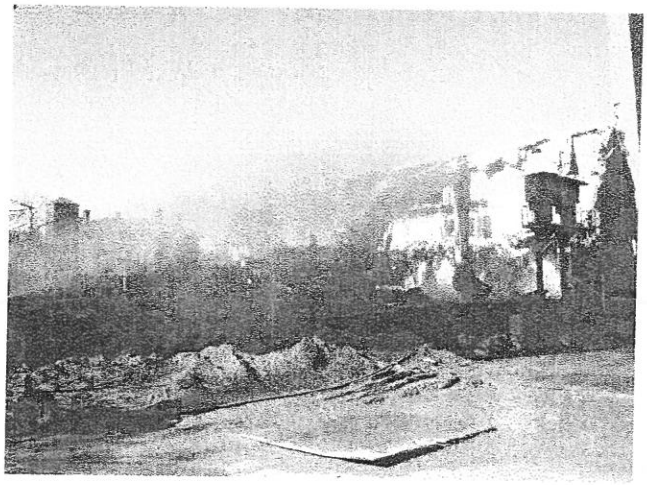
HAE
Geotechnical
Environmental
Construction
42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

Project Name: Former YMCA Demolition
Project No.: H08-803-D









04-24-2008

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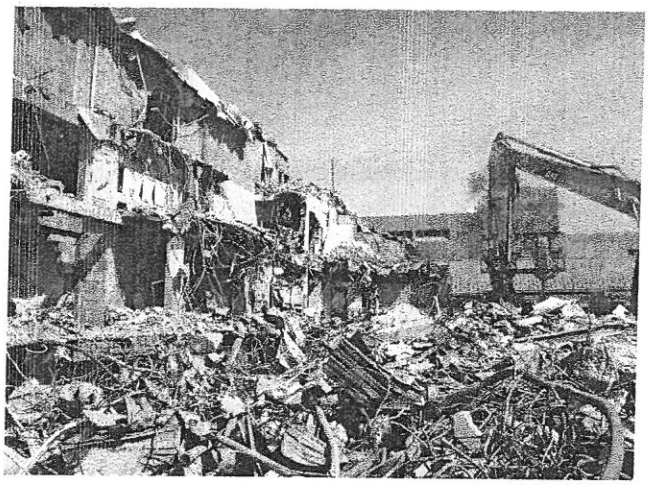

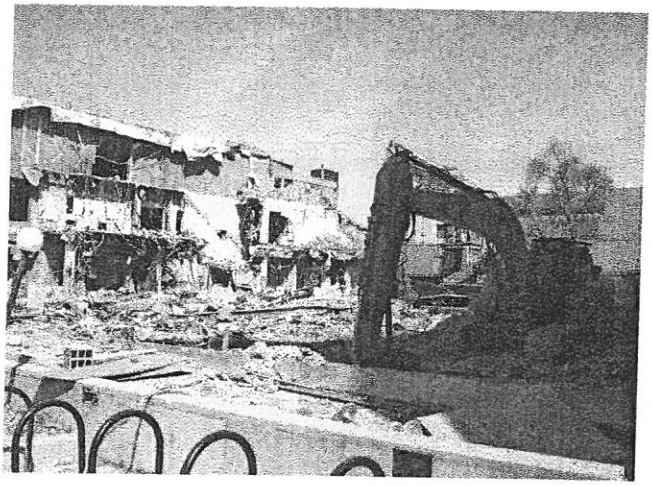

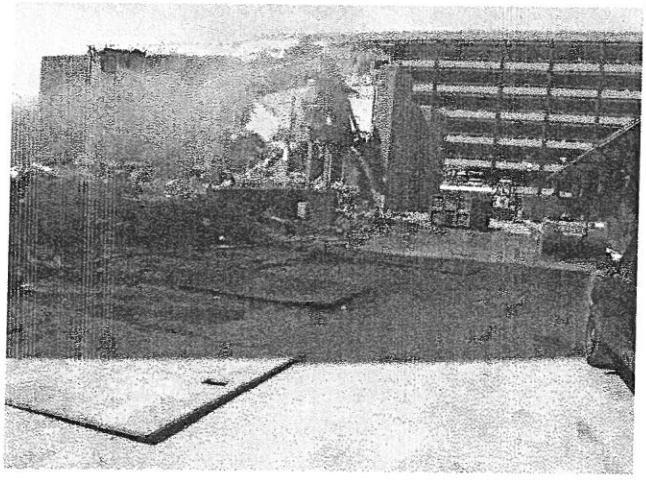

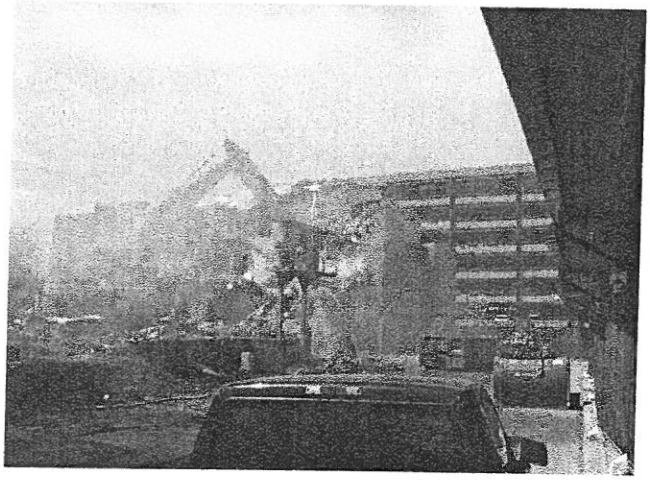

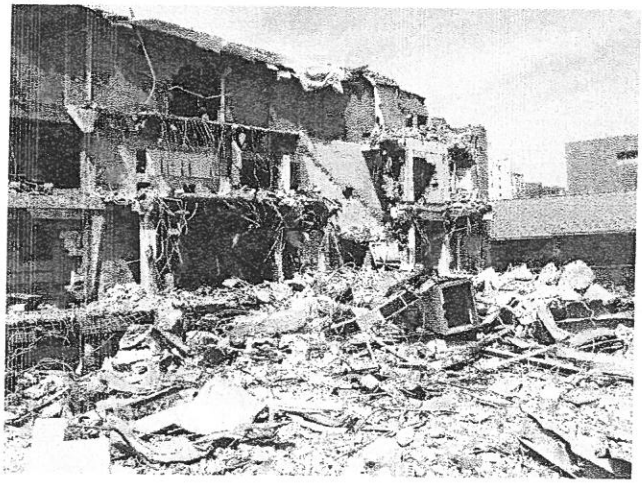

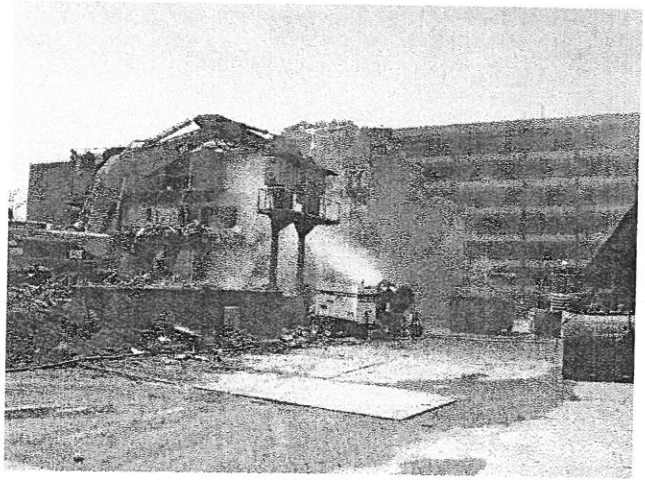

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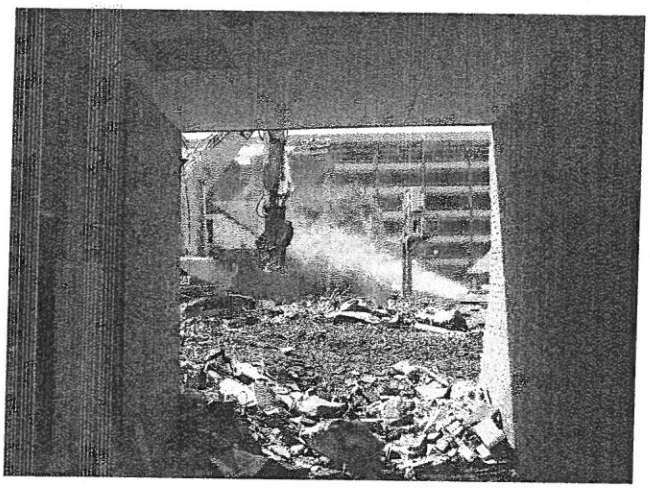

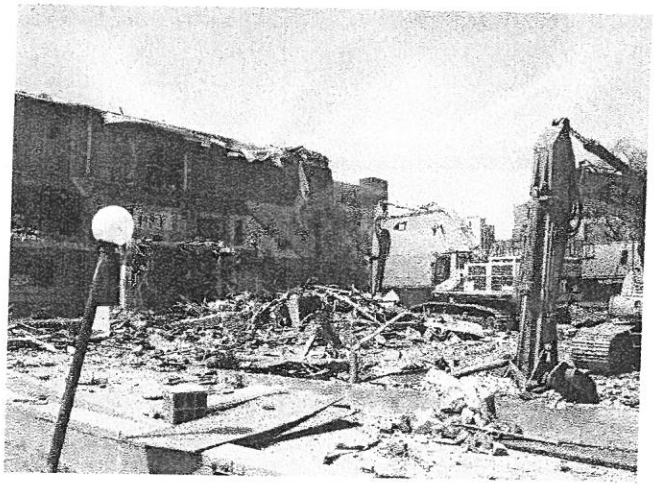

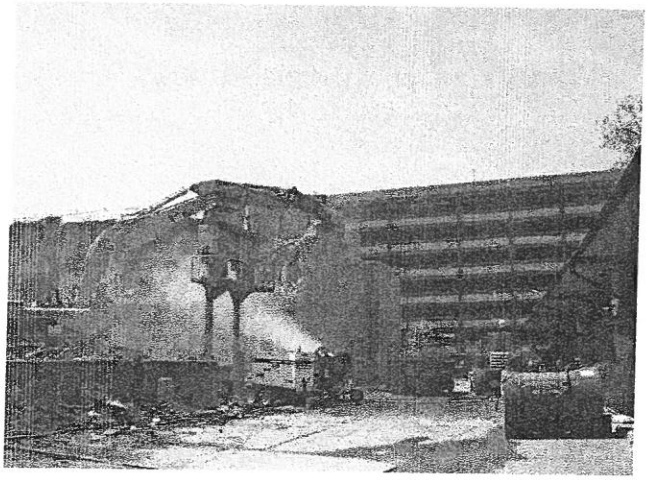

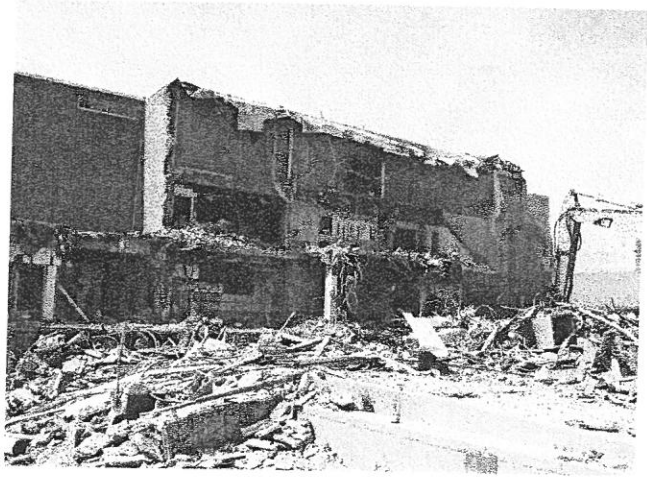

04-24-2008

EMSL Analytical
2001 East 52nd St., Indianapolis, IN 46205
Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42030 Koppermick Rd. Ste. 318
Canton, MI 48187

Fax: (734) 455-9774 Phone: (734) 455-9771
Project: **FORMER YMCA DEMO ANN ARBOR, MI /H08-803-D**

Customer ID: HAEI22
Customer PO:
Received: 04/28/08 10:10 AM
EMSL Order: 160805536
EMSL Proj:
Report Date: 4/28/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	Analyzed	Volume	RDL	Lead Concentration	Notes
0001	4/28/2008	315 L	13 µg/m³	<13 µg/m³	
Client Sample PUMP P-2 SAMPL S-2 4/25/08					*Collected:* 4/25/2008
0002	4/28/2008	450 L	8.9 µg/m³	<8.9 µg/m³	
Client Sample PUMP P-4 SAMPL S-4 4/25/08					*Collected:* 4/25/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced execept in full, without written approval by EMSL. This report relates only to those items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted

ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 4/28/2008 2:14:10 PM

PB w/RDL

160805536

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third*
Company:	Haengel & Assoc. Eng. Inc.	**EMSL-Bill to:**	Haengel & Assoc. Eng. Inc.
Street:	42030 Koppernick Rd., Ste 318	**Street:**	42030 Koppernick Rd., Ste. 3
Box #:		**Box #:**	
City/State:	Canton MI **Zip** 48187	**City/State:**	Canton MI **Zip** 481
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / #08-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count &
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) **TOTAL SAMPLE #**

Relinquished:	Ezuel Honotare	**Date:** 04-25-08	**Time:** 13 20
Received:		**Date:** 4-25-08	**Time:**
Relinquished:		**Date:** 4/28/08	**Time:** 10:50 AM
Received:		**Date:**	**Time:**

5536

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

NIOSH 7082

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P-2, Sample S-2 04-25-08	35'N, 55'E of NW. corner of bldg. Ton = 9:50 Toff = 12:50 FR = 1.75	Vol. air = 315(
Pump P-4, Sample S-4 04-25-08	15'S, 80'E of SW. corner of bldg. Ton = 10:00 Toff = 13:00 FR = 2.5	Vol. air = 450(

Relinquished: Daniel Horotan **Date:** 04-25-08 **Time:** 13:20
Received: [signature] **Date:** 4/28/08 **Time:** 10:10
Relinquished: **Date:** **Time:**
Received: **Date:** **Time:**

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42020 Koppernick Rd. Ste 318
Canton, MI. 48187

April 26, 2008

Ref Number: 080801265
Samples Received: April 25, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition, Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#1	35'N., 75' E of NW Corner of BLDG	70	0.02	**<0.2**
S#3	15' S., 60' E. of SW Corner of BLDG.	60	0.02	**<0.2**

LOD-Estimated Limit Of Detection
* Modified

Reviewed By: Benjamin R Saye-CIH

Approved Signatory

0808801265

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR,

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.CO

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from thi*
Company:	Haengel & Assoc. Eng. Inc.	**EMSL-Bill to:**	Haengel & Assoc. Eng.
Street:	42030 Koppernick Rd. Ste. 318	**Street:**	42030 Koppernick Rd. Ste.
Box #:		**Box #:**	
City/State:	Canton MI **Zip** 48187	**City/State:**	Canton MI **Zip** 48
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / 408-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420☐ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010☐ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS
- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSI

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococc
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up t direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS
- ☒ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐Niosh 750
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S)

TOTAL SAMPLE #

Relinquished:	Daniel Hendrix	**Date:**	04-25-08	**Time:**	13 20
Received:	KW	**Date:**	4-25-08	**Time:**	1:15
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

08080 1365

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR,

NIOSH 0500 - DUST

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P-1, Sample S-1 04-25-08	35'N, 75'E of NW corner of bldg. Ton = 9:45 Toff = 10:20 FR = 2.0	Vol. air = 70 (
Pump P-3, Sample S-3 04-25-08	15'S, 60'E of SW corner of bldg. Ton = 9:55 Toff = 10:25 FR = 2.0	Vol. air = 60 (

Relinquished: Daniel Hoctor **Date:** 04-25-08 **Time:** 13:20
Received: **Date:** **Time:**
Relinquished: **Date:** **Time:**
Received: **Date:** **Time:**

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254

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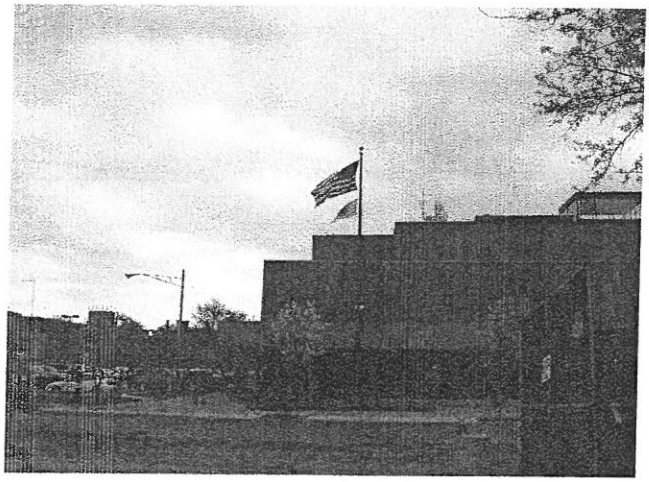
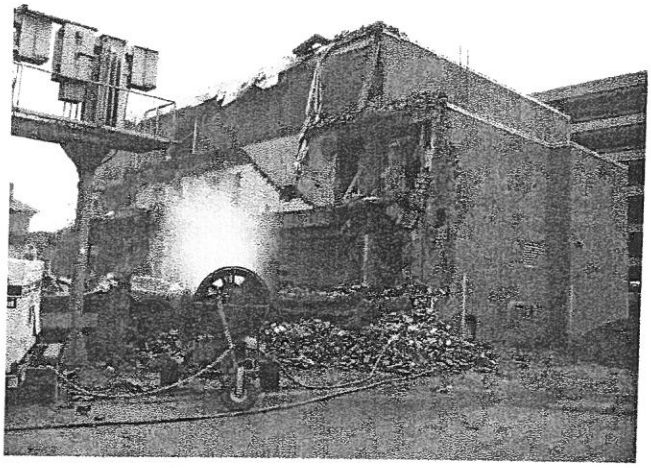
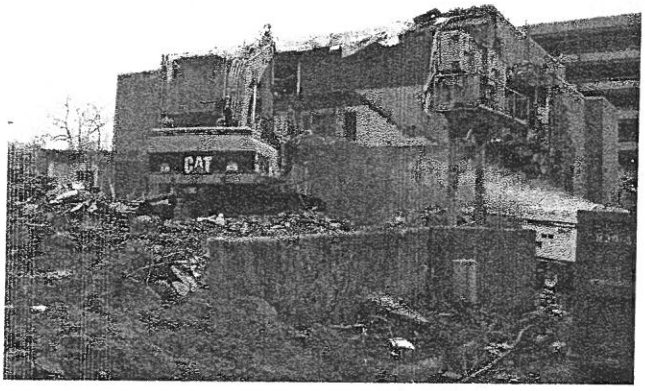
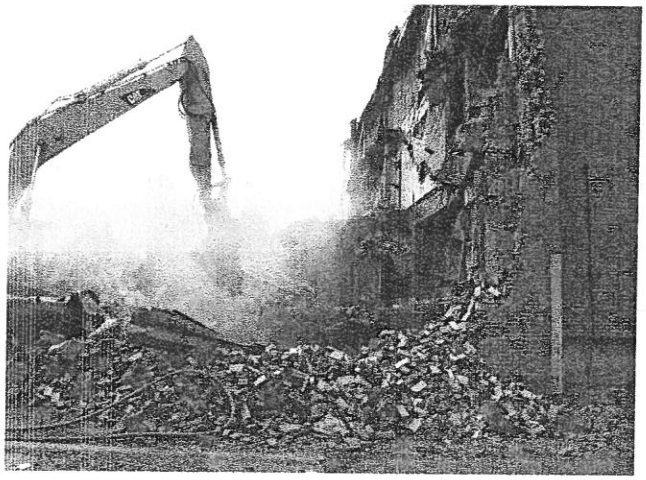
Email: haei@earthlink.net

