ASBESTOS SURVEY
FOR THE
ASBESTOS ABATEMENT OF BUILDING 401
NIAGARA FALLS STORAGE SITE
LEWISTON, NEW YORK

PREPARED FOR:

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BUFFALO DISTRICT
BUFFALO, NEW YORK
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Jacobs Engineering believes **QUALITY** is the cornerstone of excellence in providing professional services. Total Quality Management has been implemented to maintain high standards through established procedures used to review and check company deliverables. The goals of these procedures are to produce quality documents and to establish an environment in which there is continual improvement.

Leo F. Mann III
Asbestos Inspector
New York State Certification # AH 01-21580

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Program Manager

SUMMARY

Jacobs Engineering Group, Inc. (Jacobs) is under contract with the United States Army Corps of Engineers (USACE), Buffalo District, to provide Engineering, Procurement, and Construction services including, but not limited to, the development of an Asbestos Survey for Building 401 at the Niagara Falls Storage Site. An Asbestos Survey was conducted to identify asbestos containing materials (ACM) located throughout the interior of the building.

Jacobs asbestos materials survey was performed on January 22-23, 2002 and included identification and collection of 85 samples of suspect asbestos containing building materials. Friable and non-friable asbestos containing materials identified throughout the survey area included fire doors (assumed), all 9" x 9" floor tile and associated mastic, cove base, mudded TSI fittings, pipe insulation, tank insulation, boiler insulation, transite flu pipe (assumed), transite wall panels, TSI debris, and a transite oven (assumed).

Jacobs recommends all identified asbestos containing building materials that may be impacted by renovation or demolition be removed and disposed of accordingly according to the Occupational Safety and Health Administration (OSHA) guidelines.

The findings and opinions are based on information obtained during our study and our professional opinion. The report should be read in its entirety to learn all relevant information that contributed to the opinions.

I. INTRODUCTION

Jacobs has been retained by the USACE, Buffalo District, to perform an asbestos materials survey for the NFSS Building 401, located in Lewiston, New York. The asbestos survey included; a review of existing drawings provided by USACE; a site visit to perform a visual inspection of the building interior, the collection of bulk samples of suspect asbestos containing building materials (ACBM) and the preparation of a written report of the findings.

Suspect ACBM were noted and collected during the site visit. The asbestos survey was performed by State of New York certified asbestos inspectors (Leo Mann and Jeff Neumann) and included the collection of samples of suspect ACBM. Samples were sent for analysis to EMSL, an accredited independent testing laboratory participating in the National Voluntary Laboratory Accreditation Program for Asbestos Sample Analysis.

Upon completion of the field sampling and laboratory analysis, the Asbestos Survey Report was prepared summarizing the scope of services, sampling protocol, laboratory procedures, survey results, and recommendations. The report also includes copies of laboratory reports and chain-of-custody forms.

Coincidental to conducting the asbestos survey, Jacobs performed a radiological scan of all areas where suspected ACBM was sampled.

II. SAMPLING PROTOCOL AND LABORATORY PROCEDURES

Jacobs sampling protocol focuses on identifying various surfacing materials, thermal system insulation (TSI) and miscellaneous materials suspected to contain asbestos. Each of these materials was divided into homogeneous sampling areas uniform in color, texture, application, and general appearance. Once homogeneous areas were delineated, material types within the homogeneous area were identified and sampled.

After preliminary assignment of homogeneous areas and a visual inspection of the building interior, a sampling scheme was developed. AHERA protocols were used. This included the collection of a minimum of three samples of each type of homogenous thermal system insulation, surfacing treatments, and miscellaneous materials. For a sampling area between 1,000 and 5,000 square feet, the inspector took at least 5 samples and for a sampling area over 5,000 square feet, seven samples were taken for analysis.

Sample locations were determined in the field by the Jacobs asbestos inspectors. Once the sample location was identified, a Jacobs Health Physics (HP) Technician performed a radiological screening at that location. This HP technician was with the asbestos inspectors at all times while inside the building. All radiological testing results were less than the RAD release levels as per NRC Regulation 1.86 and samples of suspect asbestos containing materials were taken at those locations.

A unique sample ID number was assigned to each sample location. This ID number was on the sample container, a plastic zip-lock sample bag. The sample ID number and the sample location were recorded on the sample area diagram (field copy), data sheet, and the Chain of Custody sheet. Upon completion of the field survey, the bulk sample bags were placed in a second oversized zip-lock bag, along with the Chain of Custody sheet, packed in a FEDEX box, and sent for overnight delivery to EMSL Analytical, Inc. for analysis.

Bulk samples were analyzed according to 12 NYCRR 56 asbestos regulations for bulk samples. Asbestos samples were analyzed using Polarized Light Microscopy (PLM). Samples of Non-friable Organically Bound (NOB) materials found to contain less that 1% by PLM were then analyzed using Transmission Electron Microscopy (TEM). A Summary of the Bulk Sample Results is presented as Table 2 of this Report.

Digital photographs were taken of the various areas of the building, asbestos materials, and sampling locations and can be found in Appendix 2.

The identified ACM was quantified by dimension. All volumes recorded are reported in cubic feet. In the case of pipe insulation, the lengths of pipe containing the insulation, pipe diameters, and insulation thickness, and insulation condition was observed to determine insulation volume. Building 401 survey quantities of ACM can be found in Table 1.

Upon completion of sampling, asbestos samples were sent to EMSL Analytical, Inc. in Westmont, New Jersey. EMSL is accredited by the National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program (NVLAP) for bulk asbestos analysis using polarized light microscopy (PLM) with dispersion staining, accredited by the State of New York for PLM Non-Friable Organically Bound (NOB) analysis and State of New York for Transmission Electron Microscopy (TEM) of NOB's. These methods identify the six types of asbestos identified by EPA, which are chrysotile, amosite, crocidolite, anthophyllite, tremolite and actinolite. Chrysotile is the most widely used of the six types. EMSL laboratory results and chain of custody forms are located in Appendix 1.

Asbestos containing materials are recognized as materials that are formed by mixing asbestos fibers with other products, including but not limited to rock, wool, plaster, cellulose, clay, vermiculite, perlite and a variety of adhesives, that when combined, they contain more than one percent asbestos by volume. Some of these materials may be sprayed on surfaces or applied to surfaces in the form of plaster or textured paint.

