ADDENDUM A TO CBI BUILDING DEMOLITION WORK PLAN

CBI & WILLCO BUILDINGS DRY-ICE BLASTING AND POWER WASH WORK PLAN

FOR THE

CARTER CARBURETOR SUPERFUND SITE

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CBI & WILLCO Buildings Dry-Ice Blasting and Power Wash Work Plan
for the
Carter Carburetor Superfund Site
St. Louis, Missouri

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CBI & WILLCO BUILDINGS DRY-ICE BLASTING AND POWER WASH WORK PLAN

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ABBREVIATIONS AND ACRONYMS

ACF	ACF Industries, LLC
ACM	Asbestos Containing Material
AOC	Administrative Order on Consent
ASA	Administrative Settlement Agreement
bgs	below ground surface
BMP	Best Management Practices
C&D	Construction and Demolition
CBI	Carter Building, Inc.
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
COC	Constituent Of Concern
CY	Cubic Yards
DIB	Dry-Ice Blasting
DWP	Demolition Work Plan
EE/CA	Engineering Evaluation and Cost Analysis
EPA	US Environmental Protection Agency
ft	foot (or feet)
ft^2	square feet
HRP	HRP Associates, Inc.
LBP	Lead Based Paint
LRA	Land Reutilization Authority of the City of St. Louis
HASP	Health and Safety Plan
MDNR	Missouri Department of Natural Resources
mg/kg	milligram per kilogram
mg/L	milligram per liter
MSD	Metropolitan St. Louis Sewer District
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PLM	Polarized Light Microscopy
POTW	Publicly Owned Treatment Works
PPE	Personal Pprotective Equipment
RAR	Removal Action Report
RAWP	Removal Action Work Plan
RC	Reinforced Concrete
RCRA	Resource Conservation and Recovery Act
Site	Carter Carburetor Superfund Site
SOW	Scope of Work
TCLP	Toxicity Characteristic Leaching Procedure
WCT	Water Collection Tank

CBI & WILLCO BUILDINGS DRY-ICE BLASTING AND POWER WASH WORK PLAN

1.0 INTRODUCTION

This work plan documents the scope of work (SOW) for pre-demolition cleaning activities of the CBI Building Inc. (CBI) and WILLCO Plastics (WILLCO) buildings at the Carter Carburetor Superfund Site (Site). The SOW is necessary to meet the guidance provided in Administrative Settlement Agreement (ASA) and Administrative Order on Consent (AOC) CERCLA 07-2013-0008. This plan describes the activities required for removal of specific materials from the interior of the CBI and WILLCO buildings that will contribute to dust generated during demolition of the building and lead in demolition debris.

1.1 Rationale and Purpose

The pre-demolition building cleaning is necessary to:

- Fulfill obligations under the ASA AOC;
- Reduce the potential migration of residual dust that may be impacted by site contaminants; and
- Reduce the amount of lead in the future building demolition debris that can be attributed to interior painted surfaces from the Site.

This work plan has been prepared and submitted to EPA as an addendum to the *CBI Building Demolition Work Plan for the Carter Carburetor Superfund Site,* dated August 25, 2014 (the Demolition Work Plan, DWP). The planned work, described herein, will be performed in addition to the pre-demolition activities described in Section 5 of the aforementioned Demolition Work Plan and in lieu of the treatment described in Section 5.7.1, which addressed surfaces covered with lead-based paint

1.2 Scope of Work Plan

Under this addendum Work Plan, the two buildings at the Site, CBI and WILLCO, will be prepared for demolition. In sequence, the pre-demolition cleaning will include:

- Removal of debris piles staged within the building;
- Removal of loose and flaking lead-based paint via dry-ice blasting; and
- Power washing floors.

Solid wastes generated during the cleaning process will be characterized and managed for off-site disposal and wastewater will be discharged to the publically owned treatment works (POTW).

The pre-demolition cleaning will be conducted following the removal of Universal Wastes and abatement of Asbestos Contaminated Materials (ACM) from the building, but prior to Equipment Mobilization, as described in the DWP.

1.3 Site Description

The Site is located in the City of St. Louis and encompasses approximately eight (8) acres. The vicinity of the Site is a historically developed mixed-use urban area and is bounded as follows:

- West: North Grand Boulevard;
- South: St. Louis Avenue;
- East: North Spring Avenue; and
- North: Dodier Street.