Project Name: Former YMCA Demolition
Project No.: H08-803-D









04-25-2008

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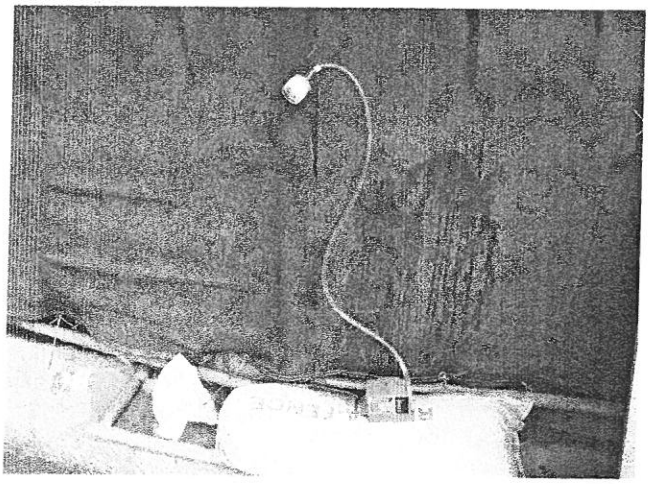
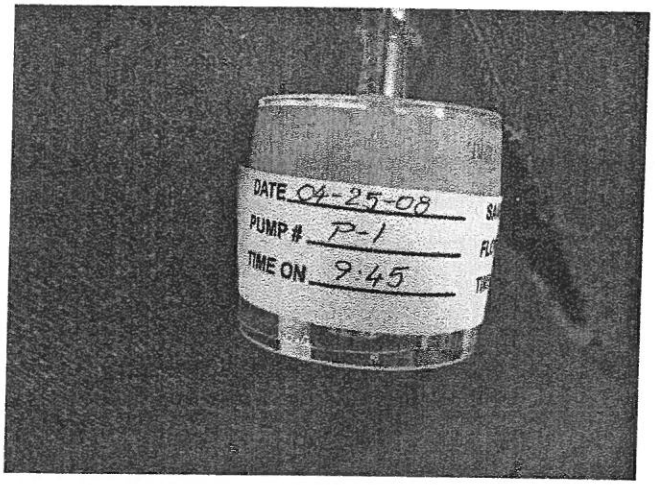
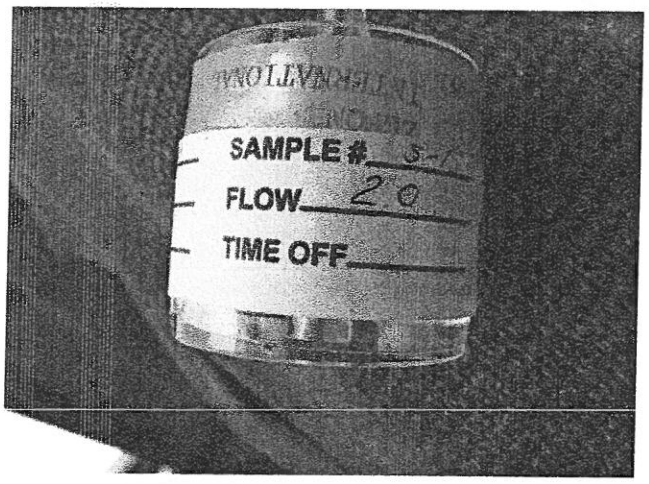
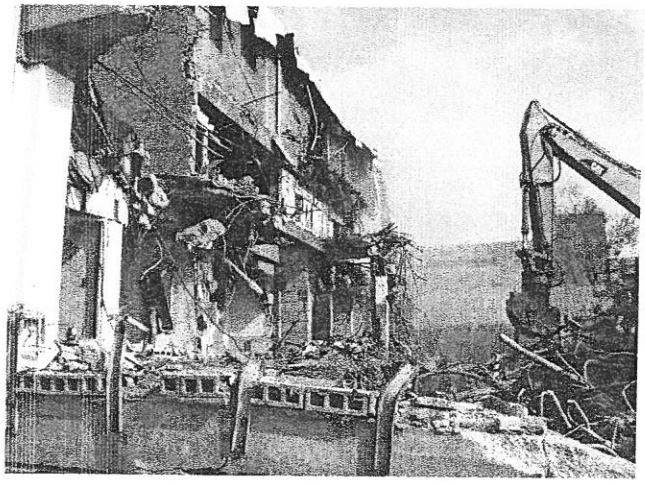
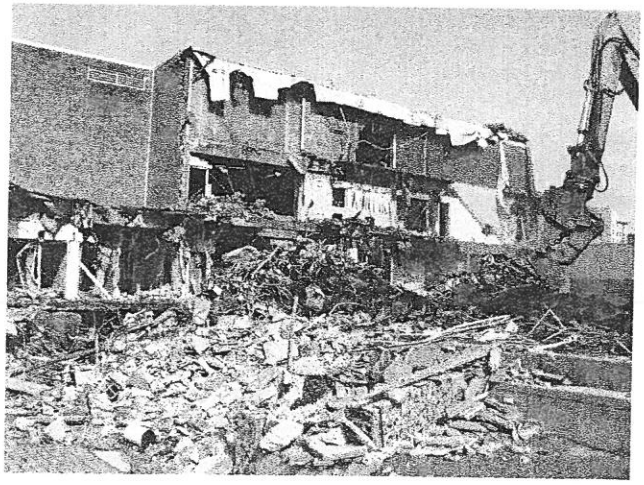
Project Name: Former YMCA Demolition
Project No.: H08-803-D











HAE

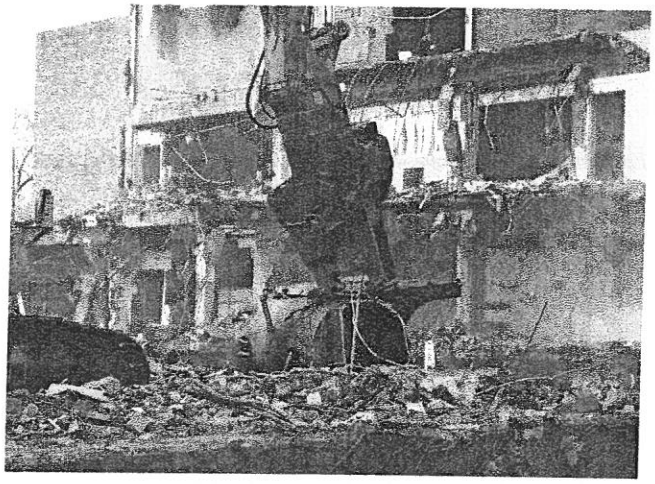
Geotechnical

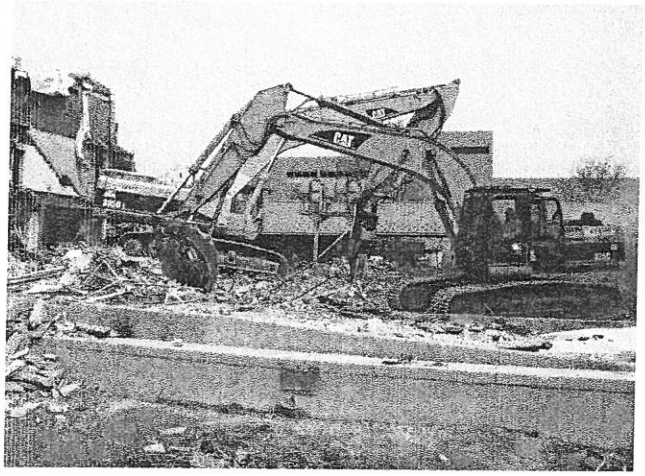
Environmental

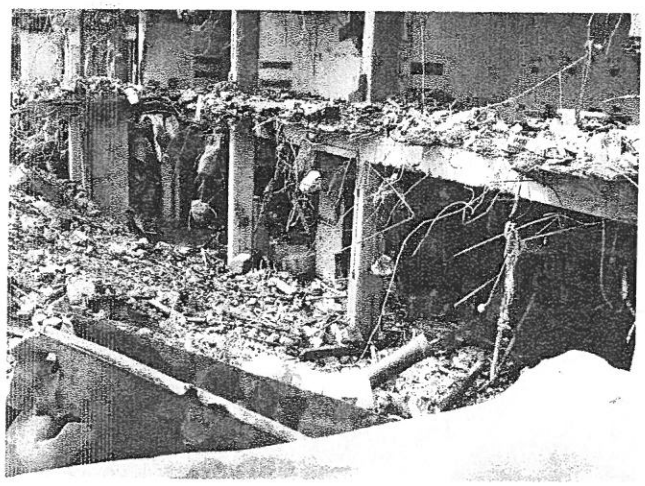
Construction

42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

Project Name: Former YMCA Demolition
Project No.: H08-803-D







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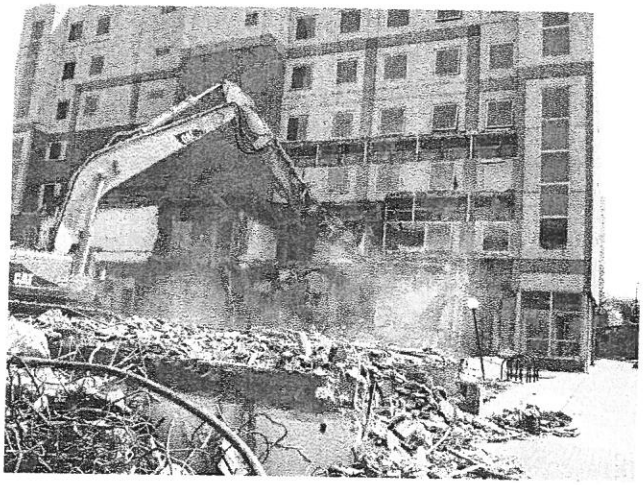

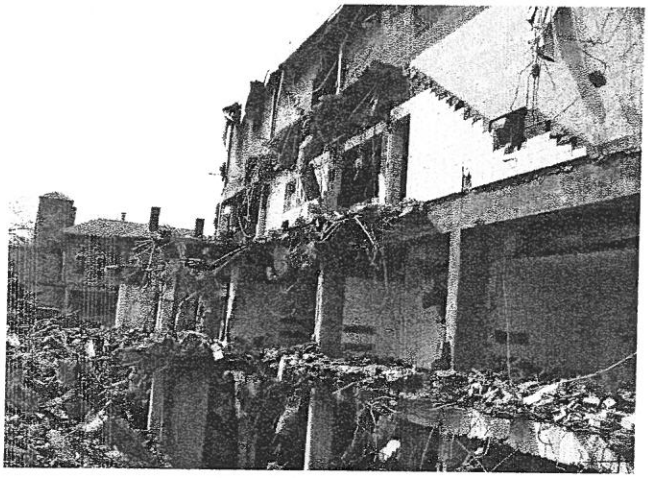

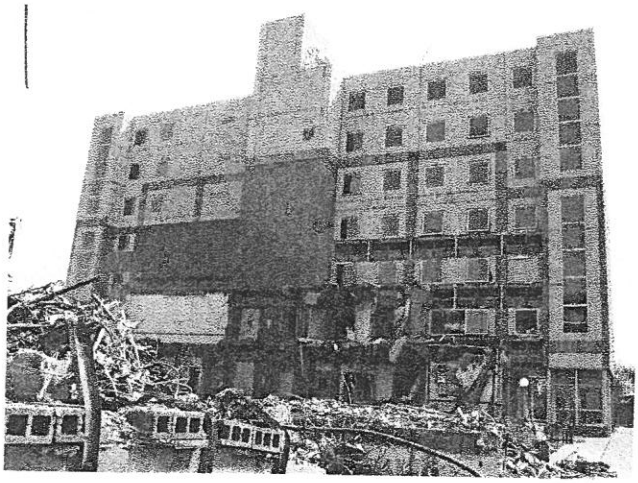

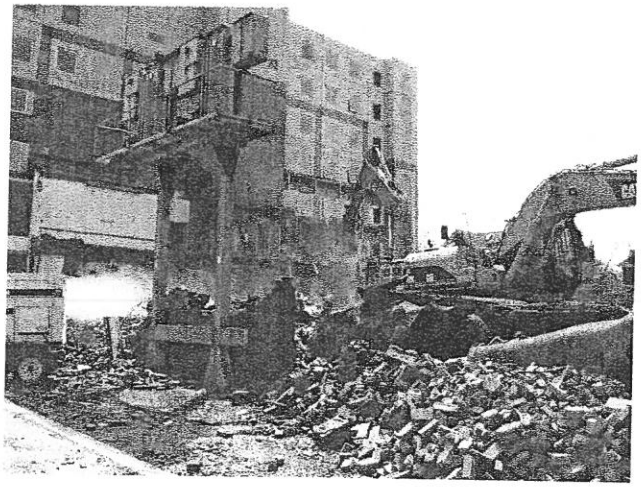

EMSL Analytical
2001 East 52nd St., Indianapolis, IN 46205
Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42030 Koppermick Rd. Ste. 318
Canton, MI 48187

Fax: (734) 455-9774 Phone: (734) 455-9771
Project: **FORMER YMCA DEMO ANN ARBOR, MI / H08-803-D**

Customer ID: HAEI22
Customer PO:
Received: 04/29/08 8:50 AM
EMSL Order: 160805603
EMSL Proj:
Report Date: 4/29/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	Analyzed	Volume	RDL	Lead Concentration	Notes
0001	4/29/2008	360 L	11 µg/m³	<11 µg/m³	
Client Sample PUMP P#4, SAMPLE S#4 4/26/08					*Collected:* 4/26/2008
0002	4/29/2008	360 L	11 µg/m³	<11 µg/m³	
Client Sample PUMP P#5, SAMPLE S#5 4/26/08					*Collected:* 4/26/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced except in full, without written approval by EMSL. This report relates only to those items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted

ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 4/29/2008 4:02:45 PM

PB w/RDL

160805603

INDIANAPOLIS, IN   CHICAGO, IL   ANN ARBOR, M

EMSL ANALYTICAL, Inc.   CHAIN OF CUSTODY   WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third pa*
Company:	Haengel & Assoc. Eng., Inc.	**EMSL-Bill to:**	Haengel & Assoc. Eng., Inc
Street:	42030 Koppernick Rd. Ste 318	**Street:**	42030 Koppernick Rd. ste
Box #:		**Box #:**	
City/State:	Canton, MI **Zip** 48187	**City/State:**	Canton, MI **Zip** 4818
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / H08-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ Air, NIOSH 7082 KB
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & id
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S)

TOTAL SAMPLE #

Relinquished:	Abbas Hamid	Date:	4-26-08	Time:	
Received:	[signature]	Date:	4/28/08	Time:	1 pm
Relinquished:		Date:		Time:	
Received:		Date:		Time:	

5603

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

NOISH 7082

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
pump P#4, Sample #4 04-26-08	15'S, 35'E of NE Corner of bldg Ton = 10:35 Toff = 1:25 FR=2	Vol air = 360 C
pump P#5, Sample #5 04-26-08	12'S of SE Corner of bldg Ton = 10:30 Toff = 1:30 FR=2	Vol air = 360 (L

Relinquished: Abbas Hamid **Date:** 4-26-08 **Time:**

Received: **Date:** 4/28/08 **Time:**

Relinquished: **Date:** 4/29/08 **Time:** 8:50

Received: **Date:** **Time:**

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42020 Koppernick Rd. Ste 318
Canton, MI. 48187

April 29, 2008

Ref Number: 080801290
Samples Received: April 28, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition, Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#1	12' S., 35' W. of SE Corner of BLDG.	90	0.02	**<0.2**
S#2	45' N., 30' W. of NE Corner of BLDG.	90	0.02	**<0.2**
S#3	25' N., 20' E. from SE Corner of BLDG.	90	0.02	**<0.2**

LOD-Estimated Limit Of Detection
* Modified
Reviewed by: Kellyann R Saye-Cook

Approved Signatory

A, B, C

0808801290

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third*
Company:	Haengel & Assoc. Eng., Inc	**EMSL-Bill to:**	Haengel & Assoc. Eng., In
Street:	42030 Koppernick Rd. Ste 318	**Street:**	42030 Koppernick Rd. St
Box #:		**Box #:**	
City/State:	Canton, MI Zip 48187	**City/State:**	Canton, MI Zip 481
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former FMEA Demolition Ann Arbor, MI / 608-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours	☐ 6 Hours	☐ 12 Hours	☒ 24 Hours	☐ 48 Hours	☐ 72 Hours	☐ 4 Days	☐ 5 Days	☐ 6-10 Days

SAMPLE MATRIX

☐ Air	☐ Bulk	☐ Soil	☐ Wipe	☐ Micro-Vac	☐ Drinking Water	☐ Wastewater	☐ Chips	☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count &
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☒ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S)

TOTAL SAMPLE #

Relinquished:	Abbas Hamid	**Date:**	4-25-08	**Time:**	
Received:		**Date:**	4/26/08	**Time:**	11 AM
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

A, B, C 080801290

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

NIOSH 0500

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P#1, Sample S#1 04-26-08	12'S, 35'W of SE Corner of bldg Ton = 11:50 Toff = 12:35 FR = 2.0	Vol. air = 90
pump P#2, sample S#2 04-26-08	45'N, 30'W of NE corner of bldg Ton = 11:55 Toff = 12:40 FR = 2.0	Vol. air = 90
pump P#3, Sample S#3 04-26-08	25'N, 20'E from SE corner of bldg Ton = 12:00 Toff = 12:45 FR = 2.0	Vol. air = 90

Relinquished:	Abbas Hamid	Date:	04-26-08	Time:	
Received:	O.L [illegible]	Date:	4/28/08	Time:	1:11 PM
Relinquished:		Date:		Time:	
Received:		Date:		Time:	