III. ACBM SURVEY AND RESULTS

Currently, there are no state, EPA or OSHA regulations that mandate the removal of ACBM from buildings. In Guidance for Controlling Asbestos-Containing Materials in Buildings (DPA 560/5-85-024, June 1985), EPA states: "The presence of asbestos in a building does not mean that the health of the building occupants is necessarily endangered. As long as asbestos-containing material (ACM) remains in good condition and is not disturbed, exposure is unlikely. When building maintenance, repair, renovation or other activities disturb ACM, or if it is damaged, asbestos fibers are released creating a potential hazard to building occupants." EPA (40 CFR Part 61, Subpart M), OSHA (29 CFR Part 1926), and New York State (12 NYCRR Part 56) Regulations require that asbestos be properly handled during renovations and demolitions that will disturb ACM. The asbestos industry generally recognizes that the only permanent solution to asbestos hazards is removal and disposal of ACM.

The ACBM survey was divided into three components: a review of existing as built drawings, a visual survey, and the collection of bulk samples of suspect materials for analysis. The visual survey took into account three building components: structural materials, finishes, and mechanical systems for each area scheduled for demolition. See attached Building 401 drawings for bulk sample locations and asbestos containing material locations.

First Floor Office Area – Rooms 101, 102, 103, 105, 106, 107, 108, 109, 111, 113, 114, 115, 116, 118, 125, 133, 150, and Hallway

The field survey identified the following suspect asbestos materials within the First Floor Office Area: 9”x 9” green, tan, black, and white floor tile and mastic, transite wall panels, cove baseboard, tan stair tread, plaster ceilings/walls, window blind straps, pipe and fitting insulation, window glazing, fiberglass pipe insulation jacket, and transite flu pipe. Analysis of samples of the 9” x 9” floor tile, tile mastic, transite wall panels, cove baseboard, and pipe and fitting insulation collected by Jacobs indicated the materials contain asbestos. The transite flu pipe in Rooms 125 and 118 was not sampled but should be assumed to contain asbestos.

Asbestos containing pipe and fitting insulation was observed above the ceilings in office rooms 101, 102, 103, 105, 106, 107, 108, and 109. Also, ACM pipe and fitting insulation is assumed to exist in the shower and bathroom utility chases in Rooms 105, 106, and 107

A condition assessment of asbestos containing materials was performed during the field survey of the office areas. Damaged and loose floor tile/cove base were evident throughout each of the

rooms, as well as various degrees of pipe and fitting insulation damage. Minor locations of damaged transite wallboard panels were observed in each material location.

Boiler Room 120

The field survey identified the following suspect asbestos materials within the Boiler Room: boiler insulation, boiler gasket, window glazing, pipe insulation, tank insulation, and fitting insulation. Analysis of samples of the boiler insulation, fitting and pipe insulation, and tank insulation collected by Jacobs indicated the materials contain asbestos. The boiler gasket material was not sampled and should be assumed to contain asbestos.

A condition assessment of asbestos containing materials was performed during the field survey of the boiler room area. The insulation on boilers 1 and 2 was significantly damaged and insulation debris was located on the floor around each boiler. The insulation on the water tank, located at the sump, had deteriorated and fallen off into the water filled sump. The pipe and fitting insulation was damaged throughout the room and ACM insulation debris was observed to be the majority of the boiler room floor debris. ACM debris was also noted below the floor grating. The insulation on the two elevated water tanks was in good condition.

Rooms 117 and 119

The field survey identified the following suspect asbestos materials within Rooms 117 and 119: pipe and fitting insulation, drywall, and transite wallboard panels. Analysis of samples of the materials sampled by Jacobs indicated the pipe and fitting insulation and the transite wallboard panels contain asbestos.

A condition assessment of asbestos containing materials was performed during the field survey of Rooms 117 and 119. Damaged pipe insulation was observed near the exterior entrance door to Room 119 and near the boiler room entry door in Room 117. Friable thermal system insulation debris was observed on the floors below the damaged pipe insulation noted earlier. Minor locations of damaged transite wallboard panels were observed in each material location.

Room 121

The field survey identified the following suspect asbestos materials within Room 121: pipe and fitting insulation, plaster walls/ceilings, and window glazing. Analysis of samples of the materials sampled by

Jacobs indicated the pipe and fitting insulation contain asbestos.

A condition assessment of asbestos containing materials was performed during the field survey of Room 121. Damaged pipe insulation was observed along the perimeter walls of the room with friable insulation debris located on the floor beneath the pipe runs.

Rooms 127, 128, 129, 131, and 132

The field survey identified the following suspect asbestos materials within Rooms 127, 128, 129, 131, and 132: 9"x 9" green floor tile and mastic, transite oven, transite wall and ceiling panels, cove baseboard, drywall, plaster ceilings/walls, spray on foam insulation, and window glazing. Analysis of samples of the 9" x 9" floor tile, tile mastic, transite wall and ceiling panels, and cove baseboard collected by Jacobs indicated the materials contain asbestos. The transite oven was not sampled but should be assumed to contain asbestos.

A condition assessment of asbestos containing materials was performed during the field survey of the rooms. Damaged and loose floor tile/cove base was evident throughout each of the rooms, as well as insulation debris on the floor of Room 128. Minor locations of damaged transite wall/ceiling board panels were observed in each material location.

Room 122 and Tower Area

The field survey identified the following suspect asbestos materials within Room 122 and Tower Area: pipe and fitting insulation, two fire door leafs, plaster walls/ceilings, and window glazing. Analysis of samples of the materials sampled by Jacobs indicated the pipe and fitting insulation contain asbestos. The fire door leafs were not sampled but should be assumed to contain asbestos.

A condition assessment of asbestos containing materials was performed during the field survey of Room 122 and the Tower Area. Damaged Tower pipe insulation was observed on the vertical piping in the Tower Area shaft, as well as insulation debris on a majority of the floor of Room 122.

Rooms 144, 145, and 146

The field survey identified the following suspect asbestos materials within Rooms 144, 145, and 146: 9" x 9" tan floor tile and mastic, drywall, plaster walls/ceilings, and window glazing. Analysis of samples of the materials sampled by Jacobs indicated the floor tile/mastic and associated cove base contain

asbestos.

A condition assessment of asbestos containing materials was performed during the field survey of the rooms. Damaged and loose floor tile/cove base was evident throughout Rooms 146 and 145, as well as bags of asbestos material covering the floor of Room 144. It is assumed that ACM floor tile and mastic is below the layer of plastic covering the floor of the room.

Second Floor Office Areas – Rooms 201, 202, 204, 205, 206, 207, 208, 210, 211, 213, 214, 215, 219, 221, 222, and Hallway

The field survey identified the following suspect asbestos materials within the Second Floor Office Areas: 9"x 9" green, tan, black, and red floor tile and mastic, transite wall panels, cove baseboard, tan stair tread, plaster ceilings/walls, window blind straps, pipe and fitting insulation, window glazing, drywall, 12" x 12" acoustical ceiling tile and associated brown mastic. Analysis of samples of the 9" x 9" floor tile, floor tile mastic, transite wall panels, cove baseboard, and pipe and fitting insulation collected by Jacobs indicated the materials contain asbestos.