Detailed descriptions of the CBI and WILLCO building were provided in the respective Demolition Work Plans. A summary of key building features is provided below. The site location and layout is illustrated on Figure 1-1 (Appendix A).

1.3.1 Carter Building, Inc. Building

- Four (4) story reinforced concrete (RC) framed structure;
- Brick exterior;
- First floor footprint is approximately 139,600 square feet (ft^2);
- Second floor footprint is approximately 133,200 ft^2;
- Third floor footprint is approximately 122,800 ft^2;
- Fourth floor footprint is approximately 83,650 ft^2;
- Six open breezeway/areas ways are located within the building.

1.3.2 WILLCO Plastics Building

- Two (2) story RC framed structure;
- Brick exterior;
- Each floor of the WILLCO Building is approximately 25,350 ft^2;
- The WILLCO Building was constructed adjacent to, and is connected with the CBI Building, but each building remains an independent structure.

2.0 PRE-DEMOLITION BUILDING CLEANING

2.1 Debris Removal

Prior to cleaning of the building interior, the debris and bulky non-structural demolition debris piles (debris piles) present in the building will be removed. In general, the debris and debris piles originated from two sources:

1. Residual materials placed throughout the buildings following former occupancy and as found at the time of Universal Waste Removal and start of the Asbestos Abatement projects.
2. Targeted and limited demolition of non-structural interior walls was necessary to perform and facilitate abatement of ACM, but resulted in generation of non-ACM debris.

These debris and bulky debris piles generally consist of:

- Dry wall and plaster;
- Wood;
- Sheet metal panels;
- Miscellaneous scrap metal; and
- Trash,

The demolition debris and bulky debris piles will be sorted and recoverable scrap metal will be segregated for recycling off-site. The remaining materials will be consolidated, containerized, and transported off-site for disposal at a permitted non-hazardous waste landfill capable of handling special wastes, bulky waste, and C&D debris.

2.2 Dry-Ice Blasting

Dry-Ice Blasting (DIB) will be performed on specific interior surfaces to substantially remove deteriorated paint, specifically the painted surfaces where the results of XRF readings from a previous Lead-Based Paint Inspection conducted from June 14, 2006 to June 26, 2006, indicate that the lead concentrations were above 1.0 mg/cm2 or 0.5% (see Appendix B, Figure 2 (former LBP1–4). In general, lead-based paint (LBP) was limited to green paint in the WILLCO and CBI Buildings on the lower portions of the interior walls, columns, and stairwells. LBP was also found on the interior man door components, fire door components, bumper posts, stair riser, handrails and support posts, bathroom stalls, and on the lower five feet of wall surfaces throughout the original four story section of the building. Although some test results on areas below the five feet level are negative, all surfaces below this level should be considered as LBP due to the extreme deterioration of painted surfaces in many areas which may account for the negative results in some areas. All LBP surfaces of the WILLCO and CBI Buildings which are readily accessible will be cleaned by DIB. In 2012, TetraTech EM Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) was tasked by the U.S. Environmental

Protection Agency (EPA) Region 7 Superfund Division to conduct a Removal Assessment to confirm presence of ACM, PCBs, and LBP in the WILLCO Building, identified during previous the sampling event(s), in this case only one, in June 2006 for LBP.

The DIB system uses compressed air to propel dry-ice particles against a surface at high velocity. The impact of the particles at low-temperature will physically remove the LBP surface coating from the brick, concrete, or metal substrate. The method is considered an abrasive technique, but does not generate additional wastes from the application process, unlike sand blasting. The removed material will be wetted as necessary to suppress dust, and collected into containers. The wetted materials will be swept, shoveled, and/or vacuumed for collection into containers.

A temporary containment using polyethylene sheeting will be established along exterior building openings in the area where DIB is performed. The containment will eliminate fugitive dust migration from the building. Work will progress starting at the top floor of the building and progress downward to maximize the collection of debris and minimize impacting cleaned areas.

Following the DIB, a joint visual inspection will be performed by HRP/USEPA to verify that deteriorated paint has been removed to the extent practicable and the resulting waste has been collected and containerized.

2.3 Power Washing

Following DIB of the interior LBP surfaces, the building floors will be power washed using commercially available low flow, high pressure sprayers. Potable water will be brought to the Site or a City of St. Louis fire hydrant will be accessed in order to obtain water. Power washing will proceed from the top floor downward. HRP will monitor the power washing operations to ensure that the entire area of the floors has been sprayed.