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Construction

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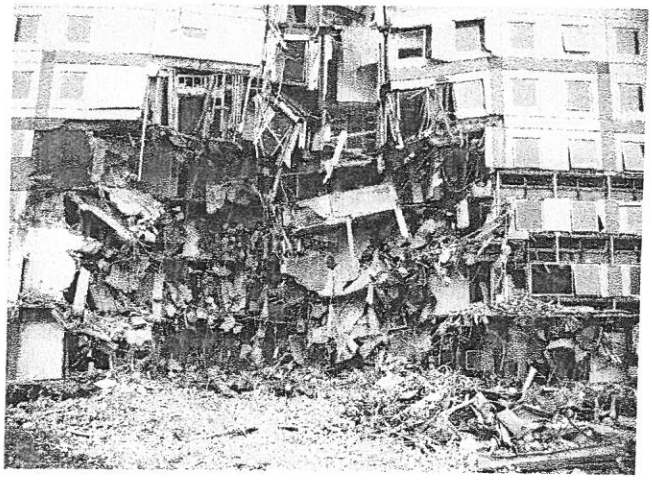
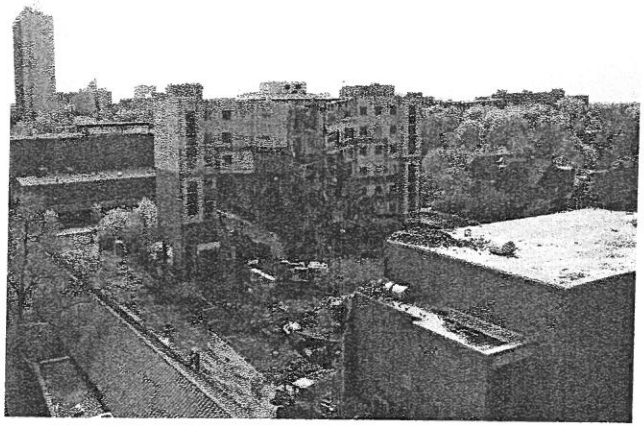
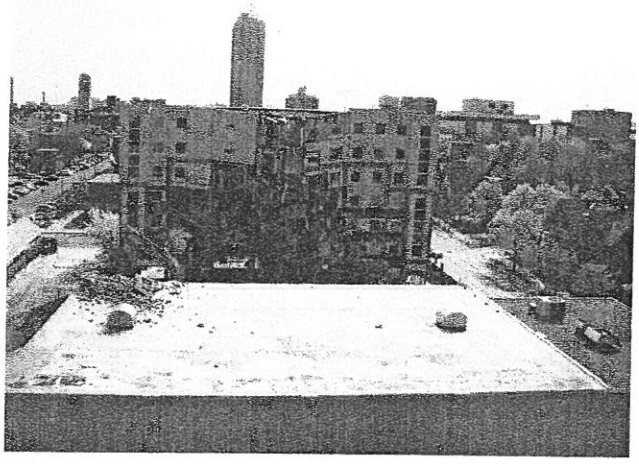
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

Project Name: Former YMCA Demolition
Project No.: H08-803-D







04-26-2008

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Geotechnical
Environmental
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Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

Project Name: Former YMCA Demolition
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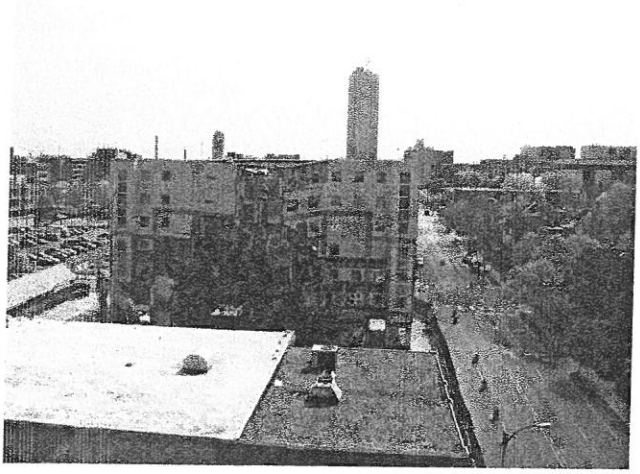

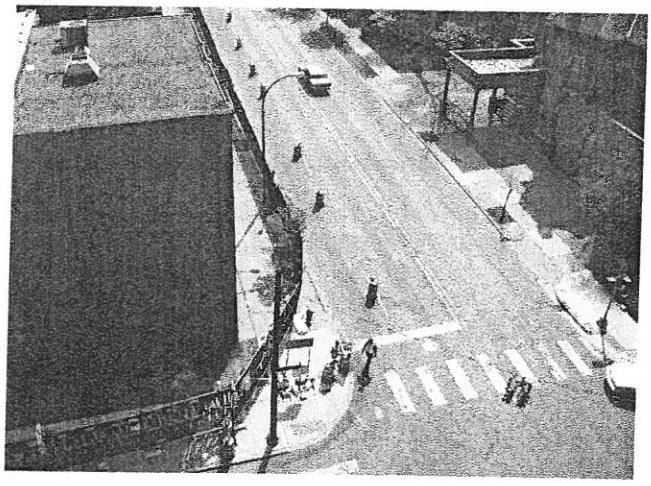

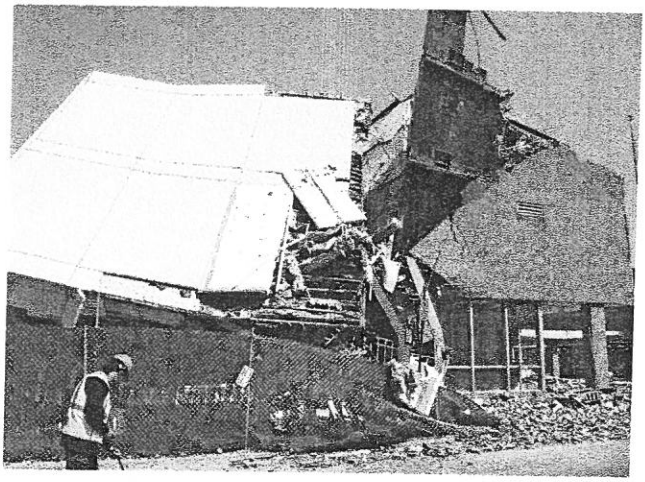

04-26-2008

HAE

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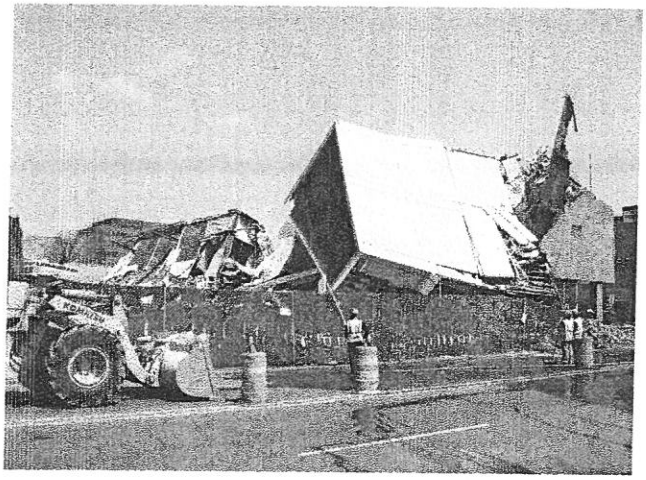
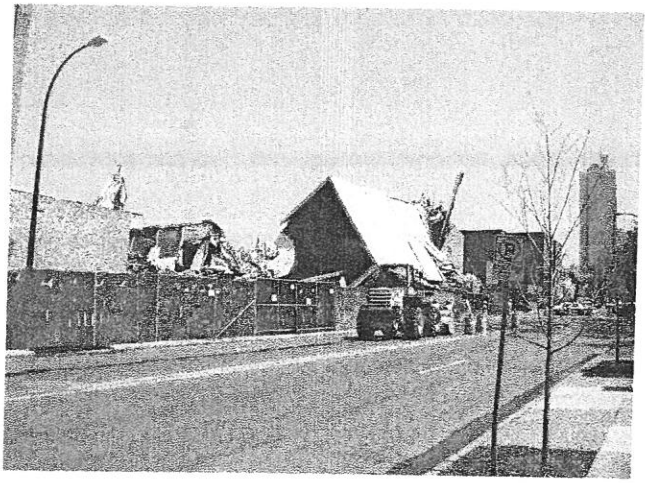
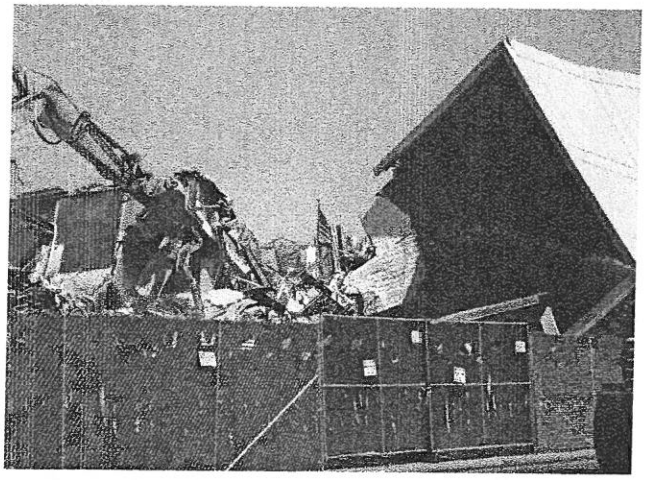
Project Name: Former YMCA Demolition
Project No.: H08-803-D







EMSL Analytical
2001 East 52nd St., Indianapolis, IN 46205
Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42030 Koppermick Rd. Ste. 318
Canton, MI 48187

Fax: (734) 455-9774 Phone: (734) 455-9771
Project: **FORMER YMCA DEMO/ANN ARBOR, MI/ H08-803-D**

Customer ID: HAEI22
Customer PO:
Received: 04/29/08 8:50 AM
EMSL Order: 160805605
EMSL Proj:
Report Date: 4/29/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	*Analyzed*	*Volume*	*RDL*	*Lead Concentration*	*Notes*
0001	4/29/2008	360 L	11 µg/m³	<11 µg/m³	

Client Sample PUMP P#2, SAMPLE S#2 4/27/08 ***Collected:*** 4/27/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced execept in full, without written approval by EMSL. This report relates only to those items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted

ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 4/29/2008 4:00:59 PM

PB w/RDL

160805605

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third pa*
Company:	Haegel & Assoc. Eng., Inc.	**EMSL-Bill to:**	Haegel & Assoc. Eng., Inc.
Street:	42030 Koppernick Rd. Ste 318	**Street:**	42030 Koppernick Rd. Ste 3
Box #:		**Box #:**	
City/State:	Canton, MI Zip 48187	**City/State:**	Canton, MI Zip 4818
Phone Results to:	Gus Haegel	**Fax Results to:**	Gus Haegel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / 408-803-0	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & id
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
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- ☐ Salmonella
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- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S)

TOTAL SAMPLE #

Relinquished:	(04-27-08) Abbas Hamil	**Date:**	04-27-08	**Time:**	
Received:		**Date:**	4/28/08	**Time:**	
Relinquished:		**Date:**	4/28/08	**Time:**	1:30
Received:		**Date:**		**Time:**	

5605

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

NIOSH 7082

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
pump, P#2, Sample S#2 04-27-08	12'E, 20'S from NE corner of bldg Ton = 10:50 Toff: 1:50 FR=2.0	Vol. air = 360 (L

Relinquished: Abas Hamid Date: 4-27-08 Time:
Received: Date: 4/28/08 Time:
Relinquished: Date: 4/29/08 Time: 1057 8:30 PM
Received: Date: Time:

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42030 Koppernick Rd. Ste 318
Canton, MI. 48187

April 29, 2008

Ref Number: 080801289
Samples Received: April 28, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition, Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#1	12' E. from NE Corner of BLDG.	60.0	0.02	**<0.2**

LOD-Estimated Limit Of Detection
* Modified
Reviewed by:

Approved Signatory

d

080801 289

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third*
Company:	Haengel & Assoc. Eng., Inc.	**EMSL-Bill to:**	Haengel & Assoc., Eng., I
Street:	42030 Koppernick Rd. ste 318	**Street:**	42030 Koppernick Rd. St
Box #:		**Box #:**	
City/State:	Canton, MI Zip 48187	**City/State:**	Canton, MI Zip 4818
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former MCA Demolition Ann Arbor, MI / 408-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

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- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

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- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
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- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

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- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
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- ☐ Mold & Fungi by Air O Cell
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- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) _____ **TOTAL SAMPLE #** _____

Relinquished:	Allen Haengel	**Date:**	4-27-08	**Time:**	
Received:		**Date:**	4/28/08	**Time:**	1:15 pm
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

d 08080128 9

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

NIOSH 0500

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
PUMP P#1, Sample S#1 04-27-08	12'E from NE corner of bldg Ton = 10:45 Toff = 11:15 FR = 2.0	Vol. air = 60(

Relinquished: Abby Hamil **Date:** 4-27-08 **Time:**
Received: O.F. **Date:** 4/28/08 **Time:** 115pm
Relinquished: **Date:** **Time:**
Received: **Date:** **Time:**

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

HAE

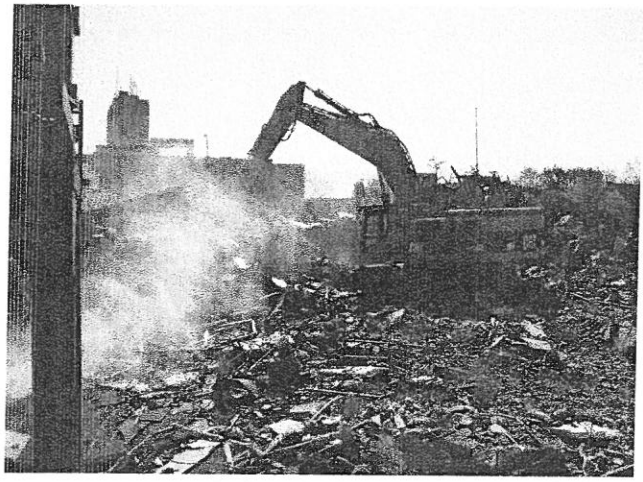
Geotechnical

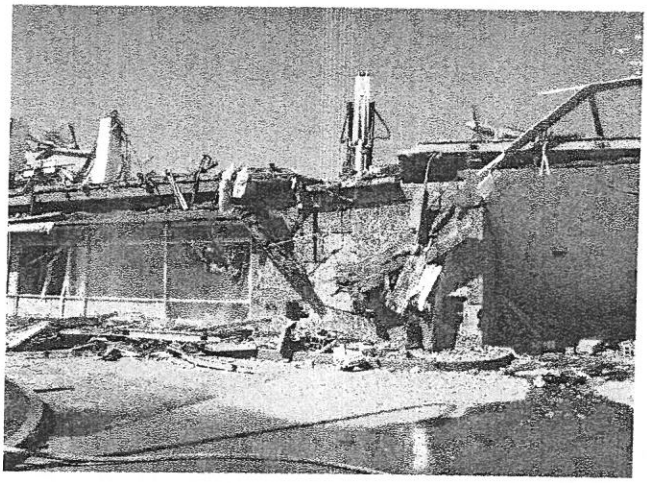
Environmental

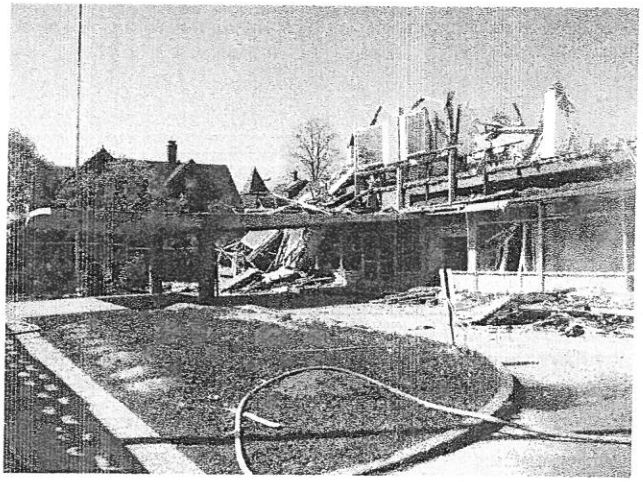
Construction

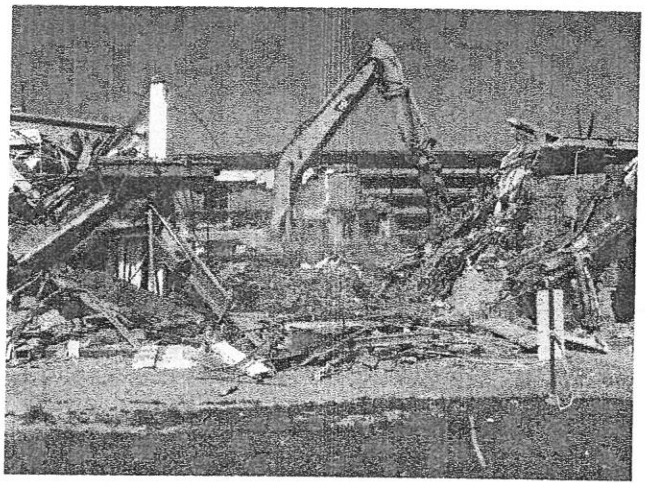
42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

Project Name: Former YMCA Demolition
Project No.: H08-803-D









04-27-2008

HAE

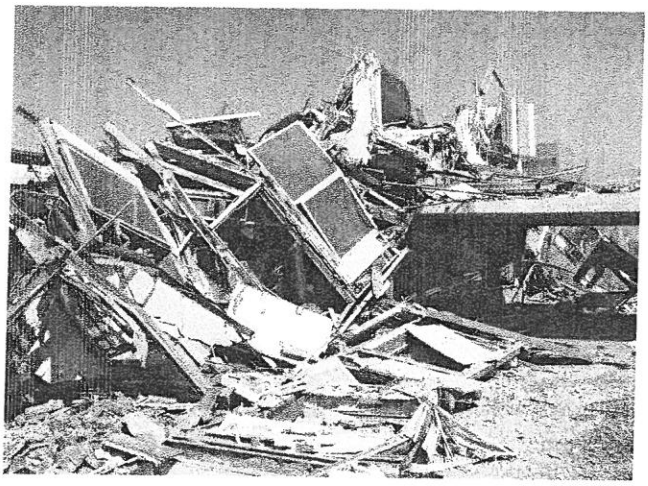
Geotechnical

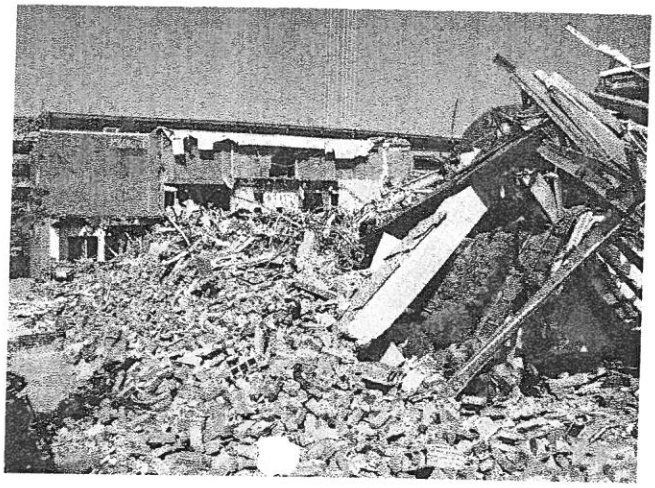
Environmental

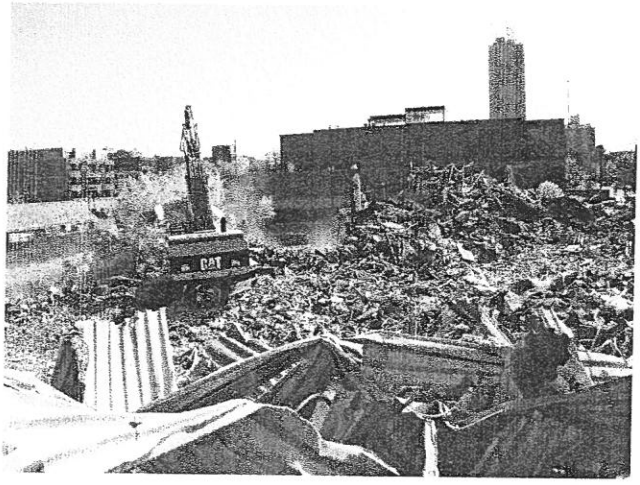
Construction

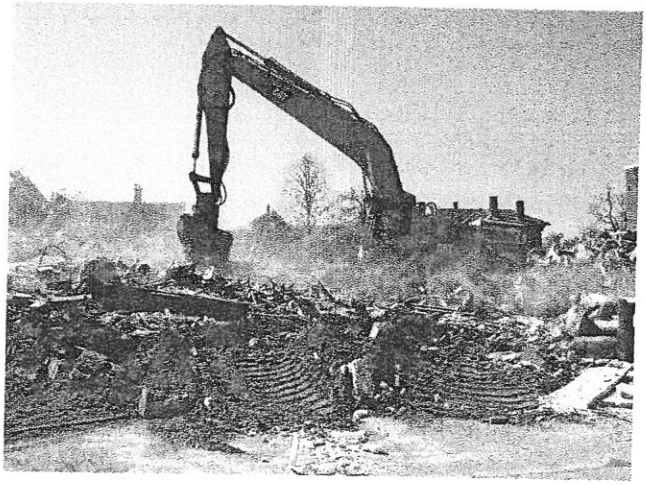
42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