Asbestos containing pipe and fitting insulation was observed above the ceilings of each of the above rooms. Also, ACM pipe and fitting insulation is assumed to exist in the shower and bathroom utility chases in Rooms 213 and 214.

A condition assessment of asbestos containing materials was performed during the field survey of the office areas. Damaged and loose floor tile/cove base was visible throughout each of the rooms, as well as various degrees of pipe and fitting insulation damage. Minor locations of damaged transite wallboard panels were observed in each material location.

Areas 203 and 217

The field survey identified the following suspect asbestos materials within Areas 203 and 217: pipe and fitting insulation, ductwork flex connectors, drywall, plaster walls/ceilings, and window glazing. Analysis of samples of the materials sampled by Jacobs indicated the pipe and fitting insulation contain asbestos.

A condition assessment of asbestos containing materials was performed during the field survey of the areas, and damaged sections of pipe and fitting insulation were visible near each air-handling unit located in each of the areas.

Rooms 216 and 220

The field survey identified the following suspect asbestos materials within Rooms 216 and 220: pipe and fitting insulation, tank insulation, and drywall. Analysis of samples of the materials sampled by Jacobs indicated the tank insulation and pipe and associated fitting insulation contain asbestos.

A condition assessment of asbestos containing materials was performed during the field survey of the areas, and damaged sections of pipe and fitting insulation were detected in Room 216. The tank insulation was in good condition.

Area 250

The field survey identified the following suspect asbestos materials within Area 250: pipe and fitting insulation. Analysis of samples of the materials sampled by Jacobs indicated the pipe and associated fitting insulation contain asbestos.

A condition assessment of asbestos containing materials was performed during the field survey of the area. The pipe and fitting insulation located above the first floor ceilings in Area 250 were in good condition.

Area 217

The field survey identified the following suspect asbestos materials within Area 217: plaster walls, window glazing, and ductwork flex connectors. Analysis of samples of the materials sampled by Jacobs indicated the suspect materials to be non-asbestos containing material.

IV. RADIOLOGICAL SURVEY CHRONOLOGY AND NARRATIVE

The following is a summary of the radiological survey effort conducted coincidentally with the asbestos assessment. Mr. David Fleming (SSHO/HP) and Mr. Dennis Larson of Jacobs performed the work.

January 21, 2002

Traveled to site.

January 22, 2002

Began fieldwork. Arrived site approx. 0730. Early morning consisted of unpacking equipment & supplies, source checking radiological instruments, and determining field background count rate averages (alpha and beta activity) for each instrument. Instruments used were Ludlum Model 2360 scaler/ratemeters with Ludlum Model 43-68 alpha/beta scintillation detectors. Also had an additional copy of my training certificates and respirator qualifications faxed to the site.

Job trailer was present but electrical power hook-up was not completed until later in the afternoon. No toilet provided, we used the Corps bathroom in their on-site office/shop.

Late morning I provided radiological worker training to Leo Mann and Jeff Neumann who performed the asbestos assessment. I covered the topics listed in the Safety & Health Plan, answered questions, and gave them the exam. Both Leo and Jeff passed the exam. Dennis Larson, my health physics technician, also took the exam in order to have a documented exam on site. However he has already completed radiological worker training and refresher training many times, and is a qualified technician.

We entered Building 401 approx. 1330. All four of us (Leo Mann, Jeff Neumann, Dennis Larson, and myself) remained together and walked down the building to visually assess health & safety hazards and potential asbestos-containing material. PPE included Tyvek coveralls, boot covers, cotton gloves, full-face air purifying respirators with HEPA cartridges, and hard hats. We also had flashlights and fluorescent lanterns due to the poor lighting conditions (no power into the building for AC portable lighting).

Leo Mann and Jeff Neumann exited the building approx. 1445, Leo's respirator fogging up. Dennis Larson and I accompanied them to the exit door, performed radiological surveys on their equipment, hands, boot soles, hard hats, and respirators. Only 1 item found to have radioactive contamination: Leo's hardhat. Plate-out of naturally occurring radon daughter radioactive decay products suspected on the plastic hard hat. This often occurs on hard hats due to the electrostatic charge on them, radon daughters either attach directly to the hard hat or to airborne dust which then is electrically attracted to the hard hat. Leo left his hard hat within the building upon exiting. We surveyed his hard hat again the next day and found no contamination. This is again common since the effective half-life of radon daughters is about 30 minutes.

Dennis Larson and I remain together inside the building and perform radiological surveys in areas Leo had indicated he would like to sample. Both total (direct) and removable radiological surveys performed at 23 potential sample locations. No survey locations encountered which exceed NRC Reg. Guide 1.86 surface contamination limits. We exited the building at approx. 1630, performed radiological surveys on our equipment and ourselves, and detected no contamination. We left site approx. 1700.

January 23, 2002

Arrived on site approx. 0730. Dennis Larson source checks radiological instruments and determines field background count rate averages (alpha and beta activity) for each instrument. Leo Mann, Jeff Neumann, Dennis Larson, and myself again enter the building in the same level of PPE as yesterday. A personal air sampler for asbestos is being worn by Leo, while I am wearing a personal sampler for airborne radioactivity. Leo and Jeff collect samples from the areas where radiological surveys already performed, while Dennis and I continue to perform surveys in potential sample locations identified yesterday by Leo. We all exit the building at approx. 1100 with Dennis and I performing radiological surveys on personnel and equipment. No contamination detected.

Approx. 1200 Leo, Jeff and I enter the building (Dennis stays outside). The 3 of us remain together throughout the afternoon. Leo identifies sample locations, I perform radiological surveys prior to sampling, and Jeff or Leo collect the samples once I determine the location is below NRC Reg. Guide 1.86 surface contamination limits. As was the case yesterday, no survey locations encountered which exceed NRC Reg. Guide 1.86 surface contamination limits. A total of 51 locations surveyed today for radioactive contamination. We all exit the building approx. 1645. I perform radiological surveys on personnel and equipment. No contamination detected. The project manager left site approx. 1500. The rest of us leave site approx. 1715.

January 24, 2002

Leo, Jeff, Dennis and I arrive site approx. 0730. We do not enter the building today. We pack up samples and equipment inside the job trailer and leave site approx. 1000.

Following is a summary of radiological surface contamination survey results collected during the asbestos assessment.