The rinsate wastewater will be collected using vacuums, as practical, and transferred to a temporary storage tank located on each floor for screening and settlement. The screening tank will be configured so that debris and solids that do not settle and are too large for the water treatment process are retained in the screening tank; and the rinseate wastewater that was collected may pass through the screen for subsequent treatment at the on Site wastewater treatment facility or be shipped offsite for disposal. The settleable and screened solids will be collected and containerized on-site for characterization and/or disposal.

2.4 Health and Safety

All work will be performed in compliance with the existing Site-Specific Health and Safety Plan (HASP). The HASP will be updated for this SOW. The Personal Protective Equipment (PPE) workers will wear, at a minimum, will include:

- Water and/or chemical resistant outer clothing;

- Cut and/or chemical resistant gloves;
- Steel toed shoes;
- Eye protection or face shields; and
- Hard hats.

If circumstances warrant, respiratory protection may also be required. However, considering that lead, PCBs, and asbestos are contaminants of concern; Dry Ice Blasting and Pressure Washing Activities will be conducted in half faced respirators fitted with P-100 cartridges. Based on real-time monitoring, supplemental ventilation will be performed during DIB to ensure oxygen depleted environments do not occur.

Mechanical equipment used in the collection and treatment of the waste solids and wastewater will be decontaminated as necessary prior to removal of the equipment from the site.

3.0 DISPOSAL

The waste liquids and solids generated during building cleaning will be collected, containerized, and characterized to determine disposal requirements.

3.1 Solid Phase Wastes

The solid phase wastes generated during the building cleaning process will include:

- Soiled PPE;
- Spent filter media;
- Used containment materials;
- Paint and incidental material removed from DIB; and
- Settleable and screened solids from wastewater.

The collected waste materials will be consolidated for characterization and appropriate transport packaging. Representive grab samples will be collected from the DIB waste and wastewater solids. The samples will be analyzed for:

- Lead following the Toxicity Characteristic Leaching Procedure (TCLP);
- Polychlorinated Biphenyls (PCBs) via EPA Method 8082; and
- Asbestos by Polarized Light Microscopy (PLM).

Additional testing may be performed as required by the disposal facility. If necessary, after characterization has been completed, an inert solidifying agent may be added to the material in order to meet transport and landfill requirements.

Following characterization, the solid phase wastes will be transported off-site to a permitted disposal facility approved by the ACF Project Coordinator.

3.2 Liquid Phase Waste/Wastewater

Wastewater will be generated from power washing and decontamination of equipment, which will be consolidated in the screening tank(s). The wastewater in the screening tank(s) will be sampled and characterized to determine management and disposal requirements. The testing for characterization will include the parameters listed above. Depending on the characterization results and final volume generated, the wastewater will be managed in one of the two following means:

1. Pre-treatment and discharge to the POTW; or
2. Transport off-site for disposal.

Additional analytical testing parameters may be required based on the selected management option.

If a sufficiently large volume (i.e. greater than 10,000 gallons) of wastewater is generated and contains elevated levels of constituents of concern, on-site treatment and discharge to the POTW may be performed. The POTW is operated by the St. Louis Metropolitan Sewer District (MSD). An application for a Special Discharge Approval will be prepared and submitted. In such a case, the wastewater will be treated and tested to confirm concentrations of constituents of concern and physical properties are compliant with effluent limits specified in the discharge approval prior to discharge. The treatment system will at minimum include primary settlement, screening of solids, and filtration.

Alternatively, based on smaller final volume of wastewater and characterization results, mobilization and operation of an on-site treatment system may or may not be warranted. In such a case, transport of the wastewater off-site via vacuum tanker truck for disposal may be performed.

4.0 REPORTING & DOCUMENTATION

Implementation of the work plan will be documented and reported to EPA. While the pre-demolition building cleaning is performed, daily field reports documenting site activities will be prepared. A summary memorandum will be prepared and submitted to EPA following the completion of building cleaning and receipt of waste disposal documents (i.e. manifests, certificates of disposal, discharge monitoring reports, etc.). The memorandum will include:

- Narrative detailing field activities;
- Copies of waste disposal documentation;
- Copies of Special Discharge Authorization and correspondences with MSD;
- Copies of laboratory analytical reports for waste characterization and discharge sampling, as applicable.