Project Name: Former YMCA Demolition
Project No.: H08-803-D









04-27-2008

EMSL Analytical
2001 East 52nd St., Indianapolis, IN 46205
Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42030 Koppermick Rd. Ste. 318
Canton, MI 48187

Fax: (734) 455-9774 Phone: (734) 455-9771
Project: **FORMER YMCA DEMO ANN ARBOR, MI /H08-803-D**

Customer ID: HAEI22
Customer PO:
Received: 04/29/08 8:50 AM
EMSL Order: 160805595
EMSL Proj:
Report Date: 4/29/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	*Analyzed*	*Volume*	*RDL*	*Lead Concentration*	*Notes*
0001	4/29/2008	360 L	11 µg/m³	<11 µg/m³	
Client Sample PUMP P#2 SAMPLE S-2 4/28/08					***Collected:*** 4/28/2008
0002	4/29/2008	315 L	13 µg/m³	<13 µg/m³	
Client Sample PUMP P#4 SAMPLE S-4 4/28/09					***Collected:*** 4/28/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced except in full, without written approval by EMSL. This report relates only to those items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted

ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 4/29/2008 11:43:48 AM

PB w/RDL

160805595

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third pa*
Company:	Haengel & Assoc. Eng., Inc.	**EMSL-Bill to:**	Haengel & Assoc. Eng., I
Street:	42030 Koppernick Rd., Ste 318	**Street:**	42030 Koppernick Rd., Ste 3
Box #:		**Box #:**	
City/State:	Canton, MI **Zip** 48187	**City/State:**	Canton MI **Zip** 481
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
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Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / H08-803-D	**Purchase Order #:**	

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- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S)

TOTAL SAMPLE #

Relinquished:	Daniel Horotan	**Date:**	04-28-08	**Time:**
Received:	D. Wyatt	**Date:**	4/28/08	**Time:**
Relinquished:		**Date:**	4/28/08	**Time:**
Received:		**Date:**		**Time:**

5595

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

NIOSH 7082 - Lead

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump: P-2 Sample S-2 04-28-08	45'N, 25'W of NE corner of bldg. Ton = 9:35 Toff = 12:35 FR = 2.0	Vol. air = 360 (L)
Pump P-4, Sample S-4 04-28-08	10'S, 15'W of SE corner of bldg. Ton = 9:50 Toff = 12:50 FR = 1.75	Vol. air = 315 (L)

Relinquished: Daniel Montano **Date:** 04-28-08 **Time:**
Received: **Date:** 4/28/08 **Time:**
Relinquished: **Date:** **Time:** 1:10
Received: **Date:** **Time:** 8:50 FR

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42020 Koppernick Rd. Ste 318
Canton, MI. 48187

April 29, 2008

Ref Number: 080801288
Samples Received: April 28, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition, Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#1	45' N., of NE Corner of BLDG.	60	0.02	**<0.2**
S#3	10' S., 75' W. of SE Corner of BLDG..	60	0.02	**<0.2**

LOD-Estimated Limit Of Detection
*Modified
Reviewed by:

Approved Signatory

E, F 08080128

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR,

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.CO

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third*
Company:	Haengel & Assoc. Eng., Inc.	**EMSL-Bill to:**	Haengel & Assoc. Eng.
Street:	42030 Koppernick Rd., Ste. 318	**Street:**	42030 Koppernick Rd., Ste. 3
Box #:		**Box #:**	
City/State:	Canton MI **Zip** 48187	**City/State:**	Canton MI **Zip** 481
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / 408-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count &
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☒ Nuisance Dust (NIOSH 0500 & 0600)
- ☑ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) **TOTAL SAMPLE #**

Relinquished:	Daniel Hootan	**Date:**	04-28-08	**Time:**	
Received:	D. J. Smith	**Date:**	4/28/08	**Time:**	1:18pm
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

E,F

08080128

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

NIOSH 0500 - Dust

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P-1, sample S-1 04-28-08	45'N of NE corner of bldg. Ton = 9:30 Toff = 10:00 FR = 2.0	Vol. air = 60(L
Pump P-3, sample S-3 04-28-08	10'S, 75'W of SE corner of bldg Ton = 9:45 Toff = 10:15 FR = 2.0	Vol. air = 60(L)

Relinquished: Daniel Hostar **Date:** 04-28-08 **Time:**

Received: O. S. Amy **Date:** 4/28/08 **Time:** 1:18pm

Relinquished: **Date:** **Time:**

Received: **Date:** **Time:**

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

HAE

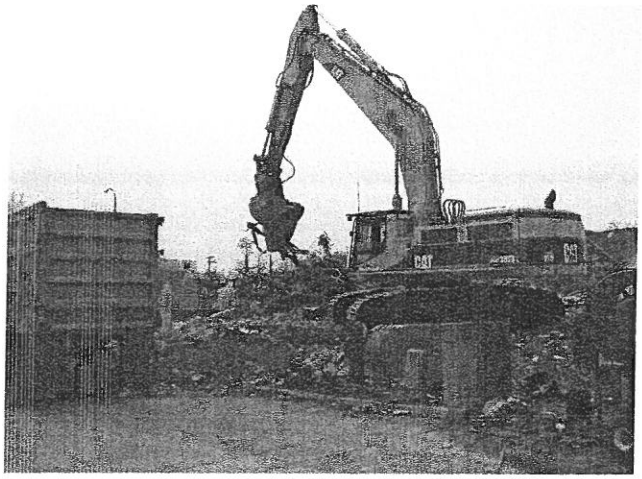
Geotechnical

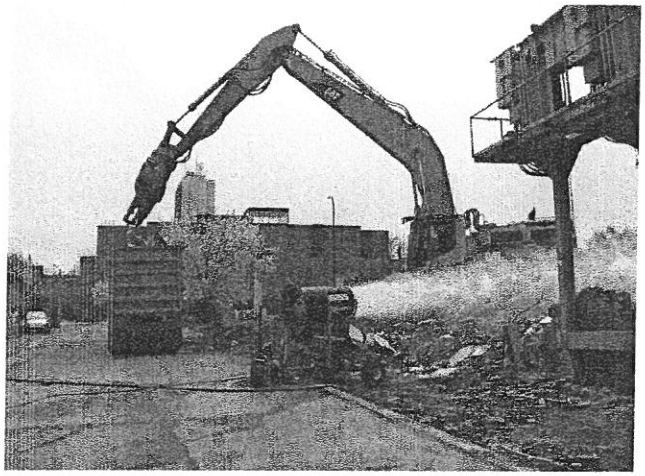
Environmental

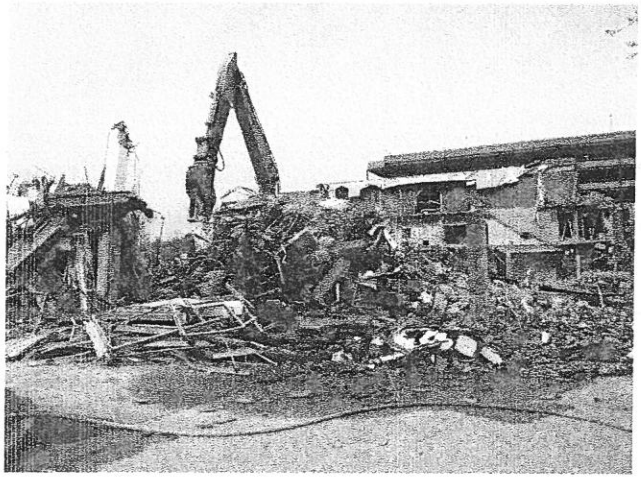
Construction

42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

Project Name: Former YMCA Demolition
Project No.: H08-803-D







04-28-2008

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42030 Koppernick Rd., Suite 318
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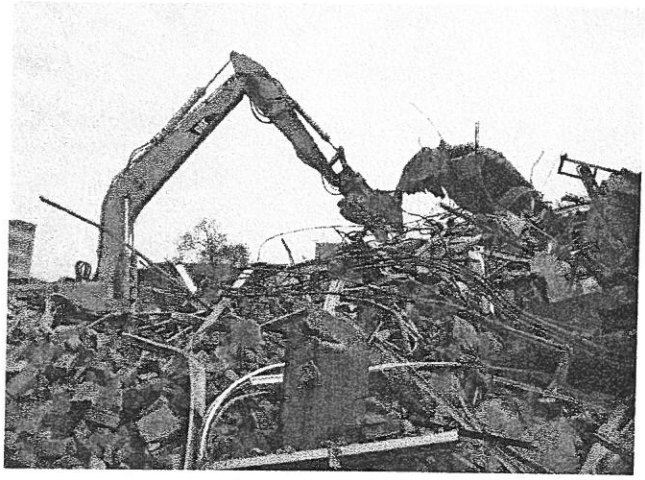
Project Name: Former YMCA Demolition
Project No.: H08-803-D



04-28-2008

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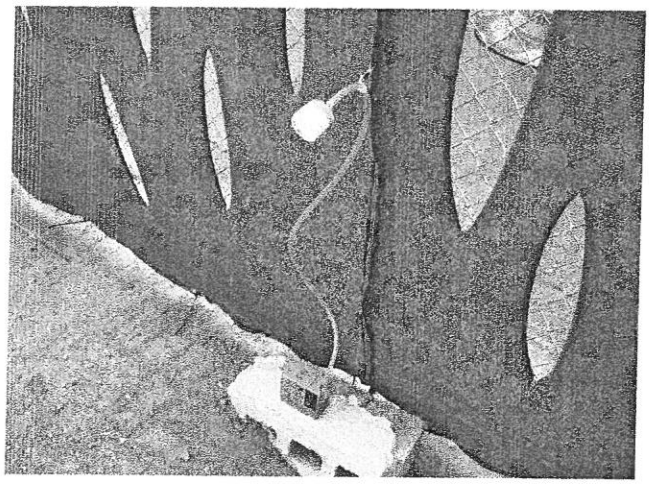
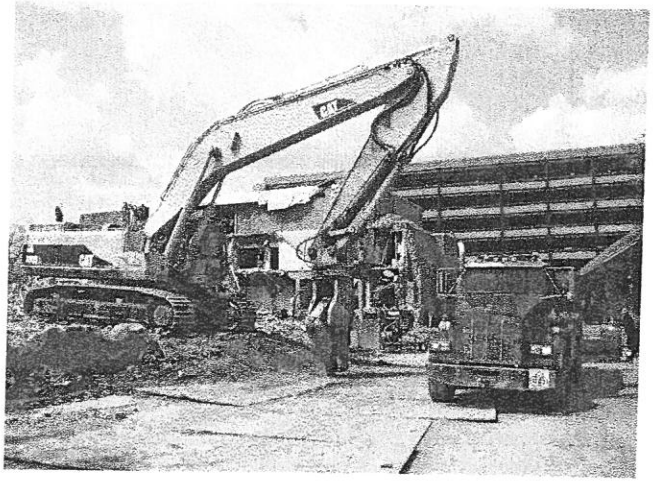
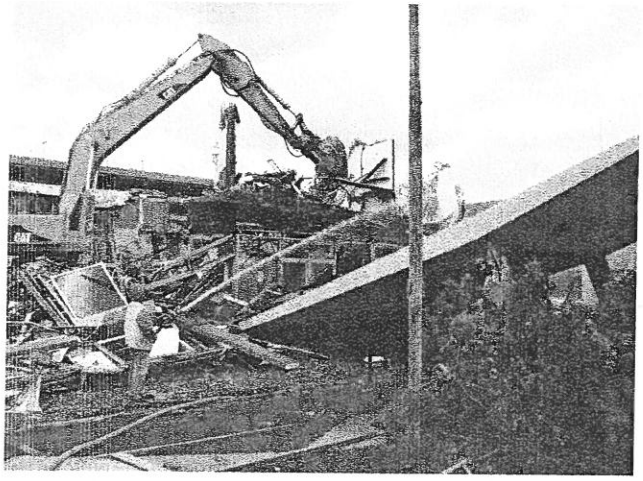
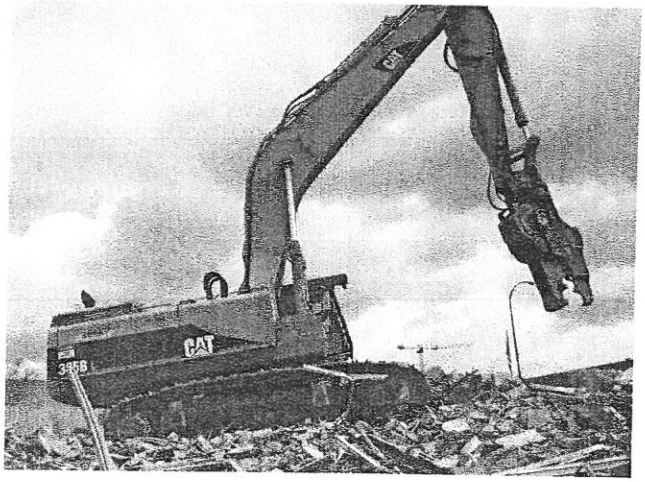
Project Name: Former YMCA Demolition
Project No.: H08-803-D









04-28-2008

EMSL Analytical
2001 East 52nd St., Indianapolis, IN 46205
Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42030 Koppermick Rd. Ste. 318
Canton, MI 48187

Fax: (734) 455-9774 Phone: (734) 455-9771
Project: **Former YMCA Demolition Ann Arbor, MI/ H08-803-D**

Customer ID: HAEI22
Customer PO:
Received: 04/30/08 8:40 AM
EMSL Order: 160805680
EMSL Proj:
Report Date: 4/30/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	*Analyzed*	*Volume*	*RDL*	*Lead Concentration*	*Notes*	
0001	4/30/2008	315 L	13 µg/m³	<13 µg/m³		
Client Sample Pump P-2 Sample S-2 04-29-08					***Collected:***	4/29/2008
0002	4/30/2008	315 L	13 µg/m³	<13 µg/m³		
Client Sample Pump P-4 Sample S-4 04-29-08					***Collected:***	4/29/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced execept in full, without written approval by EMSL. This report relates only to those Items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted

ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 4/30/2008 4:49:07 PM

PB w/RDL

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, MI

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third party*
Company:	Haengel & Assoc. Eng., Inc.	**EMSL-Bill to:**	Haengel & Assoc. Eng., Inc.
Street:	42030 Koppernick Rd., Ste. 318	**Street:**	42030 Koppernick Rd., #318
Box #:		**Box #:**	
City/State:	Canton MI **Zip** 48187	**City/State:**	Canton MI **Zip** 48187
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / H08-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours	☐ 6 Hours	☐ 12 Hours	☒ 24 Hours	☐ 48 Hours	☐ 72 Hours	☐ 4 Days	☐ 5 Days	☐ 6-10 Days

SAMPLE MATRIX

☐ Air	☐ Bulk	☐ Soil	☐ Wipe	☐ Micro-Vac	☐ Drinking Water	☐ Wastewater	☐ Chips	☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

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- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420☐ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐Wipe, SW846-6010☐ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
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- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
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MICROBIAL ANALYSIS

Air Samples
- ☐Mold & Fungi by Air O Cell
- ☐Mold & Fungi by Agar Plate count & id
- ☐Bacterial Count and Gram Stain
- ☐Bacterial Count and Identification

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- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
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- ☐ Mold & Fungi – Culture (Count & ID)
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- ☐ Other:

IAQ ANALYSIS

- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) - **TOTAL SAMPLE #**

Relinquished:	Jaziel Honstein	**Date:**	04-29-08	**Time:**	
Received:		**Date:**	04/29/08	**Time:**	
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

NIOSH 7082 - Lead

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump: P-2 Sample S-2 04-29-08	45'N, 40'W of NE corner of bldg. Ton = 9:20 Toff = 12:20 FR = 1.75	Vol. air = 315 (L)
Pump P-4 Sample S-4 04-29-08	12'S, 40'W of SE corner of bldg. Ton = 9:30 Toff = 12:30 FR = 1.75	Vol. air = 315 (L)

Relinquished: Daniel Horotan Date: 04-29-08 Time:

Received: [signature] Date: 4/29/08 Time:

Relinquished: Date: Time:

Received: Date: Time:

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42020 Koppernick Rd. Ste 318
Canton, MI. 48187

April 30, 2008

Ref Number: 080801306
Samples Received: April 29, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition, Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#1	45'N., 15'W. of NE Corner BLDG.	60	0.02	**<0.2**
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LOD-Estimated Limit Of Detection
* Modified
Reviewed by:

Approved Signatory

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, MI

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third pa*
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Box #:		**Box #:**	
City/State:	Canton MI **Zip** 48187	**City/State:**	Canton MI **Zip** 48187
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / H08-803-D	**Purchase Order #:**	

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- ☐ NIOSH 9002
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- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

RECEIVED
EMSL OF MICHIGAN
DATE: 4/29/08 TIME:
SIGNATURE 3
WALK IN

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
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Graphite Furnace Atomic Absorption
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Td 0500

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- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) _____ - _____ **TOTAL SAMPLE #** _____

Relinquished:	Daniel Hoxtax	**Date:**	04-29-08	**Time:**	
Received:	DS Kraft	**Date:**	4/29/08	**Time:**	
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

NIOSH 0500 - Dust

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P-1 Sample S-1 04-29-08	45'N, 15'W of NE corner of bldg Ton = 9:15 Toff = 9:45 FR = 2.0	Vol. air = 60 (L)
Pump P-3 Sample S-3 04-29-08	15'S, 10'W of SE corner of bldg Ton = 9:25 Toff = 9:55 FR = 2.0	Vol. air = 60 (L)
	RECEIVED EMSL OF MICHIGAN DATE: 4/29/8 TIME: 1PM SIGNATURE BS walk in	

Relinquished: Daniel Hostak Date: 04-29-08 Time:

Received: Date: 4/29/08 Time:

Relinquished: Date: Time:

Received: Date: Time:

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

HAE

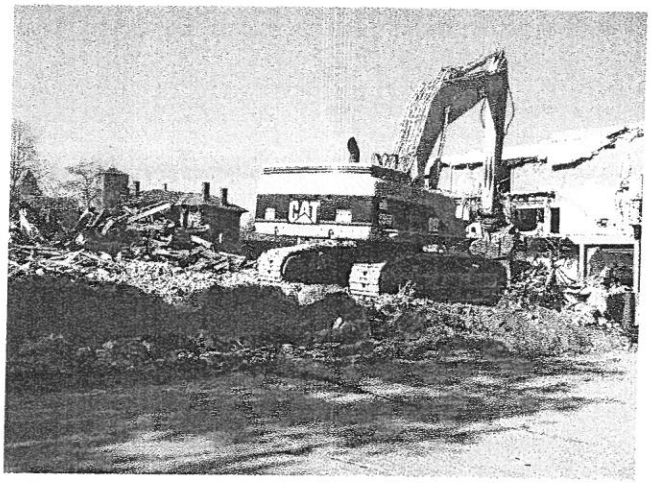
Geotechnical

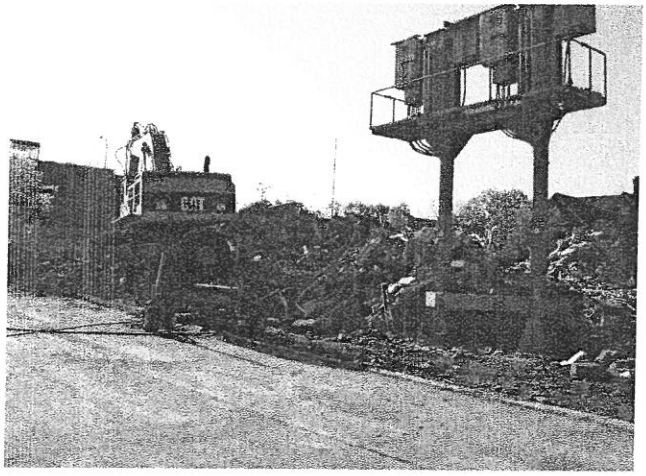
Environmental

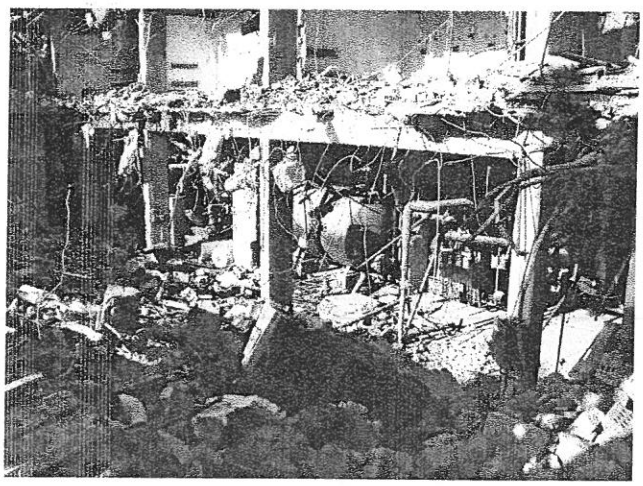
Construction

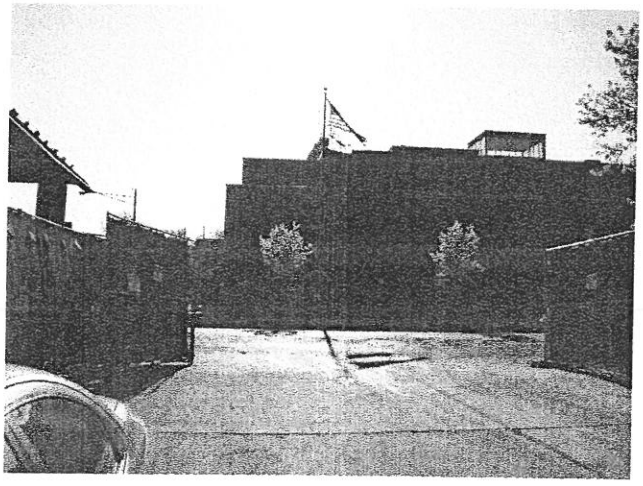
42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

Project Name: Former YMCA Demolition
Project No.: H08-803-D









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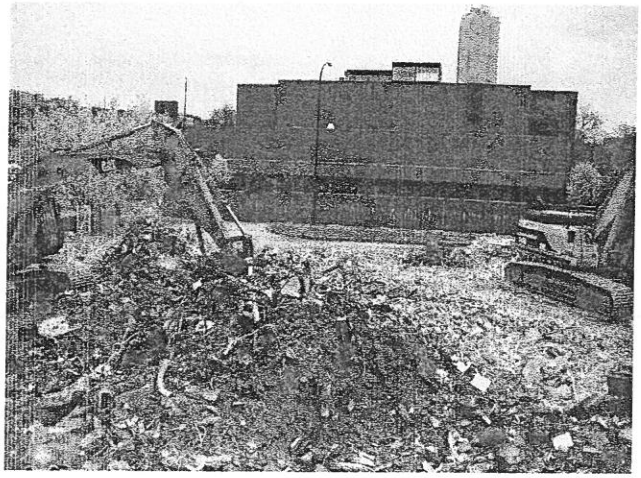

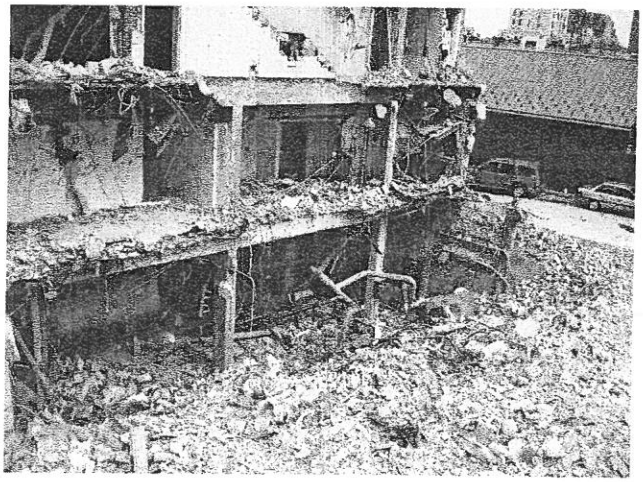

04-29-2008

EMSL Analytical
2001 East 52nd St., Indianapolis, IN 46205
Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42030 Koppermick Rd. Ste. 318
Canton, MI 48187

Fax: (734) 455-9774 Phone: (734) 455-9771
Project: **FORMER YMCA DEMO ANN ARBOR, MI H08-803-D**

Customer ID: HAEI22
Customer PO:
Received: 05/01/08 8:30 AM
EMSL Order: 160805730

EMSL Proj:

Report Date: 5/1/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	Analyzed	Volume	RDL	Lead Concentration	Notes
0001	5/1/2008	315 L	13 µg/m³	<13 µg/m³	
Client Sample PUMP P-2 SAMPLE S-2 4/30/08					*Collected:* 4/30/2008
0002	5/1/2008	315 L	13 µg/m³	<13 µg/m³	
Client Sample PUMP P-3 SAMPLE S-3 4/30/09					*Collected:* 4/30/2008
0003	5/1/2008	315 L	13 µg/m³	<13 µg/m³	
Client Sample PUMP P-6 SAMPLE S-6 4/30/10					*Collected:* 4/30/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced execept in full, without written approval by EMSL. This report relates only to those items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted

ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 5/1/2008 3:38:32 PM

PB w/RDL

160805730

INDIANAPOLIS, IN **CHICAGO, IL** **ANN ARBOR, M**

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third pa*
Company:	Hoengel & Assoc. Eng., Inc.	**EMSL-Bill to:**	Hoengel & Assoc. Eng., In
Street:	42030 Koppernick Rd., Ste 318	**Street:**	42030 Koppernick Rd., Ste. 3
Box #:		**Box #:**	
City/State:	Canton MI **Zip** 48187	**City/State:**	Canton MI **Zip** 4818
Phone Results to:	Gus Hoengel	**Fax Results to:**	Gus Hoengel
Telephone #:	734. 455. 9771	**Fax #:**	734. 455. 9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / 408-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420☐ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ Air, NIOSH 7082 JB
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010☐ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & id
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) - **TOTAL SAMPLE #**

Relinquished:	Daniel Hostar	**Date:**	04-30-08	**Time:**	
Received:	AW	**Date:**	4-30-08	**Time:**	2:25
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**	5/1/08	**Time:**	8:30A

5930

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

NIOSH 7082- Lead

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P-2 sample S-2 04-30-08	45'N, 40'W of NE corner of bldg. Ton = 9:00 Toff = 12:00 FR = 1.75	Vol. air = 315 (
Pump P-3, Sample S-3 04-30-08	45'N, 60'E of NW corner of bldg. Ton = 9:05 Toff = 12:05 FR = 1.75	Vol. air = 315 (L
Pump P-4, Sample S-4 04-30-08	10'S, 50'W of SE corner of bldg. Ton = 9:10 Toff = 12:10 FR = 1.75	Vol. air = 315 (L

Relinquished: Daniel Hootan **Date:** 04-30-08 **Time:**

Received: Columbus **Date:** 5/1/08 **Time:**

Relinquished: **Date:** **Time:**

Received: **Date:** **Time:**

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42020 Koppernick Rd. Ste 318
Canton, MI. 48187

May 1, 2008

Ref Number: 080801322
Samples Received: April 30, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition; Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#1	45'N., 30'W. of NE Corner of BLDG.	90	0.02	**<0.2**

LOD-Estimated Limit Of Detection
* Modified
Reviewed by:

Approved Signatory

0808013 22

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third pa*
Company:	Haengel & Assoc. Eng. Inc.	**EMSL-Bill to:**	Haengel & Assoc. Eng, In
Street:	42030 Koppernick Rd. #318	**Street:**	42030 Koppernick Rd. #31
Box #:		**Box #:**	
City/State:	Canton MI **Zip** 48187	**City/State:**	Canton MI **Zip** 481
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	734.455.9771	**Fax #:**	734.455.9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / H08-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours	☐ 6 Hours	☐ 12 Hours	☒ 24 Hours	☐ 48 Hours	☐ 72 Hours	☐ 4 Days	☐ 5 Days	☐ 6-10 Days

SAMPLE MATRIX

☐ Air	☐ Bulk	☐ Soil	☐ Wipe	☐ Micro-Vac	☐ Drinking Water	☐ Wastewater	☐ Chips	☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
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- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

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Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
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MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & i
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

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- ☐ Escherichia Coli, Fecal Streptococcus
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- ☐ Giardia and Cryptosporidium

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- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

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- ☒ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S)

TOTAL SAMPLE #

Relinquished:	Daniel Hoorfar	**Date:**	04-30-08	**Time:**	
Received:	RW	**Date:**	4-30-08	**Time:**	2:28
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

EMSL

080801322

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

NIOSH 0500 - DUST

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P-1, Sample S-1 04-30-08	45'N, 30'W of NE corner of bldg. Ton = 9:15 Toff = 10:00 FR=2.0	Vol. air = 90(L)

Relinquished: Daniel Horotan **Date:** 04-30-08 **Time:**
Received: **Date:** **Time:**
Relinquished: **Date:** **Time:**
Received: **Date:** **Time:**

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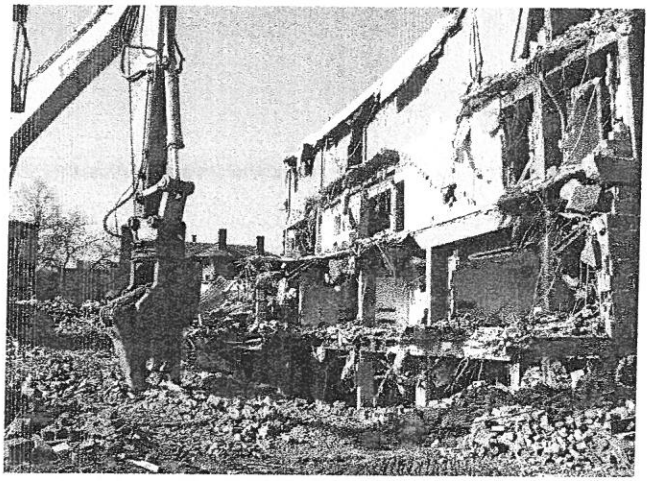

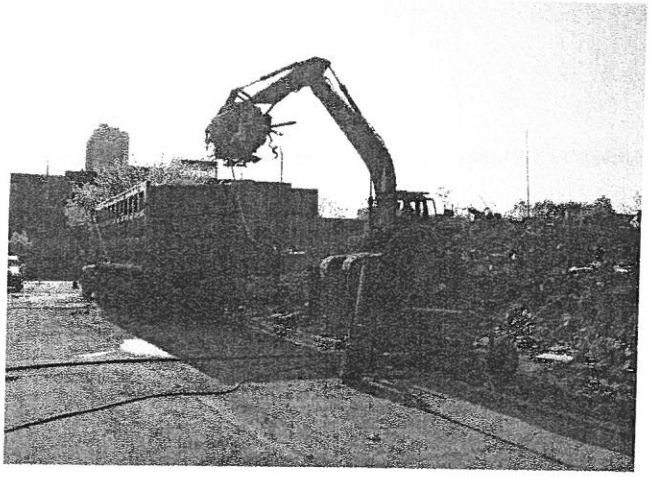

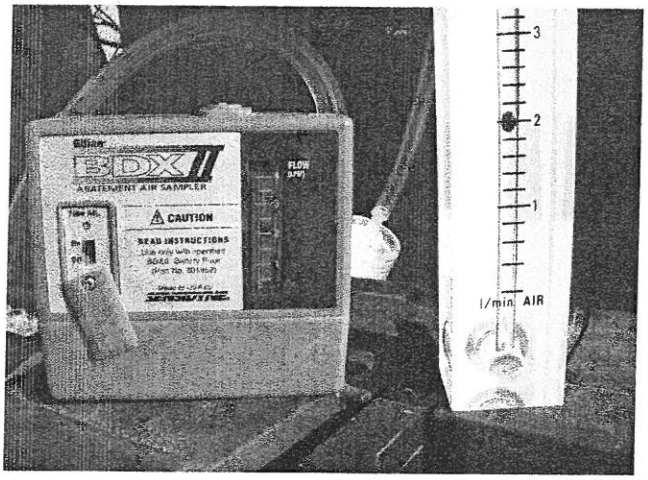

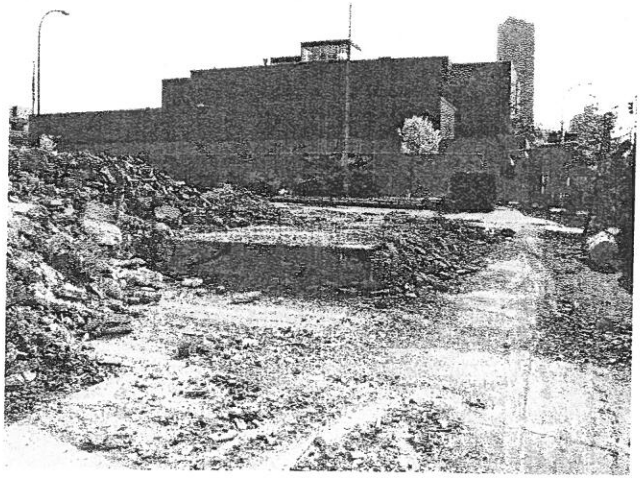

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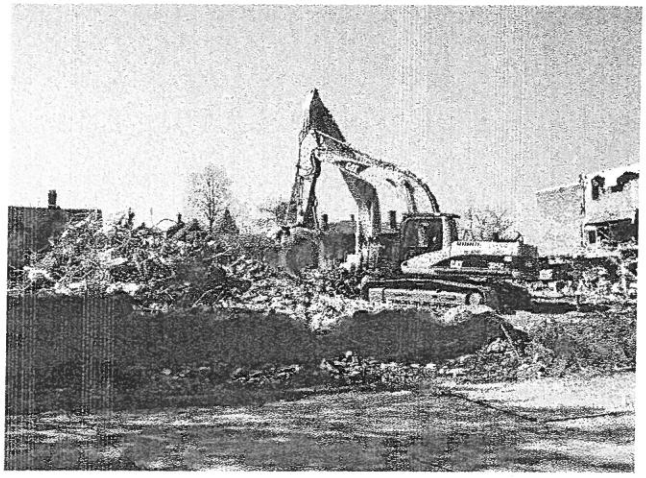

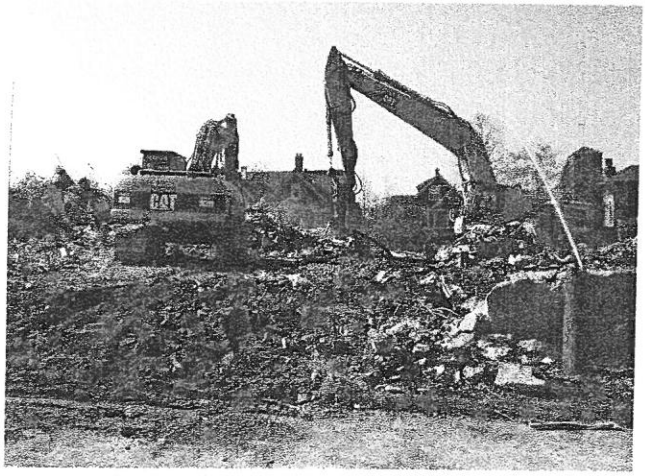

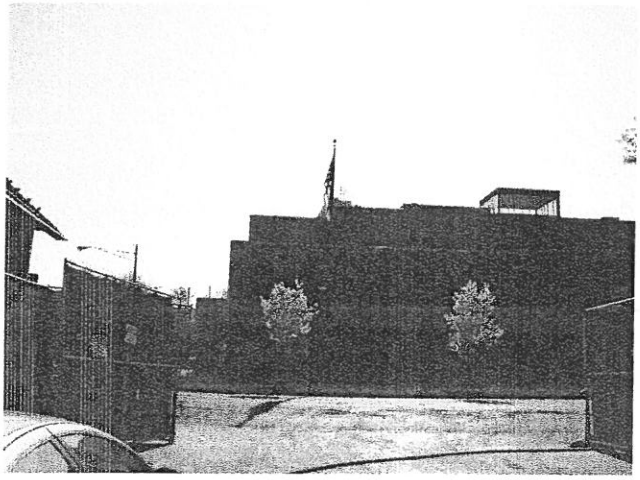

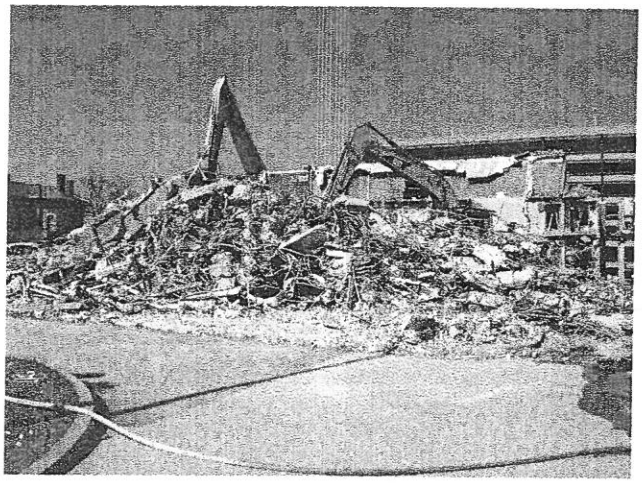

04-30-2008

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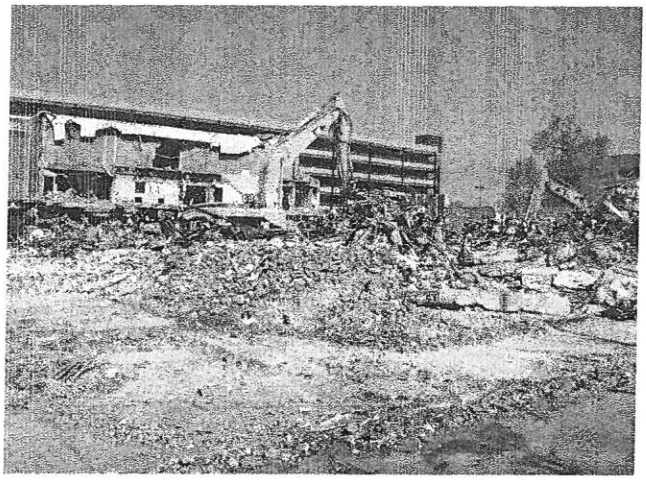