Parameter	Total Beta-Gamma	Total Alpha	Removable Beta-Gamma	Removable Alpha
# of individual measurements[A]	81	81	90	90
Critical Detection Level (CDL)[B] (units are dpm/100 cm^2)	114	11	144	14
% Below the CDL	69%	72%	100%	60%
Range of results exceeding the CDL (units are dpm/100 cm^2)	112 to 410	14 to 38	All results <CDL	18 to 24[C]
Building 401 Release Limits	1,000 (average)	100 (average)	200	20

Notes
A: Includes all sample, QC, and equipment release measurements.
B: Any measurement result exceeding the CDL is considered greater than instrument background.
C: All original removable alpha results were <20 dpm/100 cm^2. Four QC results were 24 dpm/100 cm^2.

As can be seen in the above table, the majority of radiological survey measurements were within the instrument background range (i.e. less than the CDL). Of the few original measurements which exceeded the CDL, all were less than the applicable NRC Reg. Guide 1.86 release limit. All total beta-gamma and alpha measurements were less than one-half of the applicable release limit.

TABLE 1
SUMMARY OF ACBM

Niagara Falls Storage Site - Building 401
Table 1
Asbestos Containing Material

Location	Piping		Fittings		Floor Tile/Mastic		Transite Panels		Tanks (4ea)		Boilers (2ea)		Oven	Fire Door	Debris
	(lf)	(cf)	(ea)	(cf)	(sf)	(cf)	(sf)	(cf)	(sf)	(cf)	(sf)	(cf)	(cf)	(cf)	(cf)
Room 125					270	4	1056	21							
Room 129					200	3							30		
Room 120	500	82	125	16					535	134	1100	275			180
Room 119	300	39	70	9											25
Room 133	65	9													
Room 118	30	4			150	2									
Room 117	240	31	65	9											10
Room 116	160	21			500	7									
First Floor Hallway					450	6									
Room 115	200	26	70	9	500	7	160	3							
Room 114	35	5			200	3	120	2							
Room 113					200	3	160	3							
Room 111					200	3									
Room 109	20	3			160	2									
Room 108					1200	17									
Room 105					24										
Room 102	40	5			400	6									
Room 101	100	13	25	3	400	6									
Room 103	10	1			150	2									
Room 107	20	3													
Room 135	75	10													
Room 121	210	28	50	7											
Room 127					400	6	400	8							
Room 131					300	4	930	19							
Room 132					200	3	740	15							
Chase 150	20	3	2												
Room 201,202,222,204	10	1			400	6									
Stairwell	8	1													
Room 214,221,215					325	5									
Second Floor Hallway					450	6									
Room 213	10	1			24										
Room 211	12	2			300	4									
Room 210, 219					750	11	300	6							
Room 208	8	1			240	3	200	4							
Room 205,206,207	16	2			700	10	500	10							
Room 217	190	25	65	9											
Tower Area	200	26													
Room 203	40	5	15	2											
Room 216	60	8	25	3					286	72					
Room 122	250	33	45	6										12	90
Room 146					200	3									
Room 145					400	6									
Room 144					240	3									130
Area 250	400	52	40	5											
TOTALS	3229	439	597	78	9933	138	4566	91	821	205	1100	275	30	12	435

TABLE 2
SUMMARY OF BULK SAMPLE RESULTS

Niagara Falls Storage Site - Building 401
Table 2
Summary of Bulk Sample Results

Sample Material	Sample Location	Sample Number	Sample Results
Pipe Insulation	Room 208	401-18-21	7.27% Amosite, 30.80% Chrysotile, 5.48% Crocidolite
Pipe Insulation	Room 109	401-35-30	6.35% Amosite, 28.60% Chrysotile, 4.71% Crocidolite
Pipe Insulation	Room 109	401-36-31	4.30% Amosite, 44.40% Chrysotile
Pipe Insulation	Room 216	401-70-63	8.16% Amosite, 19.00% Chrysotile
Pipe Insulation	Room 217	401-69-66	28.60% Amosite, 4.40% Chrysotile, 4.55% Crocidolite
Pipe Insulation	Boiler Room	401-74-70	21.10% Amosite, 18.20% Chrysotile
Ceiling Plaster	1st Floor Hallway	401-29-24	None Detected
Ceiling Plaster	1st Floor Hallway	401-30-25	None Detected
Ceiling Plaster	1st Floor Hallway	401-31-26	None Detected
Ceiling Plaster	2nd Floor Hallway	401-44-44	None Detected
Ceiling Plaster	Room 201/202	401-45-37	None Detected
Ceiling Plaster	Room 201/202	401-46-39	None Detected
Wall Plaster	Tower Area Shaft	401-78-72	None Detected
Wall Plaster	Tower Area Shaft	401-79-73	None Detected
Wall Plaster	Tower Area Shaft	401-80-74	None Detected
Stair Tread (Tan)	Stairwell (Office Area)	401-39-34	None Detected
Stair Tread (Tan)	Stairwell (Office Area)	401-40-35	None Detected
Stair Tread (Tan)	Stairwell (Office Area)	401-41-36	None Detected
12" x 12" Acoustical Tile	Room 214	401-49-45	None Detected
Associated Brown Glue	Room 214	401-83-45	None Detected
12" x 12" Acoustical Tile	Room 214	401-50-46	None Detected
Associated Brown Glue	Room 214	401-84-46	None Detected
12" x 12" Acoustical Tile	Room 214	401-51-47	None Detected
Associated Brown Glue	Room 214	401-85-47	None Detected
9" x 9" Black Floor Tile	Room 109	401-09-09	27.90% Chrysotile
9" x 9" Black Floor Tile	Room 208	401-21-18	27.90% Chrysotile
9" x 9" Black Floor Tile	Room 201/202	401-48-40	27.90% Chrysotile
9" x 9" White Floor Tile	1st Floor Hallway	401-32-27	19.80% Chrysotile, Mastic - None Detected
9" x 9" White Floor Tile	1st Floor Hallway	401-33-28	8.5% Chrysotile, Mastic - 2.6% Chrysotile