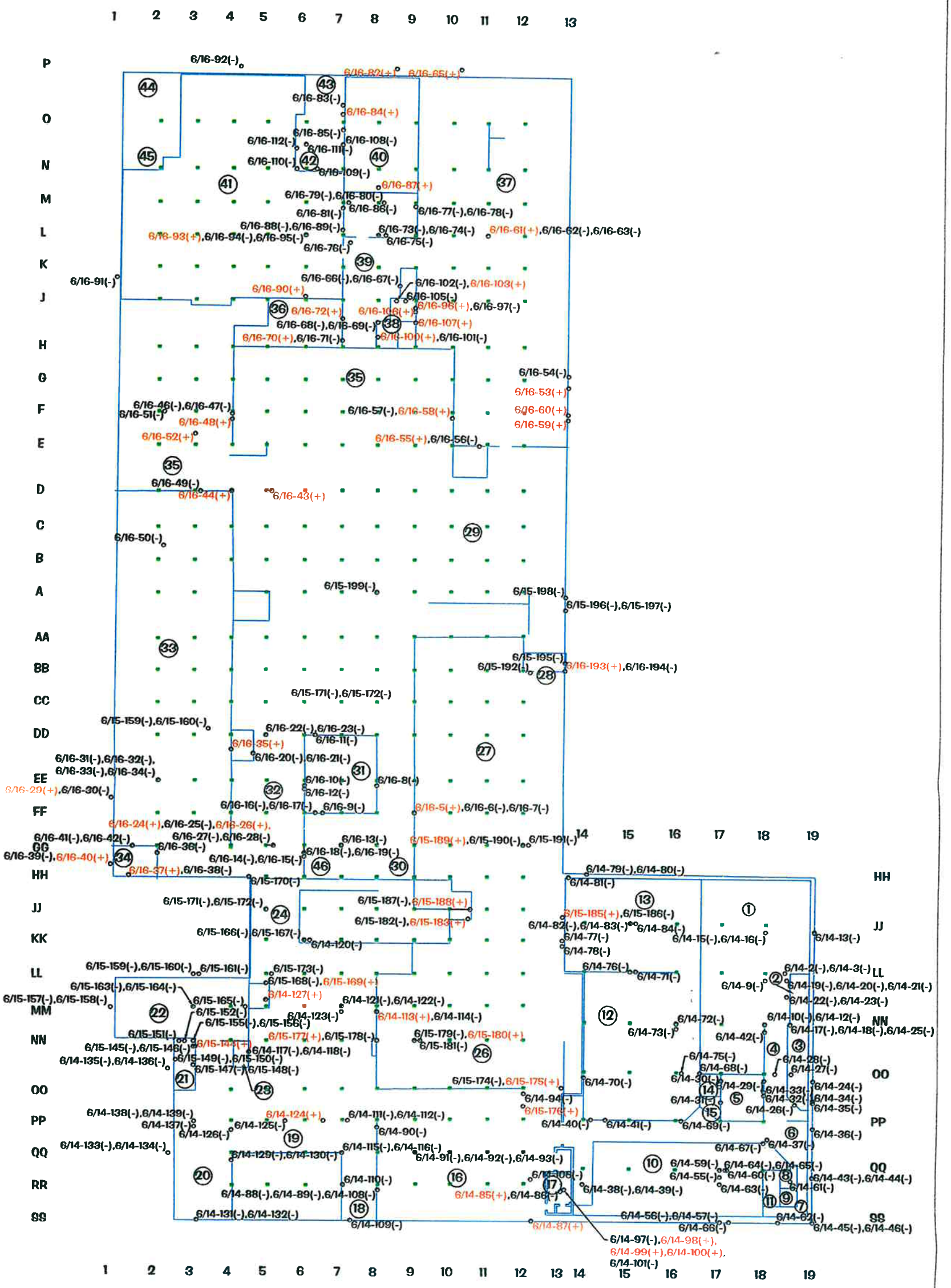
Additionally, a summary of the cleaning activities will be included in the final Removal Action Report (RAR).