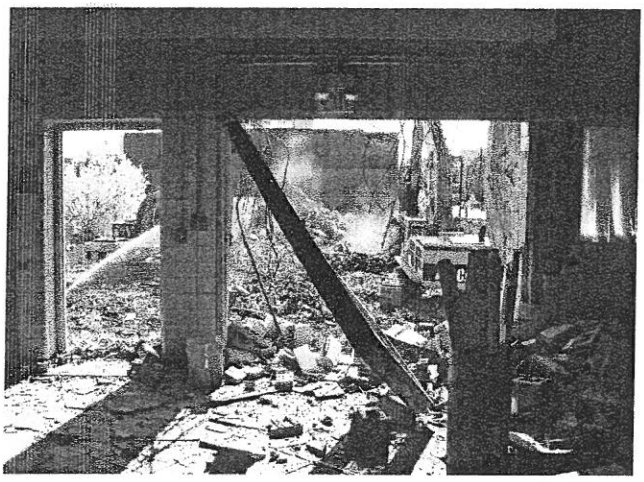

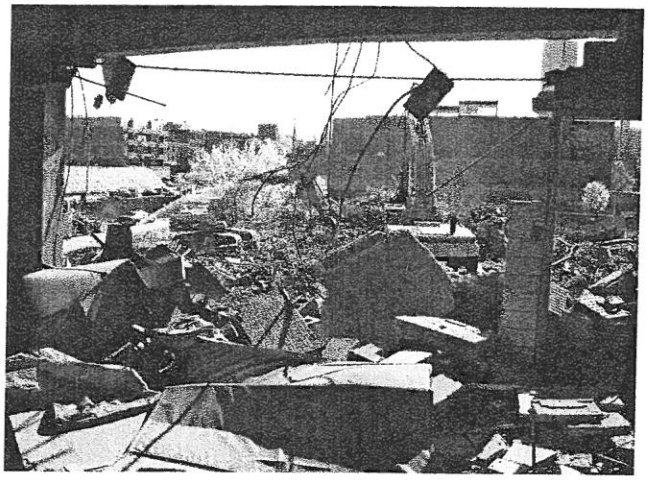

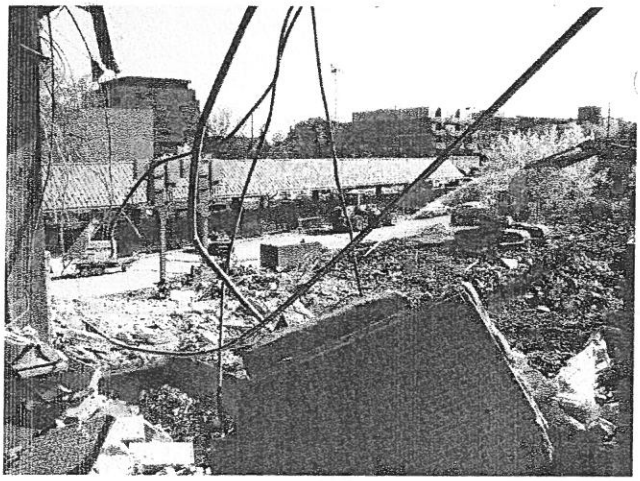

04-30-2008

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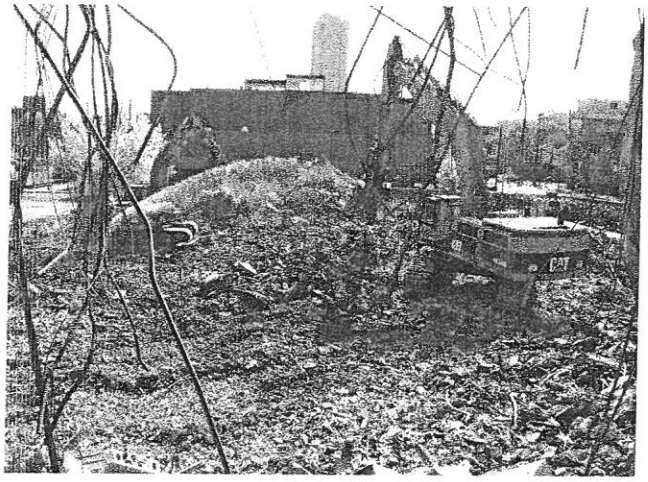

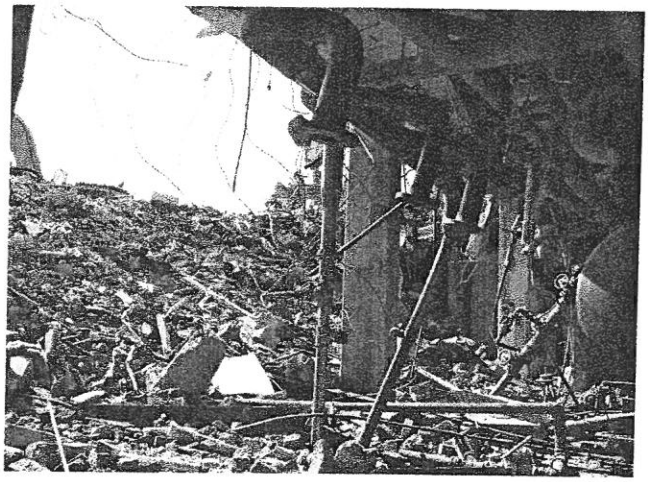

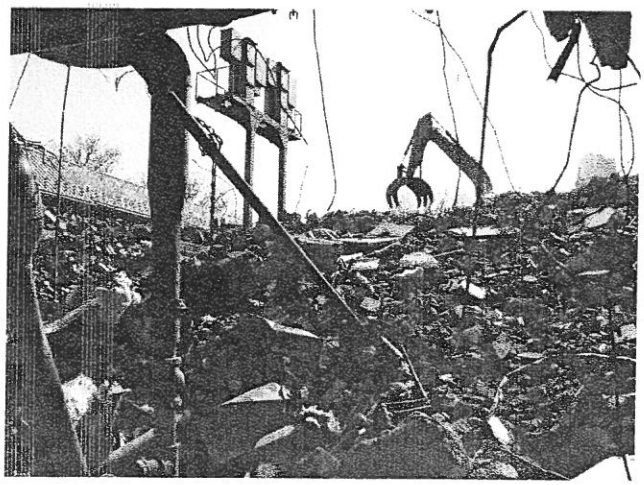

04-30-2008

EMSL Analytical
2001 East 52nd St., Indianapolis, IN 46205
Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42030 Koppermick Rd. Ste. 318
Canton, MI 48187

Fax: (734) 455-9774 Phone: (734) 455-9771
Project: **Former YMCA Demolition Ann Arbor, MI/#08-803-D**

Customer ID: HAEI22
Customer PO:
Received: 05/06/08 8:25 AM
EMSL Order: 160805940

EMSL Proj:

Report Date: 5/6/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	Analyzed	Volume	RDL	Lead Concentration	Notes
)001	5/6/2008	1080 L	3.7 µg/m³	<3.7 µg/m³	
Client Sample Pump P-1, Sample S-1 05-04-08					*Collected:* 5/4/2008
)002	5/6/2008	1080 L	3.7 µg/m³	<3.7 µg/m³	
Client Sample Pump P-2, Sample S-2 05-04-08					*Collected:* 5/4/2008
)003	5/6/2008	945 L	4.2 µg/m³	<4.2 µg/m³	
Client Sample Pump P-3, Sample S-3 05-04-08					*Collected:* 5/4/2008
)004	5/6/2008	945 L	4.2 µg/m³	<4.2 µg/m³	
Client Sample Pump P-4, Sample S-4 05-04-08					*Collected:* 5/4/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced execept in full, without written approval by EMSL. This report relates only to those items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted
ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 5/6/2008 1:41:26 PM

PB w/RDL

160805940

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR,

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.CO

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from thi*
Company:	Haengel & Assoc. Eng. Inc	**EMSL-Bill to:**	Haengel & Assoc Eng Inc
Street:	42030 Koppernick Rd #318	**Street:**	42030 Koppernick Rd #31
Box #:		**Box #:**	
City/State:	Canton MI **Zip** 48187	**City/State:**	Canton MI **Zip** 48
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	734 455 9771	**Fax #:**	734 455 9774
Project Name/Number:	Former YMCA Demolition Ann Arbor MI / #08 803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count &
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Grain Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S)

TOTAL SAMPLE #

Relinquished:		**Date:** 05-04-08	**Time:**
Received:		**Date:** 5-5-08	**Time:** 2:10
Relinquished:		**Date:**	**Time:**
Received:		**Date:** 5-6-08	**Time:** 8:25

5940

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR,

NIOSH 7082 - Lead

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P-1, sample S-1 05-04-08	15'S, 50'E of SW corner of bldg. Ton = 8:25 Toff = 17:25 FR = 2.0	Vol. air = 1080
Pump P-2, sample S-2 05-04-08	15'S, 10'W of SW corner of bldg. Ton = 8:30 Toff = 17:30 FR = 2.0	Vol. air = 1080
Pump P-3, sample S-3 05-04-08	25'W, 50'S of NW corner of bldg. Ton = 8:35 Toff = 17:35 FR = 1.75	Vol. air = 945
Pump P-4, sample S-4 05-04-08	25'N, 50'E of NW corner of bldg. Ton = 8:40 Toff = 17:40 FR = 1.75	Vol. air = 945

Relinquished: [signature] Date: 05-04-08 Time:

Received: [signature] Date: 5-6-08 Time: 825

Relinquished: Date: Time:

Received: Date: Time:

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42020 Koppernick Rd. Ste 318
Canton, MI. 48187

May 6, 2008

Ref Number: 080801355
Samples Received: May 5, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition, Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#5	25' W., 10' S. of NW Corner of BLDG.	60	0.02	**<0.2**

LOD-Estimated Limit Of Detection
* Modified
Reviewed by: Kellyann R Saiya-Cook
Approved Signatory

08080 ~~3155~~ 1355

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third*
Company:	Haengel & Assoc. Eng., Inc	**EMSL-Bill to:**	Haengel & Assoc. Eng., In
Street:	42030 Koppernick Rd., Ste. 318	**Street:**	42030 Koppernick Rd., # 3
Box #:		**Box #:**	
City/State:	Canton MI **Zip** 48187	**City/State:**	Canton MI **Zip** 48
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / 408-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
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- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
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- ☐ Mold & Fungi by Agar Plate count &
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

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- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
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- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☒ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) _____ **TOTAL SAMPLE #** _____

Relinquished:	[signature]	**Date:**	05-04-08	**Time:**	
Received:		**Date:**	5-5-08	**Time:**	2:10
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

080801353

INDIANAPOLIS, IN **CHICAGO, IL** **ANN ARBOR, M**

NIOSH 0500 - Dust

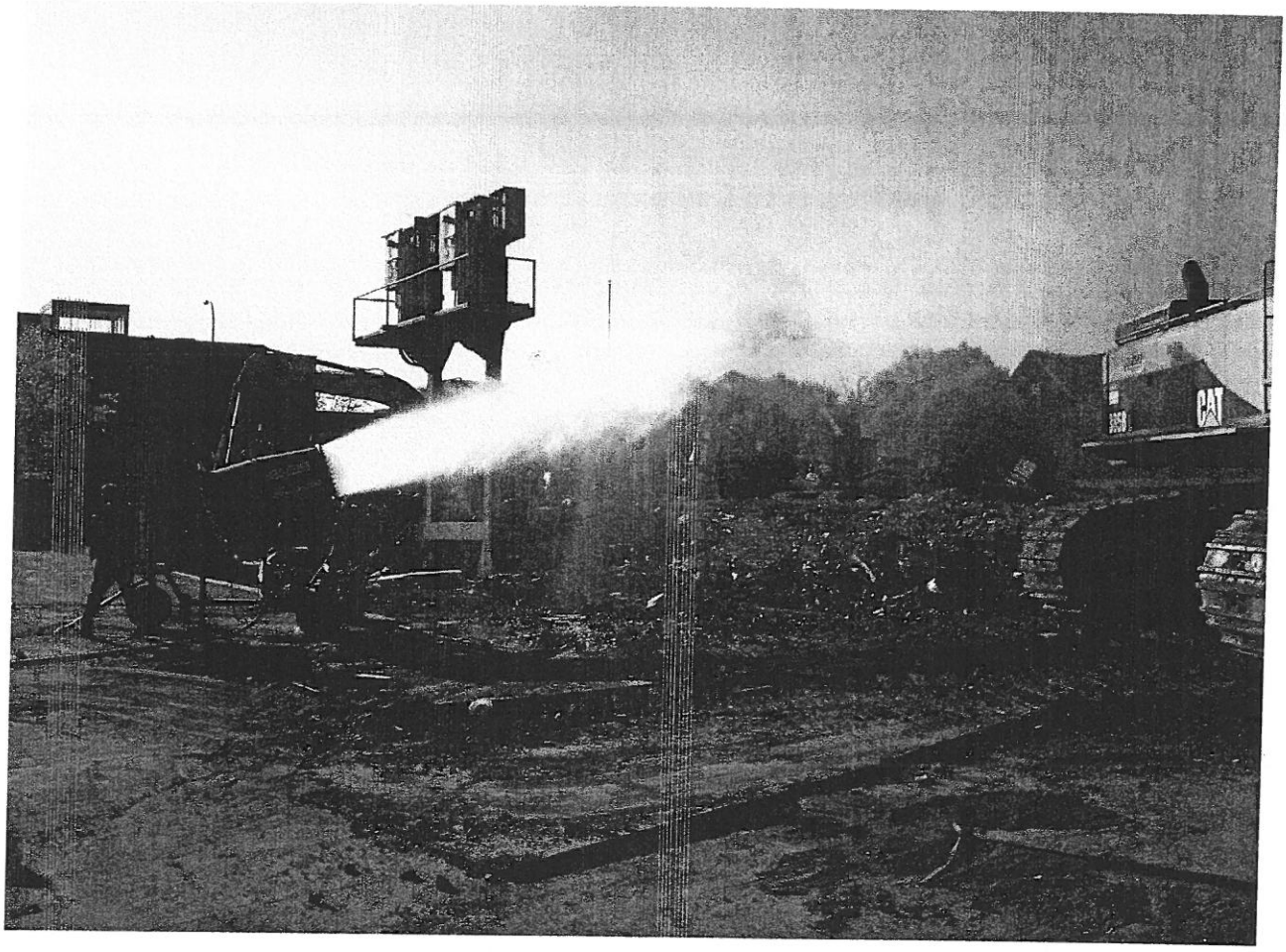
SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P-5 sample S-5 05-04-08	25'W, 10'S of NW corner of bldg. Ton = 8:45 Toff = 9:15 FR=2.0	Vol. air = 60 L

Relinquished:	[signature]	Date:	05-04-08	Time:	
Received:		Date:		Time:	
Relinquished:		Date:		Time:	
Received:		Date:		Time:	

HAE
Geotechnical
Environmental
Construction
42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

Project Name: **Former YMCA Demolition**

Project No.: **H08-803-D**



05-04-2008

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Project Name: Former YMCA Demolition
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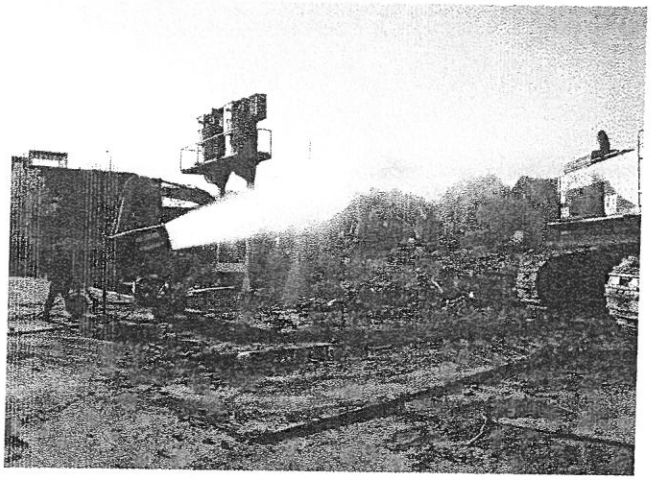