Niagara Falls Storage Site - Building 401
Table 2
Summary of Bulk Sample Results

Sample Material	Sample Location	Sample Number	Sample Results
9" x 9" White Floor Tile	1st Floor Hallway	401-34-29	26.2% Chrysotile, Mastic - 9.5% Chrysotile
Fitting Insulation	Room 115	401-12-50	None Detected
Fitting Insulation	Room 115	401-13-51	8.7% Chrysotile
Drywall/Joint Compound	Room 210	401-58-56	.50% Chrysotile
Drywall/Joint Compound	Room 210	401-59-56	.75% Chrysotile
Drywall/Joint Compound	Room 210	401-60-58	.50% Chrysotile
Transite Wallboard	Room 113	401-16-14	8.7% Chrysotile
Transite Wallboard	Room 207	401-17-15	18.5% Chrysotile
Transite Wallboard	Room 207	401-28-23	None Detected
Transite Wallboard	Room 208	401-61-57	14.4% Chrysotile
Transite Wallboard	Room 205	401-62-59	27.2% Chrysotile
9" x 9" Green Floor Tile	Room 201/202	401-46-38	6.2% Chrysotile
9" x 9" Green Floor Tile	Room 201/202	401-43-43	14.2% Chrysotile
9" x 9" Green Floor Tile	Room 125	401-01-01	24.0% Chrysotile
9" x 9" Green Floor Tile	Room 206	401-27-22	24.5% Chrysotile
9" x 9" Green Floor Tile	Room 109	401-37-32	29.2% Chrysotile
9" x 9" Green Floor Tile	Room 109	401-38-33	28.6% Chrysotile
9" x 9" Green Floor Tile	Room 109	401-42-41	45.8% Chrysotile, Mastic - <1% Chrysotile
Window Blind Straps	Room 205	401-24-20	None Detected
Window Blind Straps	Room 205	401-25-20	None Detected
Window Blind Straps	Room 205	401-26-20	None Detected
9" x 9" Tan Floor Tile	Room 115	401-02-02	2.9% Chrysotile, Mastic - <1% Chrysotile
9" x 9" Tan Floor Tile	Room 115	401-03-03	27.2% Chrysotile
9" x 9" Tan Floor Tile	Room 114	401-07-07	26.5% Chrysotile
9" x 9" Tan Floor Tile	Room 113	401-15-13	19.4% Chrysotile
9" x 9" Tan Floor Tile	Room 208	401-20-17	29.4% Chrysotile
Cove Base	Room 115	401-04-04	9.5% Chrysotile
Cove Base	1st Floor Hallway	401-05-05	<1% Chrysotile
Cove Base	Room 114	401-08-08	25.2% Chrysotile

Niagara Falls Storage Site - Building 401
Table 2
Summary of Bulk Sample Results

Sample Material	Sample Location	Sample Number	Sample Results
Cove Base	1st Floor Hallway	401-14-12	None Detected
Cove Base	2nd Floor Hallway	401-19-16	None Detected
Window Glazing	Room 114	401-06-06	<1% Chrysotile
Window Glazing	Room 205	401-22-19	<1% Chrysotile
Window Glazing	Room 205	401-23-19	<1% Chrysotile
Pipe Jacket	Room 115	401-10-10	None Detected
Pipe Jacket	Room 115	401-11-11	None Detected
Boiler Insulation	Boiler #1	401-71-67	None Detected
Boiler Insulation	Boiler #2	401-72-68	40% Chrysotile
Boiler Insulation	Boiler #3	401-73-69	30.80% Chrysotile
12" x 12" Acoustical Tile	Room 210	401-55-53	None Detected
Associated Brown Glue	Room 210	401-81-53	None Detected
12" x 12" Acoustical Tile	Room 210	401-56-54	None Detected
Associated Brown Glue	Room 210	401-82-54	None Detected
12" x 12" Acoustical Tile	Room 210	401-57-55	None Detected
9" x 9" Red Floor Tile	Room 211	401-52-48	16.8% Chrysotile, Mastic - 4.5% Chrysotile
9" x 9" Red Floor Tile	Room 211	401-53-49	28.90% Chrysotile
9" x 9" Red Floor Tile	Room 211	401-54-52	32.10% Chrysotile
Flex Connectors	Area 217	401-66-64	None Detected
Flex Connectors	Area 203	401-67-64	None Detected
Flex Connectors	Area 217	401-68-65	None Detected
Foam Insulation	Area 122	401-75-71	None Detected
Foam Insulation	Area 122	401-76-71	None Detected
Foam Insulation	Area 122	401-77-71	None Detected
Tank Insulation	Room 216	401-63-60	23.50% Chrysotile
Tank Insulation	Room 216	401-64-61	25.00% Chrysotile
Tank Insulation	Room 216	401-65-62	19.00% Chrysotile

APPENDIX 1

ASBESTOS LABORATORY REPORTS AND CHAIN OF CUSTODY

CHAIN OF CUSTODY

Jacobs Engineering
501 North Broadway
St. Louis, MO 63102
Tel. (314) 335-4000 Fax (314) 335-5104

PROJECT: NFSS - USACE - BUFFALO DISTRICT

LOCATION: BLDG. 401

COLLECTOR: L. MANN

	SAMPLE NUMBER	DESCRIPTION	SAMPLE TYPE	DATE	PLM NYS NOB										REMARKS
X	401-85-47	GLUE - BROWN	BULK	1-24-02	✓										
X	401-83-45	GLUE - BROWN	"	"	✓										
X	401-82-54	" "	"	"	✓										
X	401-84-46	" "	"	"	✓										
X	401-81-53	" "	"	"	✓										
•	401-41-36	STAIR TREAD / MASTIC	"	"	✓										
•	401-39-34	" " "	"	"	✓										
•	401-40-35	" " "	"	"	✓										
X	401-46-38	FLOOR TILE / MASTIC	"	"	✓										
X	401-43-43	" "	"	"	✓										
X	401-16-14	WALL BOARD	"	"	✓										
X	401-17-15	" "	"	"	✓										
X	401-61-57	" "	"	"	✓										
X	401-62-59	" "	"	"	✓										
•	~~401-28-23~~	~~" "~~	~~"~~	~~"~~	✓										

RECEIVED BY: USM 1-24-02

RELINQUISHED BY	DATE	TIME
Leo Mann III	1-24-02	1600
RELINQUISHED BY:	DATE	TIME
RECEIVED FOR LABORATORY BY:	DATE	TIME

RECEIVED BY: DATE TIME

NOTES: 48 Hour TAT. FAX RESULTS TO SKIP MANN @ 314.335.5104.
* TEM NYS NOB ALL NEGATIVE SAMPLES.

CHAIN OF CUSTODY

Jacobs Engineering
501 North Broadway
St. Louis, MO 63102
Tel. (314) 335-4000 Fax (314) 335-5104

PROJECT: NFSS - USACE - BUFFALO DISTRICT

LOCATION: BLDG. 401

COLLECTOR: L. MANN

SAMPLE NUMBER	DESCRIPTION	SAMPLE TYPE	DATE	PLM NYS NOB	REMARKS
X 401-34-29 ✓	FLOOR TILE/MASTIC	BULK	1-24-02	✓	
401-28-23 ✓	WALL BOARD	"	"	✓	
401-33-28 ✓	FLOOR TILE/MASTIC	"	"	✓	
401-32-27 ✓	" " "	"	"	✓	
X 401-48-40 ✓	" " "	"	"	✓	
X 401-21-18 ✓	" " "	"	"	✓	
401-09-09 ✓	" " "	"	"	✓	
X 401-38-33 ✓	" " "	"	"	✓	
401-06-06 ✓	WINDOW GLAZING	"	"	✓	
401-23-19 ✓	" "	"	"	✓	
401-22-19 ✓	" "	"	"	✓	
X 401-37-32 ✓	FLOOR TILE/MASTIC	"	"	✓	
X 401-42-41 ✓	" " "	"	"	✓	
401-19-16 ✓	BASE BOARD/MASTIC	"	"	✓	
401-14-12 ✓	" " "	"	"	✓	

RELINQUISHED BY: Leo Mann III — DATE: 1-24-02 — TIME: 1600

RECEIVED BY: — DATE: — TIME:

RELINQUISHED BY: — DATE: — TIME:

NOTES: 48 HOUR TAT. FAX RESULTS TO SKIP MANN @ 314.335.5104.