Appendix A

Figure 1

Appendix B

Figure 2



LEGEND

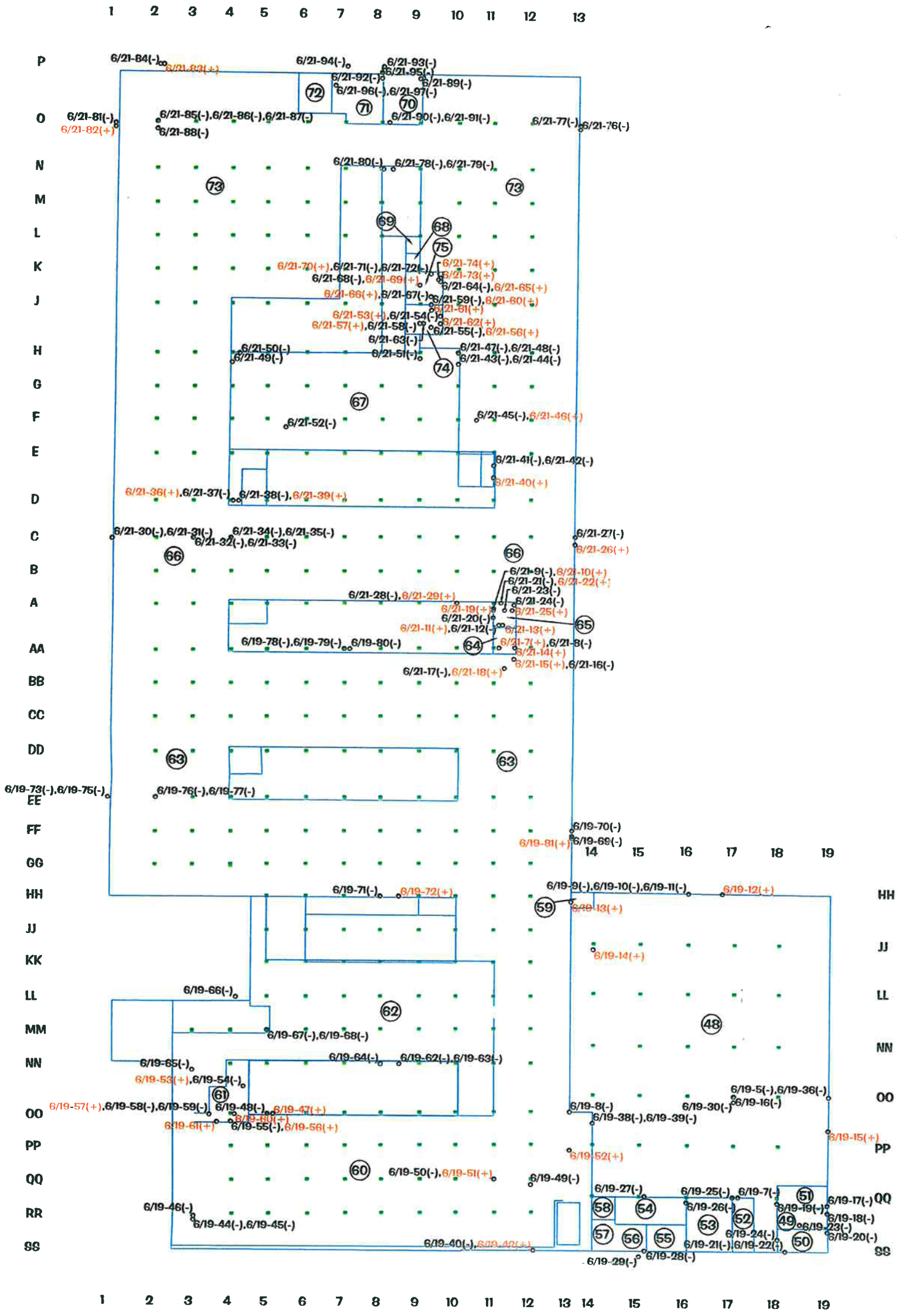
①	ROOM NUMBER
6/16-8(-)	NEGATIVE TESTSAMPLE
6/16-37(+)	POSITIVE TEST SAMPLE

Crystal Environmental Group, Inc.
Asbestos/Lead/Mold Remediation, Selective Demolition, Specialty Coatings