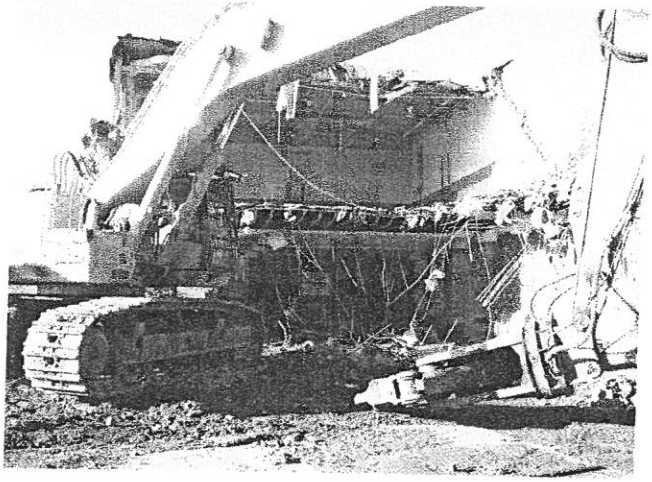

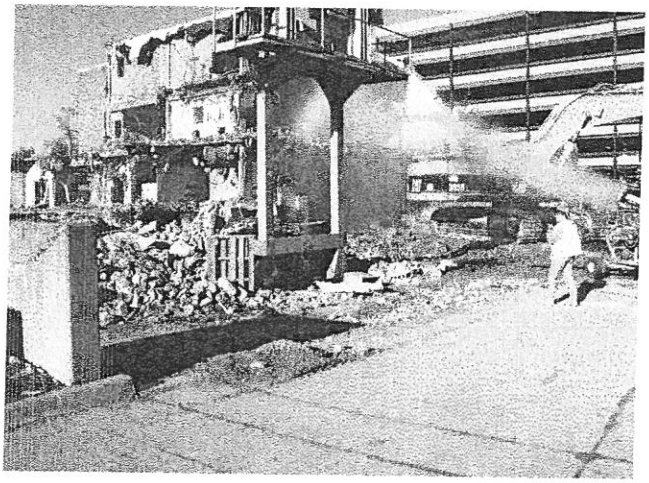

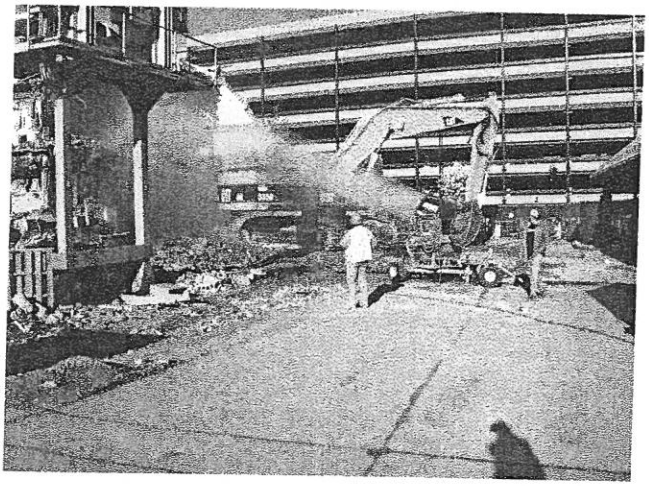

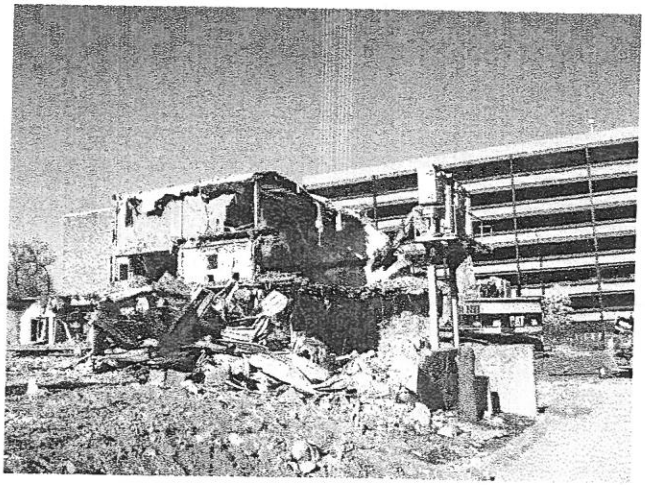

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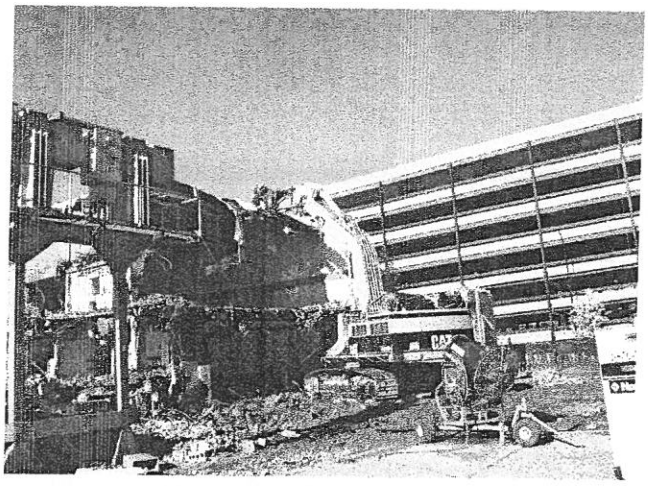

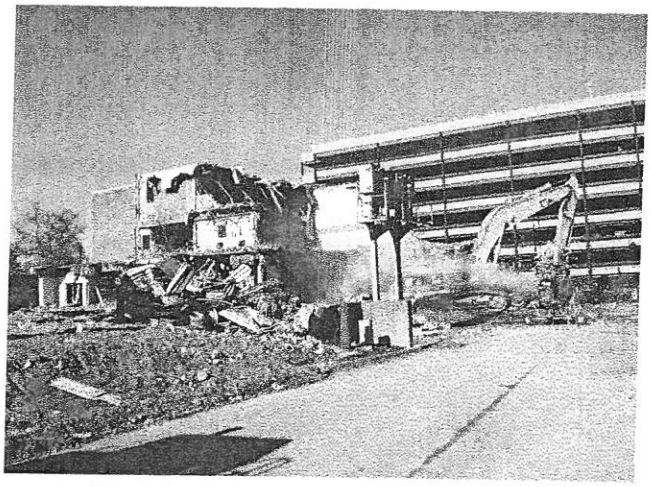

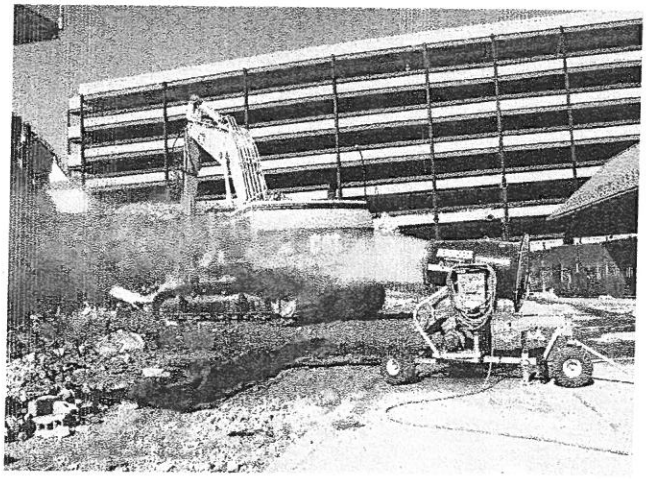

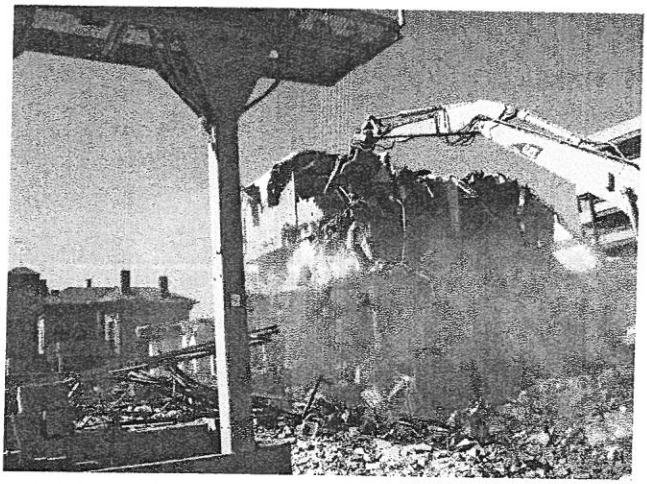

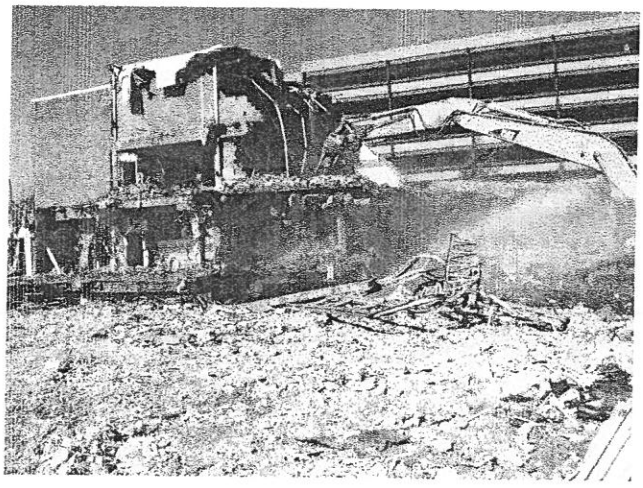

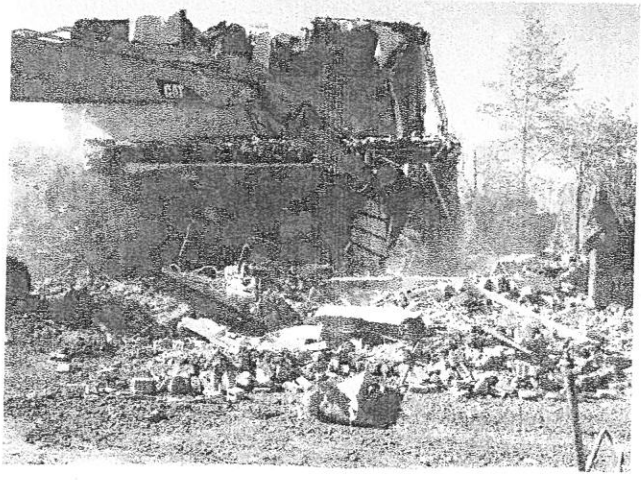

05-04-2008

HAE

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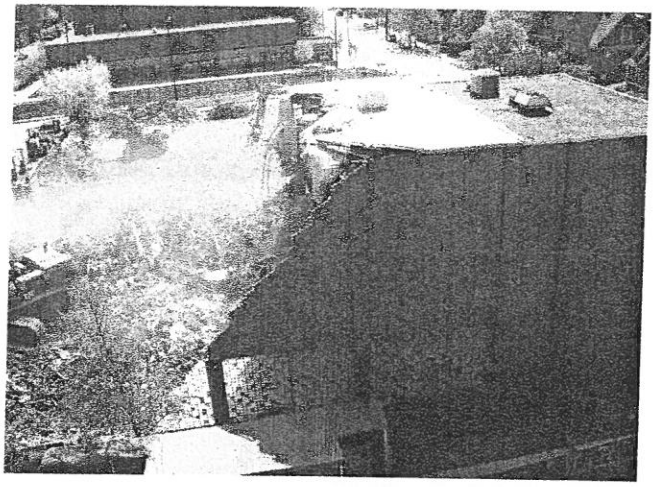

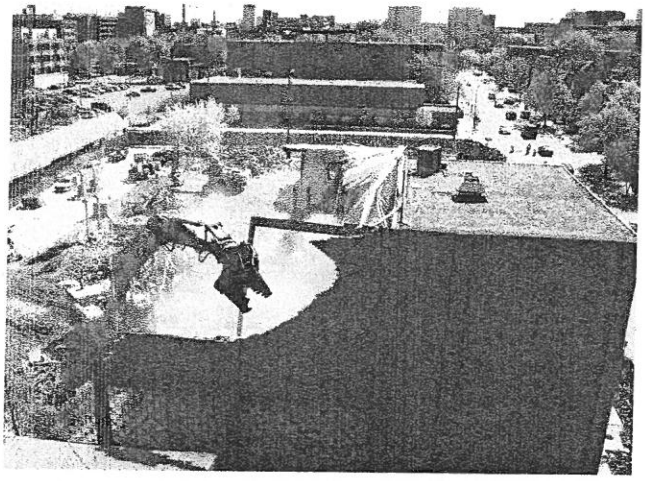

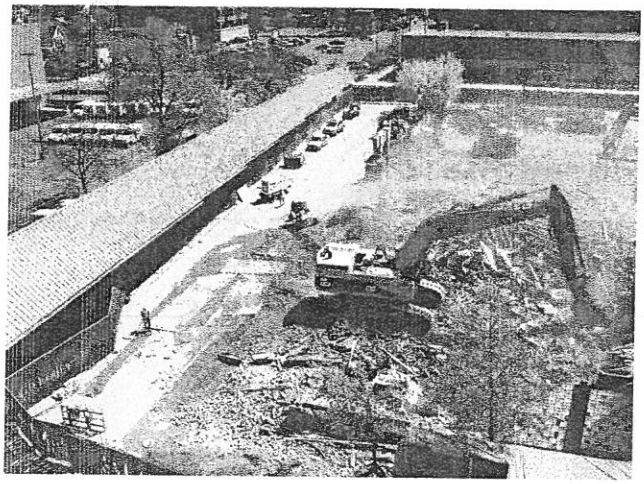

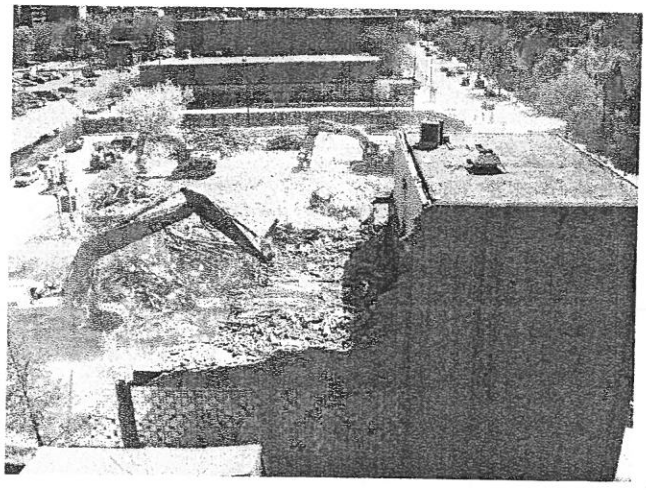

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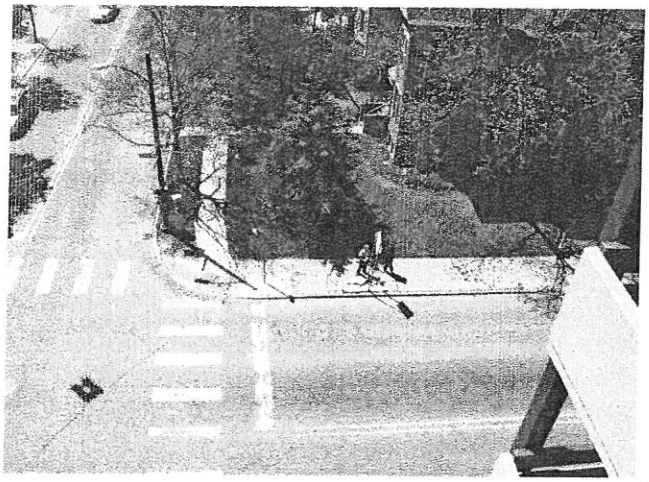

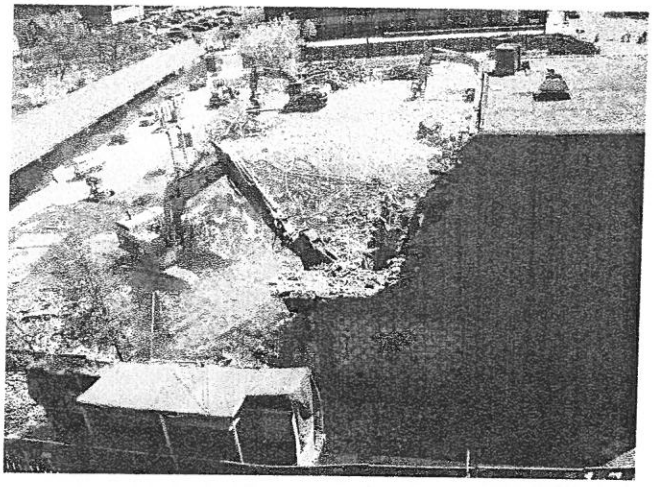

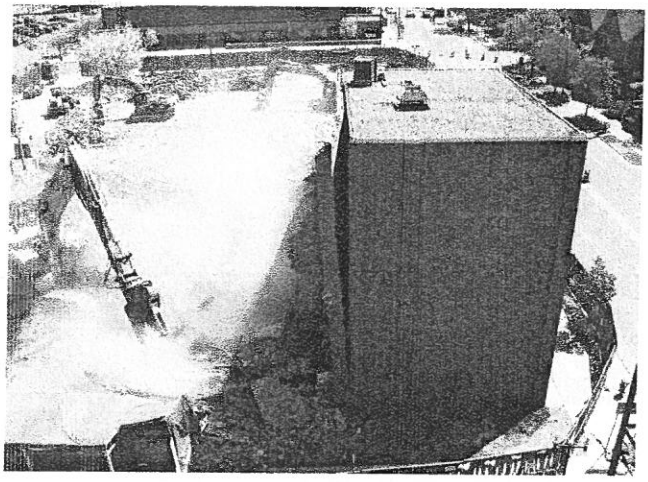

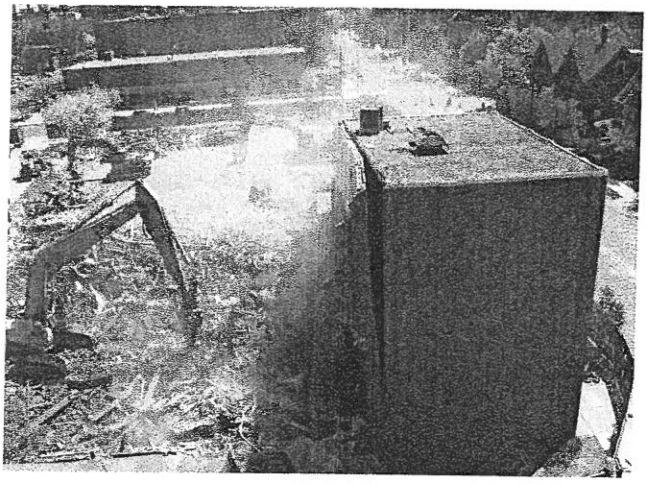

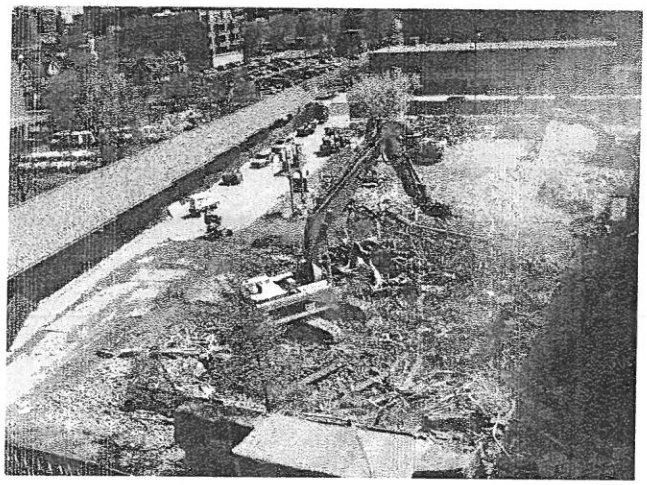

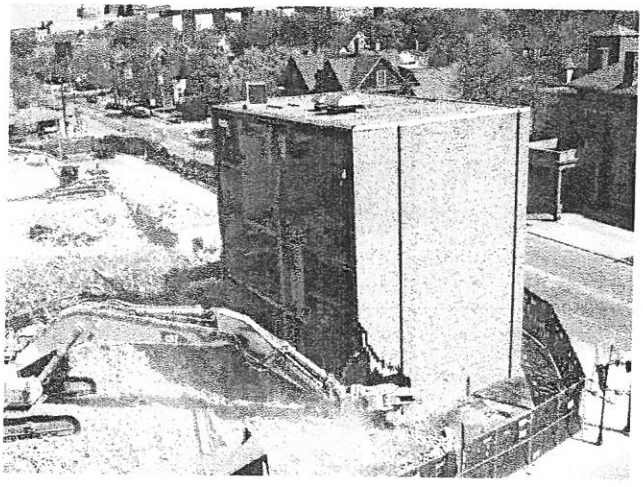

05-04-2008

EMSL Analytical
2001 East 52nd St., Indianapolis, IN 46205
Phone: (317) 803-2997 Fax: (317) 803-3047 Email: indianapolislab@emsl.com

Attn: **Gus Haengel**
Haengel & Associates Engineering, Inc.
42030 Koppermick Rd. Ste. 318
Canton, MI 48187

Fax: (734) 455-9774 Phone: (734) 455-9771
Project: **Former YMCA Demolition #08-803-D**

Customer ID: HAEI22
Customer PO:
Received: 05/06/08 8:25 AM
EMSL Order: 160805948

EMSL Proj:

Report Date: 5/6/2008

Lead in Air by Flame AAS (NIOSH 7082)