RECEIVED FOR LABORATORY BY: — DATE: — TIME:

* TEM NYS NOB ALL NEGATIVE SAMPLES.

CHAIN OF CUSTODY

Jacobs Engineering
501 North Broadway
St. Louis, MO 63102
Tel. (314) 335-4000 Fax (314) 335-5104

PROJECT: NFSS - USACE - BUFFALO DISTRICT

LOCATION: BLDG. 401

COLLECTOR: L. MANN

SAMPLE NUMBER	DESCRIPTION	SAMPLE TYPE	DATE	PLM NYS NOB	REMARKS
X 401-15-13 ✓	FLOOR TILE/MASTIC	BULK	1-24-02	✓	
X 401-20-17 ✓	" " "	"	"	✓	
X 401-02-02 ✓	" " "	"	"	✓	
X 401-04-04 ✓	BASE BOARD/MASTIC	"	"	✓	
401-26-20 ✓	BLIND STRAPS	"	"	✓	
401-25-20 ✓	" "	"	"	✓	
401-24-20 ✓	" "	"	"	✓	
X 401-27-22 ✓	FLOOR TILE/MASTIC	"	"	✓	
X 401-01-01 ✓	" " "	"	"	✓	
X 401-03-03 ✓	" " "	"	"	✓	
X 401-07-07 ✓	" " "	"	"	✓	
X 401-08-08 ✓	BASE BOARD/MASTIC	"	"	✓	
401-05-05 ✓	" " "	"	"	✓	
X 401-53-49 ✓	FLOOR TILE/MASTIC	"	"	✓	
X 401-54-52 ✓	" " "	"	"	✓	

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Theo J. Mann III	1-24-02	1600			
RELINQUISHED BY:	DATE	TIME	NOTES: 48 HOUR TAT. FAX RESULTS TO SKIP MANN @ 314.335.5104. * TEM NYS NOB ALL NEGATIVE SAMPLES.		
RECEIVED FOR LABORATORY BY:	DATE	TIME			

CHAIN OF CUSTODY

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501 North Broadway
St. Louis, MO 63102
Tel. (314) 335-4000 Fax (314) 335-5104

PROJECT: NFSS-USACE- BUFFALO DISTRICT

LOCATION: BLDG. 401

COLLECTOR: L. MANN

SAMPLE NUMBER	DESCRIPTION	SAMPLE TYPE	DATE	PLM NYS NOB										REMARKS
X 401-52-48 ✓	FLOOR TILE / MASTIC	BULK	1-24-02	✓										
X 401-66-64 ✓	FLEX CONNECTOR	"	"	✓										
401-68-65 ✓	" "	"	"	✓										
401-67-64 ✓	" "	"	"	✓										

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Leo J. Mann III	1-24-02	1600			
RELINQUISHED BY:	DATE	TIME	NOTES: 48 HR TAT. FAX RESULTS TO SKIP MANN @ 314, 335. 5104:		
RECEIVED FOR LABORATORY BY:	DATE	TIME	* TEM NYS NOB ALL NEGATIVE SAMPLES		

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Phone: (856) 858-4800 Fax: (856) 858-4960 Email: ssiegel@EMSL.com

Attn:	Skip Mann Jacobs Engineering 1 Financial Plaza 501 N. Broadway St. Louis, MO 63102	Customer ID:	SVER55
		Customer PO:	
		Received:	01/25/02 7:24 AM
Fax:	(314) 335-5104 Phone: 314-616-2850		
Project:	**NSFS-USACE-BUFFALO DISTRICT/BLDG 401**	EMSL Order:	040201084
		EMSL Project ID:	
		Analysis Date	1/25/2002

Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via the NY State ELAP 198.1 Method

SAMPLE ID	DESCRIPTION	APPEARANCE	MATRIX MATERIAL	NON-ASBESTOS FIBERS	ASBESTOS TYPES		TOTAL ASBESTOS
401-85-47 040201084-0001		Brown Non-Fibrous Homogeneous	100.0	None	<1	Anthophyllite	<1
401-83-45 040201084-0002		Brown Non-Fibrous Homogeneous	99.4	None	<1	Anthophyllite	<1
401-82-54 040201084-0003		Brown Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected	
401-84-46 040201084-0004		Brown Non-Fibrous Homogeneous	99.2	None	<1	Anthophyllite	<1
401-81-53 040201084-0005		Brown Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected	
401-41-36 040201084-0006		Beige Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected	
401-39-34 040201084-0007		Beige Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected	
401-40-35 040201084-0008		Beige Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected	
401-46-38 040201084-0009		Green Non-Fibrous Homogeneous	93.8	None	6.2	Chrysotile	6.2

Dave Poitras
Analys

Stephen Siegel, CIH
or other approved signatory

Polarized Light Microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used to claim product endorsement by NVLAP nor any agency of the United States Government.

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Project: **NSFS-USACE-BUFFALO DISTRICT/BLDG 401**

Customer ID: SVER55
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Received: 01/25/02 7:24 AM

EMSL Order: 040201084
EMSL Project ID:
Analysis Date 1/25/2002

Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via the NY State ELAP 198.1 Method

SAMPLE ID	DESCRIPTION	APPEARANCE	MATRIX MATERIAL	NON-ASBESTOS FIBERS	ASBESTOS TYPES		TOTAL ASBESTOS
401-43-43 040201084-0010		Brown Non-Fibrous Homogeneous	85.8	None	14.2	Chrysotile	14.2
401-16-14 040201084-0011		Gray Non-Fibrous Homogeneous	90.4	None	9.6	Chrysotile	9.6
401-17-15 040201084-0012		Gray Non-Fibrous Homogeneous	81.5	None	18.5	Chrysotile	18.5
401-61-57 040201084-0013		Gray Non-Fibrous Homogeneous	85.6	None	14.4	Chrysotile	14.4
401-62-59 040201084-0014		Gray Non-Fibrous Homogeneous	72.8	None	27.2	Chrysotile	27.2
401-34-29/TILE 040201084-0015		White/Pink Non-Fibrous Homogeneous	73.8	None	26.2	Chrysotile	26.2
401-34-29/MASTIC 040201084-0049		Brown Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1
401-28-23 040201084-0016		Gray Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected	
401-33-28/TILE 040201084-0017		White Non-Fibrous Homogeneous	99.5	None	<1	Chrysotile	<1