Drawn by: AZM
Checked by: RPM

FIGURE LBP-1
FORMER CARTER CARBURETOR SITE
1st FLOOR ST LOUIS, MO

Date: July 26, 2006



LEGEND

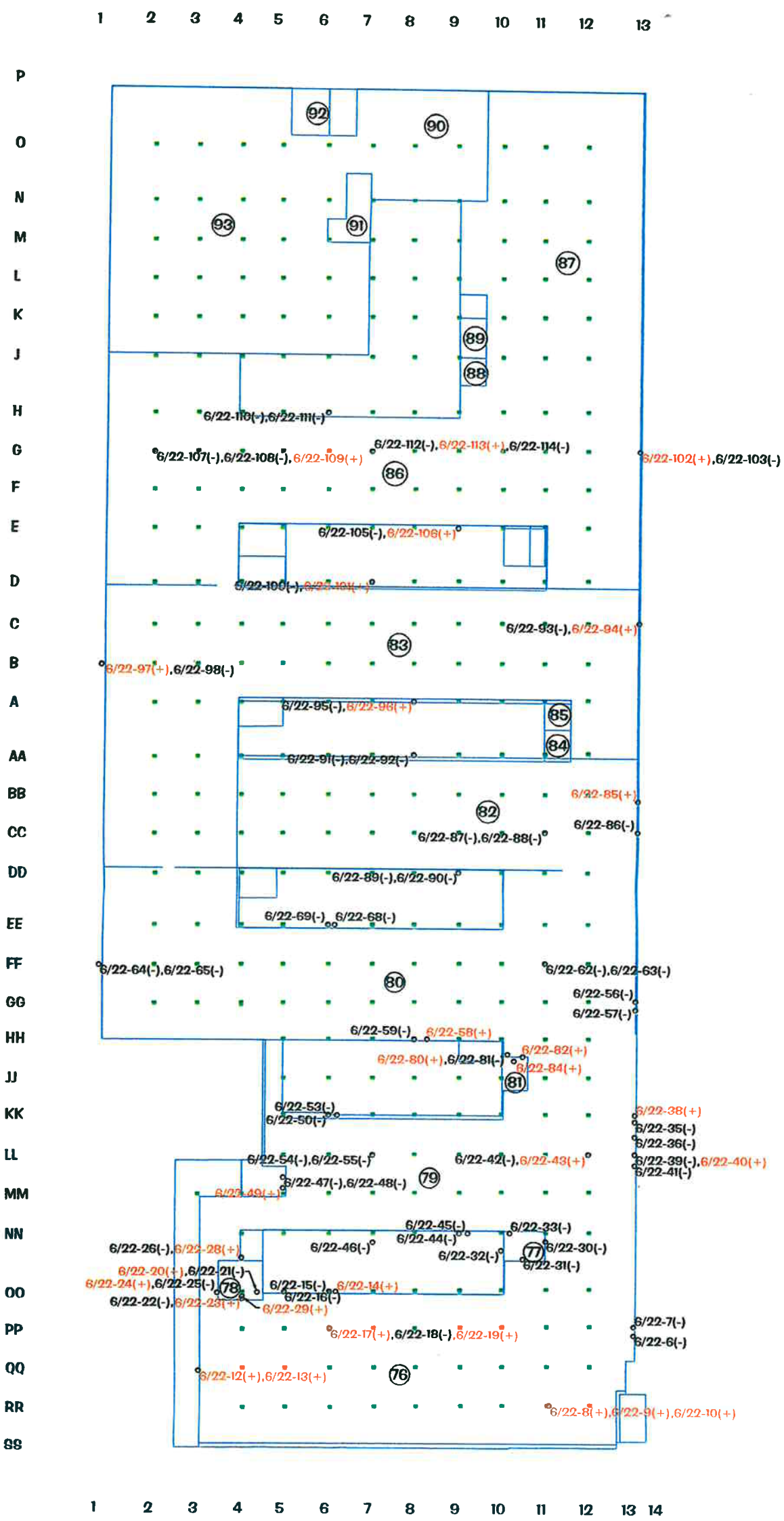
①	ROOM NUMBER
6/19-8(-)	NEGATIVE TESTSAMPLE
6/19-37(+)	POSITIVE TEST SAMPLE

Crystal Environmental Group, Inc.
Asbestos/Lead/Mold Remediation, Selective Demolition, Specialty Coatings