Lab ID:	*Analyzed*	*Volume*	*RDL*	*Lead Concentration*	*Notes*	
001	5/6/2008	360 L	11 µg/m³	<11 µg/m³		
Client Sample Pump P-1 Sample S-1 05-05-08					*Collected:*	5/5/2008
002	5/6/2008	360 L	11 µg/m³	<11 µg/m³		
Client Sample Pump P-2 Sample S-2 05-05-08					*Collected:*	5/5/2008

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 4 µg/filter. OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA, unless specifically indicated otherwise in the comment section. Unless otherwise noted, results in this report are not blank corrected. The Laboratory is not responsible for data reported in µg/m³ which is dependent on volume collected by non-laboratory personnel. This report may not be reproduced execept in full, without written approval by EMSL. This report relates only to those items tested. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted
ACCREDITATIONS: AIHA ELLAP 157245

Date Printed: 5/6/2008 1:39:29 PM

PB w/RDL

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, M

1608015948

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third pa*
Company:	Haengel & Assoc. Engineering, Inc.	**EMSL-Bill to:**	Haengel & Assoc. Eng., Inc.
Street:	42030 Koppernick Rd, Ste. 318	**Street:**	42030 Koppernick Rd., Ste 3
Box #:		**Box #:**	
City/State:	Canton, MI **Zip** 48187	**City/State:**	Canton, MI **Zip** 4818
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / #08-803-D	**Purchase Order #:**	

TURNAROUND TIME

☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

SAMPLE MATRIX

☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

ASBESTOS ANALYSIS

PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
- ☐ EPA Level II

PLM - Bulk
- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
- ☐ EPA Point Count (400 Points)
- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
- ☐ Superfund EPA 540-R097-028 (dust generation)

TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

LEAD ANALYSIS

Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☒ Air, NIOSH 7082 VS
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS

- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
- ☐ Other:

MICROBIAL ANALYSIS

Air Samples
- ☐ Mold & Fungi by Air O Cell
- ☐ Mold & Fungi by Agar Plate count & id
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

Water Samples
- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

Wipe and Bulk Samples
- ☐ Mold & Fungi – Direct Examination
- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
- ☐ Bacterial Count & Gram Stain
- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS

- ☐ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) _____ _____ **TOTAL SAMPLE #** _____

Relinquished:	David Hontas	**Date:**	05-05-08	**Time:**	
Received:		**Date:**	5-5-08	**Time:**	
Relinquished:		**Date:**	5-6-08	**Time:**	2:10 PM
Received:		**Date:**		**Time:**	

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR

1680594

NIOSH 7082 - Lead

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P-1, Sample S-1 05-05-08	40'N, 25'E of NW corner of bldg. Ton = 10:00 Toff = 13:00 FR = 2.0	Vol. air = 360
Pump P-2, Sample S-2 05-05-08	15'S, 50'E of SW corner of bldg. Ton = 10:05 Toff = 13:05 FR = 2.0	Vol. air = 360

Relinquished: Daniel Hoostar Date: 05-05-08 Time:

Received: Date: 1605 Time:

Relinquished: Date: Time:

Received: Date: Time:

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

EMSL Analytical, Inc.

212 South Wagner Road
Ann Arbor, MI 48103
Phone:(734) 668-6810 Fax:(734) 668-8532

Attn: Gus Haengel
Haengel & Associates Engineering, Inc.
42020 Koppernick Rd. Ste 318
Canton, MI. 48187

May 6, 2008

Ref Number: 080801354
Samples Received: May 5, 2008

GRAVIMETRIC ANALYSIS OF TOTAL NUISANCE DUST METHOD NIOSH 0500*

Project: Former YMCA Demolition, Ann Arbor, MI. H08-803-D

Sample ID	Location	Volume (liters)	LOD (mg/sample)	Results (mg/m^3)
S#1	25' W., 30' N. of SW Corner of BLDG.	60	0.02	**<0.2**

LOD-Estimated Limit Of Detection
* Modified
Reviewed by: Kellyann R Sayre-Cook

Approved Signatory

0808013547

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR, MI

EMSL ANALYTICAL, Inc. CHAIN OF CUSTODY WWW.EMSL.COM

EMSL Rep:	Paul Nyfield	*Third Party Billing*	*requires written authorization from third pa*
Company:	Haengel & Assoc. Engineering, Inc	**EMSL-Bill to:**	Haengel & Assoc. Engineering,
Street:	42030 Koppernick Rd., Ste. 318	**Street:**	42030 Koppernick Rd., Ste. 31
Box #:		**Box #:**	
City/State:	Canton, MI **Zip** 48187	**City/State:**	Canton, MI **Zip** 4818
Phone Results to:	Gus Haengel	**Fax Results to:**	Gus Haengel
Telephone #:	(734) 455-9771	**Fax #:**	(734) 455-9774
Project Name/Number:	Former YMCA Demolition Ann Arbor, MI / H08-803-D	**Purchase Order #:**	

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☐ 3 Hours ☐ 6 Hours ☐ 12 Hours ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ 4 Days ☐ 5 Days ☐ 6-10 Days

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☐ Air ☐ Bulk ☐ Soil ☐ Wipe ☐ Micro-Vac ☐ Drinking Water ☐ Wastewater ☐ Chips ☐ Other

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PCM - Air
- ☐ NIOSH 7400 (A) Issue 2: August 1994
- ☐ OSHA w/TWA

TEM AIR
- ☐ AHERA 40 CFR, Part 763 Subpart E
- ☐ NIOSH 7402 Issue 2
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- ☐ EPA 600/R-93/116
- ☐ NY Stratified Point Count
- ☐ California Air Resource Board (CARB) 435
- ☐ NIOSH 9002
- ☐ PLM NOB (Gravimetric) NYS 198.1
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- ☐ EPA Point Count (1,000 Points)
- ☐ Standard Addition Point Count

SOILS
- ☐ EPA Protocol Qualitative
- ☐ EPA Protocol Quantitative
- ☐ EMSL MSD 9000 Method fibers/gram
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TEM BULK
- ☐ Drop Mount (Qualitative)
- ☐ Chatfield SOP-1988-02
- ☐ TEM NOB (Gravimetric) NY 198.4

TEM MICROVAC
- ☐ ASTM D 5755-95 (Quantitative)

TEM WIPE
- ☐ ASTM D-6480-99
- ☐ Qualitative ☐

TEM WATER
- ☐ EPA 100.1
- ☐ EPA 100.2
- ☐ NYS 198.2

OTHER:

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Flame Atomic Absorption
- ☐ Wipe, SW846-7420 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-7420
- ☐ Air, NIOSH 7082
- ☐ Chips, SW846-7420 or AOAC 5.009 (974.02)
- ☐ Wastewater, SW 846-7420
- ☐ TCLP LEAD SW846-1311/7420

Graphite Furnace Atomic Absorption
- ☐ Air, NIOSH 7105
- ☐ Wastewater, SW846-7421
- ☐ Soil, SW846-7421
- ☐ Drinking Water, EPA 239.2

ICP – Inductively Coupled Plasma
- ☐ Wipe, SW846-6010 ☐ ASTM ☐ non ASTM
- ☐ Soil, SW846-6010
- ☐ Air, NIOSH 7300

MATERIALS ANALYSIS
- ☐ Full Particle Identification
- ☐ Optical Particle Identification
- ☐ Dust Mites and Insect Fragments
- ☐ Particle Size & Distribution
- ☐ Product Comparison
- ☐ Paint Characterizaton
- ☐ Failure Analysis
- ☐ Corrosion Analysis
- ☐ Glove Box Containment Study
- ☐ Petrographic Examination of Concrete
- ☐ Portland Cement in Workplace Atmospheres (OSHA ID-143)
- ☐ Man Made Vitrous Fibers – MMVF's
- ☐ Synthetic Fiber Identification
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MICROBIAL ANALYSIS

Air Samples
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- ☐ Mold & Fungi by Agar Plate count & id
- ☐ Bacterial Count and Gram Stain
- ☐ Bacterial Count and Identification

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- ☐ Total Coliforms, Fecal Coliforms
- ☐ Escherichia Coli, Fecal Streptococcus
- ☐ Legionella
- ☐ Salmonella
- ☐ Giardia and Cryptosporidium

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- ☐ Mold & Fungi – (Culture follow up to direct examination if necessary)
- ☐ Mold & Fungi – Culture (Count & ID)
- ☐ Mold & Fungi – Culture (Count only)
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- ☐ Bacterial Count & Identification (3 most prominent types)
- ☐ Other:

IAQ ANALYSIS
- ☒ Nuisance Dust (NIOSH 0500 & 0600)
- ☐ Airborne Dust (PM10, TSP)
- ☐ Silica Analysis by XRD ☐ Niosh 7500
- ☐ HVAC Efficiency
- ☐ Carbon Black
- ☐ Airborne Oil Mist
- ☐ Other:

Client Sample # (S) _____ - _____ **TOTAL SAMPLE #** _____

Relinquished:	Daniel Haengel DW	**Date:**	05-05-08	**Time:**	
Received:		**Date:**	5-5-08	**Time:**	2:10
Relinquished:		**Date:**		**Time:**	
Received:		**Date:**		**Time:**	

0808013547

EMSL

INDIANAPOLIS, IN CHICAGO, IL ANN ARBOR

NIOSH 0500 - Dust

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME Air (L) Area (Inches sq.)
Pump P-3 sample S-3 05-05-2008	25'W, 30'N of SW corner of bldg. Ton = 10:10 Toff = 10:40 FR=2.0	Vol air = 60

Relinquished: Daniel Hootan Date: 05-05-08 Time:

Received: Date: Time:

Relinquished: Date: Time:

Received: Date: Time:

EMSL Analytical, Inc. 107 Haddon Ave. Westmont NJ 08108 800-220-3675 Regional Account Executive Paul Nyfield Ext. 1254 www.emsl.com

HAE

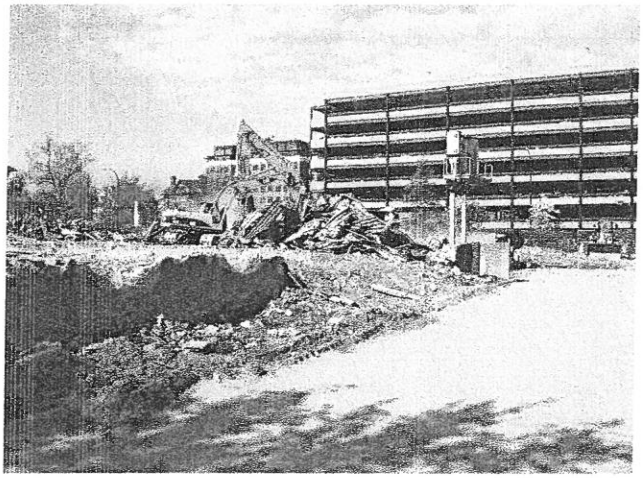
Geotechnical

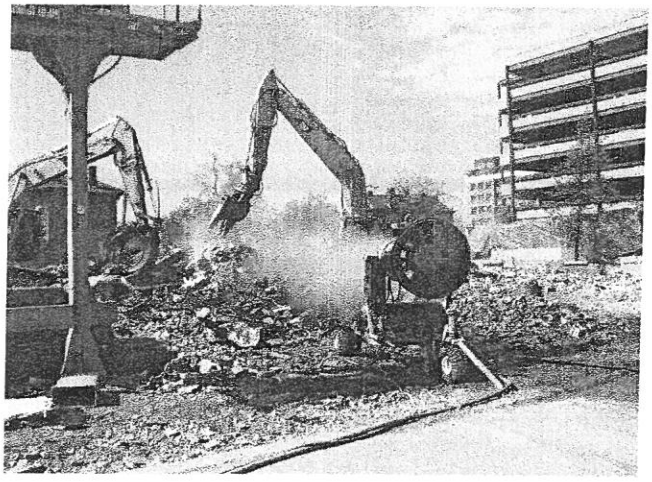
Environmental

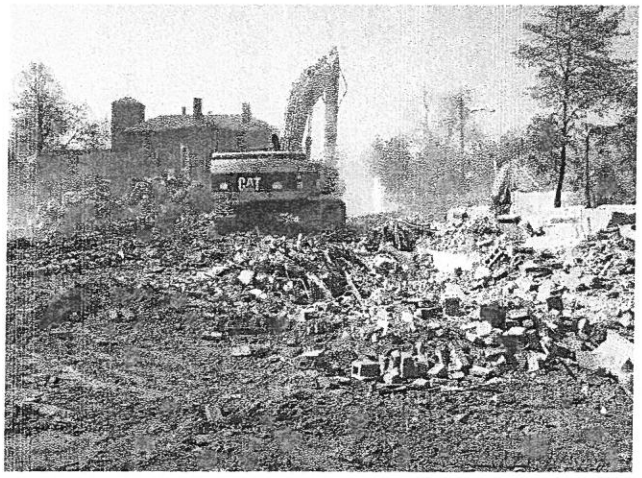
Construction

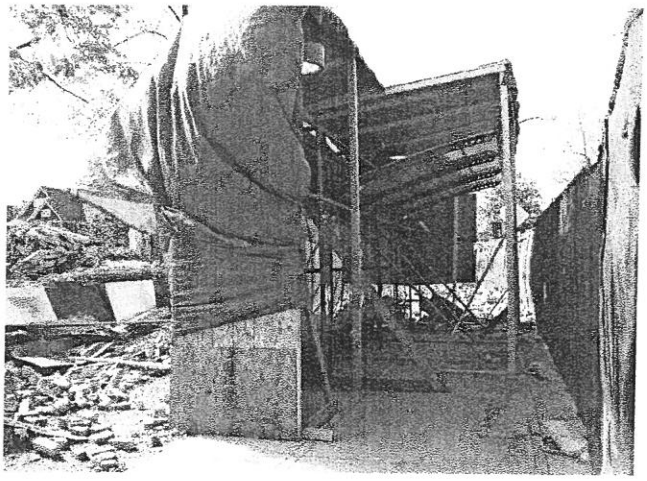
42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
Fax: 734-455-9774
Email: haei@earthlink.net

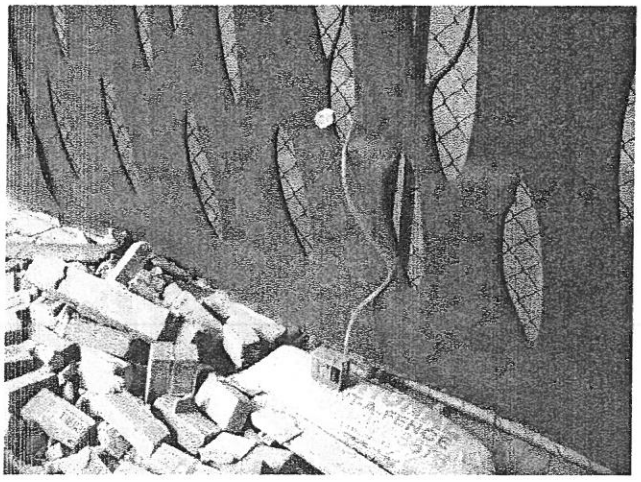
Project Name: Former YMCA Demolition
Project No.: H08-803-D











05-05-2008

HAE

Geotechnical

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Construction

42030 Koppernick Rd., Suite 318
Canton, Michigan 48187
734-455-9771
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Project Name: Former YMCA Demolition
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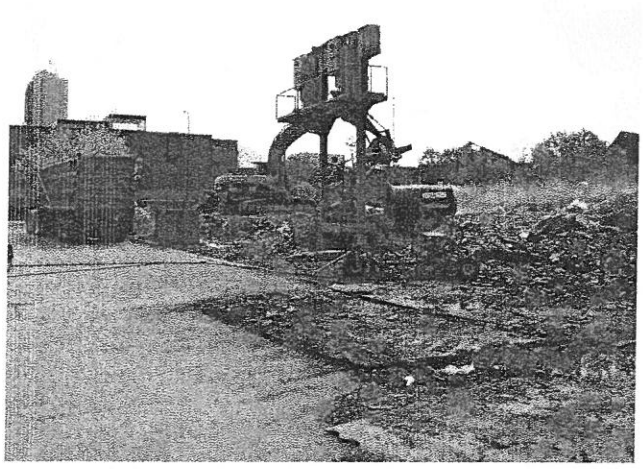

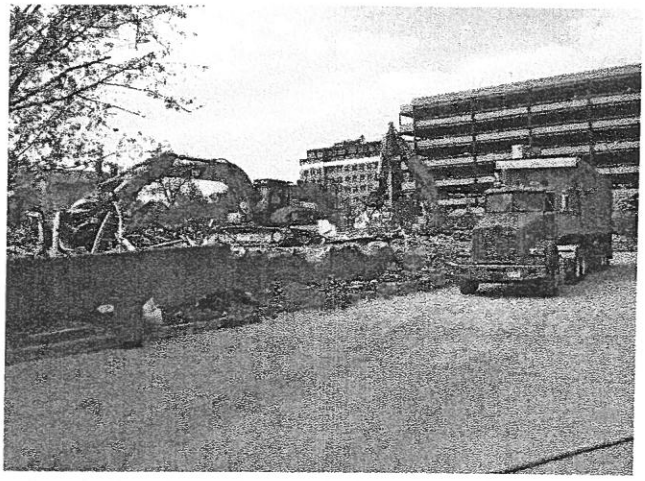

05-05-2008

HAE

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734-455-9771
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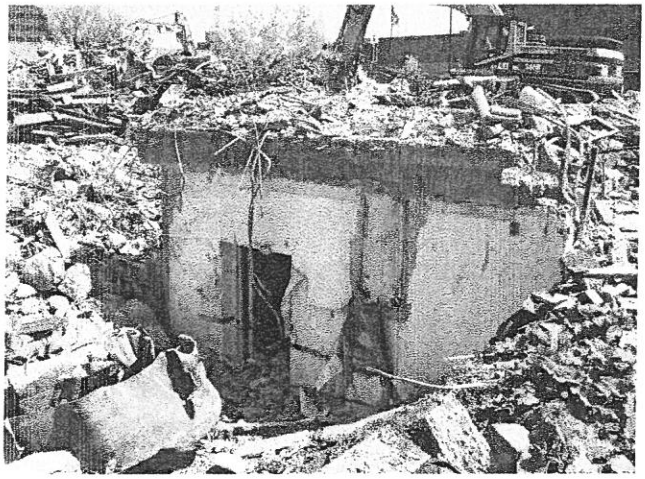

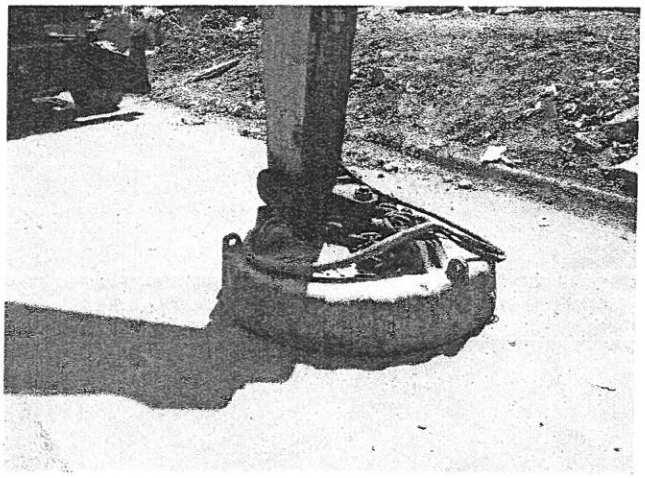

05-05-2008