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Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via the NY State ELAP 198.1 Method

SAMPLE ID / DESCRIPTION	APPEARANCE	MATRIX MATERIAL	NON-ASBESTOS FIBERS	ASBESTOS TYPES		TOTAL ASBESTOS
401-33-28/MASTIC *040201084-0050*	Brown Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1
401-32-27/TILE *040201084-0018*	Beige Non-Fibrous Homogeneous	99.3	None	<1	Chrysotile	<1
401-32-27/MASTIC *040201084-0055*	Brown Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected		
401-48-40 *040201084-0019*	Black Non-Fibrous Homogeneous	92.1	None	7.9	Chrysotile	7.9
401-21-18 *040201084-0020*	Black Non-Fibrous Homogeneous	85.8	None	14.2	Chrysotile	14.2
401-09-09 *040201084-0021*	Black Non-Fibrous Homogeneous	72.1	None	27.9	Chrysotile	27.9
401-38-33 *040201084-0022*	Black Non-Fibrous Homogeneous	71.4	None	28.6	Chrysotile	28.6
401-06-06 *040201084-0023*	Gray Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1
401-23-19 *040201084-0024*	Gray Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1

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		EMSL Project ID:	
		Analysis Date	1/25/2002

Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via the NY State ELAP 198.1 Method

SAMPLE ID	DESCRIPTION	APPEARANCE	MATRIX MATERIAL	NON-ASBESTOS FIBERS	ASBESTOS TYPES		TOTAL ASBESTOS
401-22-19 *040201084-0025*		Gray Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1
401-37-32 *040201084-0026*		Black Non-Fibrous Homogeneous	70.8	None	29.2	Chrysotile	29.2
401-42-41/TILE *040201084-0027*		Orange Non-Fibrous Homogeneous	54.2	None	45.8	Chrysotile	45.8
401-42-41/MASTIC *040201084-0052*		Black Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1
401-19-16 *040201084-0028*		Black Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected		
401-14-12 *040201084-0029*		Black Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected		
401-15-13 *040201084-0030*		Green Non-Fibrous Homogeneous	80.6	None	19.4	Chrysotile	19.4
401-20-17 *040201084-0031*		Green Non-Fibrous Homogeneous	70.6	None	29.4	Chrysotile	29.4
401-02-02/TILE *040201084-0032*		Green Non-Fibrous Homogeneous	97.1	None	2.9	Chrysotile	2.9

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Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via the NY State ELAP 198.1 Method

SAMPLE ID	DESCRIPTION	APPEARANCE	MATRIX MATERIAL	NON-ASBESTOS FIBERS	ASBESTOS TYPES		TOTAL ASBESTOS
401-02-02/MASTIC 040201084-0003		Black Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1
401-04-04 040201084-0033		Black Non-Fibrous Homogeneous	90.5	None	9.5	Chrysotile	9.5
401-26-20 040201084-0034		Beige Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1
401-25-20 040201084-0035		Beige Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1
401-24-20 040201084-0036		Beige Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1
401-27-22 040201084-0037		Green Non-Fibrous Homogeneous	75.5	None	24.5	Chrysotile	24.5
401-01-01 040201084-0038		Green Non-Fibrous Homogeneous	76.0	None	24.0	Chrysotile	24.0
401-03-03 040201084-0039		Green Non-Fibrous Homogeneous	72.8	None	27.2	Chrysotile	27.2
401-07-07 040201084-0040		Black Non-Fibrous Homogeneous	73.5	None	26.5	Chrysotile	26.5

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Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via the NY State ELAP 198.1 Method

SAMPLE ID	DESCRIPTION	APPEARANCE	MATRIX MATERIAL	NON-ASBESTOS FIBERS	ASBESTOS TYPES		TOTAL ASBESTOS
401-08-08 *040201084-0041*		Black Non-Fibrous Homogeneous	74.8	None	25.2	Chrysotile	25.2
401-05-05 *040201084-0042*		Black Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1
401-53-49 *040201084-0043*		Red Non-Fibrous Homogeneous	71.1	None	28.9	Chrysotile	28.9
401-54-52 *040201084-0044*		Red Non-Fibrous Homogeneous	67.9	None	32.1	Chrysotile	32.1
401-52-48/TILE *040201084-0045*		Red Non-Fibrous Homogeneous	83.7	None	16.3	Chrysotile	16.3
401-52-48/MASTIC *040201084-0054*		Brown Non-Fibrous Homogeneous	95.5	None	4.5	Chrysotile	4.5
401-66-64 *040201084-0046*		Green Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1
401-68-65 *040201084-0047*		Green Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1
401-67-64 *040201084-0048*		Green Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1

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EMSL Project ID:
Analysis Date 1/28/2002

Asbestos Analysis of Non-Friable Organically Bound materials by Transmission Electron Microscopy via NYS ELAP Method 198.4

SAMPLE ID	DESCRIPTION	APPEARANCE	MATRIX MATERIAL	NON-ASBESTOS FIBERS	ASBESTOS TYPES		TOTAL ASBESTOS
401-85-47 *040201084-0056*		Brown Non-Fibrous Homogeneous	100.0	None	<1	Anthophyllite	<1
401-83-45 *040201084-0057*		Brown Non-Fibrous Homogeneous	100.0	None	<1	Anthophyllite	<1
401-82-54 *040201084-0058*		Brown Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected	
401-84-46 *040201084-0059*		Brown Non-Fibrous Homogeneous	100.0	None	<1	Anthophyllite	<1
401-81-53 *040201084-0060*		Brown Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected	
401-41-36 *040201084-0061*		Beige Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected	
401-39-34 *040201084-0062*		Beige Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected	
401-40-35 *040201084-0063*		Brown Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected	
401-34-29/MASTIC *040201084-0064*		Brown Non-Fibrous Homogeneous	90.5	None	9.5	Chrysotile	9.5

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EMSL Order: 040201084
EMSL Project ID:
Analysis Date 1/28/2002

Asbestos Analysis of Non-Friable Organically Bound materials by Transmission Electron Microscopy via NYS ELAP Method 198.4