Drawn by: AZM
Checked by: RPM

FIGURE LBP-2
FORMER CARTER CARBURETOR SITE
2nd FLOOR ST LOUIS, MO

Date: July 26, 2006



LEGEND

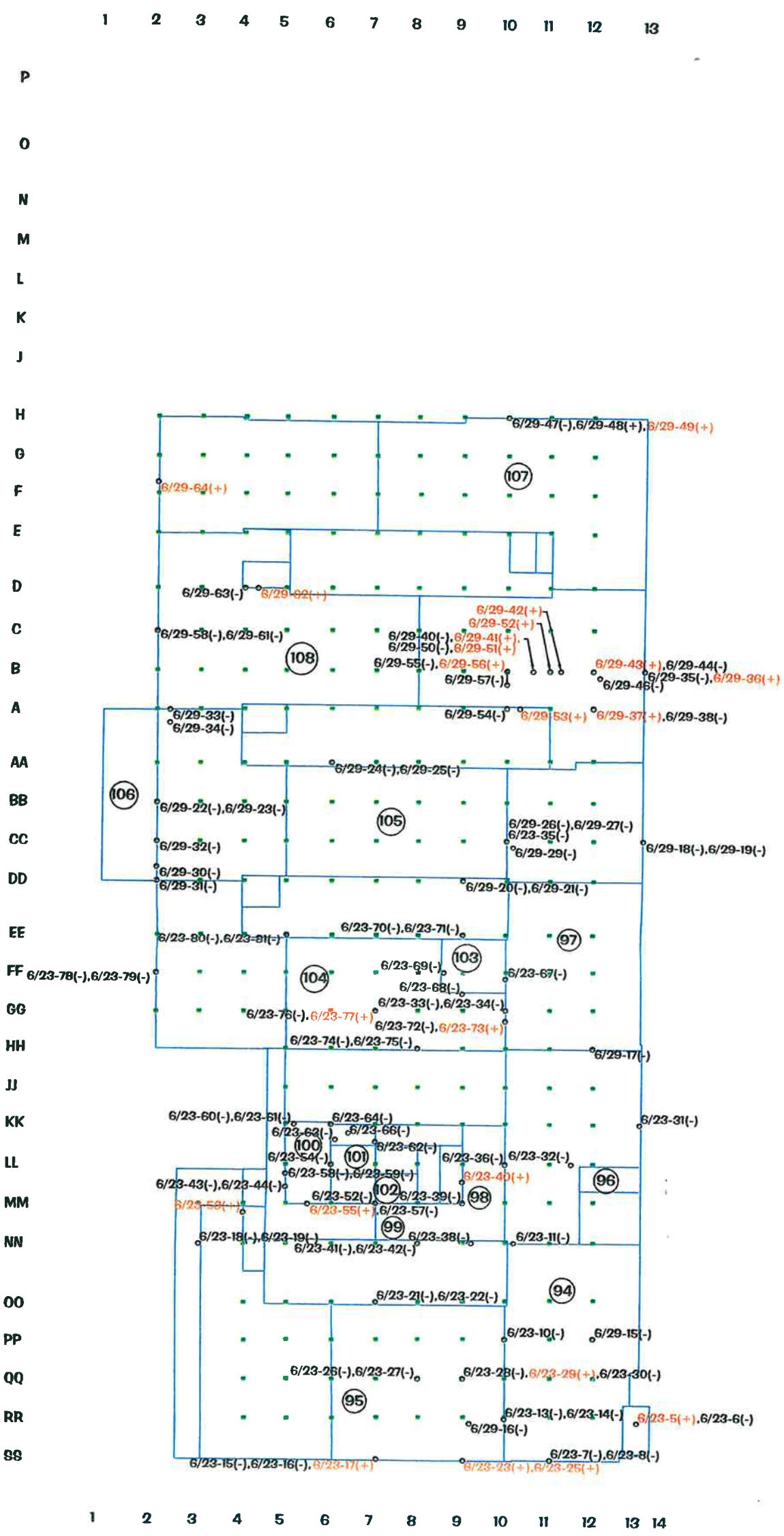
①	ROOM NUMBER
6/16-6(-)	NEGATIVE TESTSAMPLE
6/18-37(+)	POSITIVE TEST SAMPLE

Crystal Environmental Group, Inc.
Asbestos/Lead/Mold Remediation, Selective Demolition, Specialty Coatings

Drawn by: AZM
Checked by: RPM

FIGURE LBP-3
FORMER CARTER CARBURETOR SITE
3rd FLOOR ST LOUIS, MO

Date: July 26, 2006



LEGEND		
① ROOM NUMBER 6/16-6(-) NEGATIVE TESTSAMPLE 6/16-37(+) POSITIVE TEST SAMPLE	Crystal Environmental Group, Inc. Asbestos/Lead Mold Remediation, Selective Demolition, Security Cleaning Drawn by: AZM Checked by: RPM	FIGURE LBP-4 FORMER CARTER CARBURETOR SITE 4th FLOOR ST LOUIS, MO Date: July 26, 2006