SAMPLE ID	DESCRIPTION	APPEARANCE	MATRIX MATERIAL	NON-ASBESTOS FIBERS	ASBESTOS TYPES		TOTAL ASBESTOS
401-28-23 *040201084-0065*		Beige Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected		
401-33-28/TILE *040201084-0066*		Orange Non-Fibrous Homogeneous	91.5	None	8.5	Chrysotile	8.5
401-33-28/MASTIC *040201084-0067*		Brown Non-Fibrous Homogeneous	97.4	None	2.6	Chrysotile	2.6
401-32-27/TILE *040201084-0068*		Beige Non-Fibrous Homogeneous	80.2	None	19.8	Chrysotile	19.8
401-32-27/MASTIC *040201084-0069*		Brown Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected		
401-06-06 *040201084-0070*		Gray Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1
401-23-19 *040201084-0071*		Gray Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1
401-22-19 *040201084-0072*		Gray Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1
401-42-41/MASTIC *040201084-0073*		Black Non-Fibrous Homogeneous	100.0	None	<1	Chrysotile	<1

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Phone: (856) 858-4800 Fax: (856) 858-4960 Email: ssiegel@EMSL.com

Attn: Skip Mann
Jacobs Engineering
1 Financial Plaza
501 N. Broadway
St. Louis, MO 63102
Fax: (314) 335-5104 Phone: 314-616-2850
Project: **NSFS-USACE-BUFFALO DISTRICT/BLDG 401**

Customer ID: SVER55
Customer PO:
Received: 01/25/02 7:24 AM

EMSL Order: 040201084
EMSL Project ID:
Analysis Date 1/28/2002

Asbestos Analysis of Non-Friable Organically Bound materials by Transmission Electron Microscopy via NYS ELAP Method 198.4

SAMPLE ID	DESCRIPTION	APPEARANCE	MATRIX MATERIAL	NON-ASBESTOS FIBERS	ASBESTOS TYPES	TOTAL ASBESTOS
401-19-16 *040201084-0074*		Black Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
401-14-12 *040201084-0075*		Black Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
401-02-02/MASTIC *040201084-0076*		Black Non-Fibrous Homogeneous	100.0	None	<1 Chrysotile	<1
401-26-20 *040201084-0077*		Beige Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
401-25-20 *040201084-0078*		Beige Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
401-24-20 *040201084-0079*		Beige Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
401-05-05 *040201084-0080*		Black Non-Fibrous Homogeneous	100.0	None	<1 Chrysotile	<1
401-66-64 *040201084-0081*		Green Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
401-68-65 *040201084-0082*		Green Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	

Steve Siegel
Analys

Stephen Siegel, CIH
or other approved signatory

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Asbestos Analysis of Non-Friable Organically Bound materials by Transmission Electron Microscopy via NYS ELAP Method 198.4

SAMPLE ID	DESCRIPTION	APPEARANCE	MATRIX MATERIAL	NON-ASBESTOS FIBERS	ASBESTOS TYPES	TOTAL ASBESTOS
401-67-64		Green	100.0	None	No Asbestos Detected	
040201084-0063		Non-Fibrous Homogeneous				

Steve Siegel
Analys

Stephen Siegel, CIH
or other approved signatory

Jacobs Engineering
501 North Broadway
St. Louis, MO 63102
Tel. (314) 335-4000 Fax (314) 335-5104

CHAIN OF CUSTODY

PROJECT: NFSS-USACE-Buffalo District
LOCATION: Bldg. 401
COLLECTOR: L. Mann

SAMPLE NUMBER	DESCRIPTION	SAMPLE TYPE	DATE	PLM/TEM/Friable	REMARKS
x401-71-67 ✓	Boiler Insulation	Bulk	1/24/02		
x401-72-68 ✓	↓	↓	↓		
x401-73-69 ✓	↓	↓	↓		
x401-55-53 ✓	12X12 Acoustic Tile	↓	↓		
x401-56-54 ✓	↓	↓	↓		
x401-57-55 ✓	↓	↓	↓		
x401-75-71 ✓	Foam Insulation	↓	↓		
x401-76-71 ✓	↓	↓	↓		
x401-77-71 ✓	↓	↓	↓		
x401-63-60 ✓	Tank Insulation	↓	↓		
x401-64-61 ✓	↓	↓	↓		
x401-65-62 ✓	↓	↓	↓		
x401-10-10 DUP ✓	Pipe Insulation	↓	↓		
x401-11-11 ✓	↓	↓	↓		

RELINQUISHED BY: Leo J Mann III	DATE 1-24-02	TIME 1600	RECEIVED BY:	DATE	TIME
RELINQUISHED BY:	DATE	TIME	NOTES: 48 HOUR TAT. FAX RESULTS TO SKIP MANN @ 314.335.5104		
RECEIVED FOR LABORATORY BY:	DATE	TIME			

Jacobs Engineering
501 North Broadway
St. Louis, MO 63102
Tel. (314) 335-4000 Fax (314) 335-5104

CHAIN OF CUSTODY

PROJECT: NFSS - USACE - Buffalo District
LOCATION: Bldg. 401
COLLECTOR: L. Mann

SAMPLE NUMBER	DESCRIPTION	SAMPLE TYPE	DATE	PLM/AHS/Friable	REMARKS
X401-12-50 ✓	Mudded Fitting	Bulk	1/24/02		
X401-13-51 ✓	↓	↓	↓	↓	
X401-58-56 ✓	Drywall / Joint Compound				
X401-59-56 ✓	↓				
X401-60-58 ✓					
X401-18-21 ✓	Pipe Insulation				
X401-35-30 ✓	↓				
X401-36-31 ✓					
X401-70-63 ✓					
X401-69-66 ✓					
X401-74-70 ✓	↓				
X401-29-24 ✓	Plaster Ceiling				
X401-30-25 ✓	↓				
X401-31-26 ✓	↓	↓	↓	↓	

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Leo M Mann III	1-24-02	1600			
RELINQUISHED BY:	DATE	TIME	NOTES: 48 Hour TAT. FAX RESULTS TO SKIP MANN @ 314.335.5104		
RECEIVED FOR LABORATORY BY:	DATE	TIME			

Jacobs Engineering
501 North Broadway
St. Louis, MO 63102
Tel. (314) 335-4000 Fax (314) 335-5104

CHAIN OF CUSTODY

PROJECT: NFSS-USACE-Buffalo District
LOCATION: Bldg. 401
COLLECTOR: L. Mann

SAMPLE NUMBER	DESCRIPTION	SAMPLE TYPE	DATE	PLM/NYS/Friable	REMARKS
*401-44-44	Plaster Ceiling	Bulk	1/24/02		
*401-45-37	↓				
*401-48-39	↓				
*401-78-72	Plaster Walls				
*401-79-73	↓				
*401-80-74	↓				
*401-49-45	12x12 Acoustic Ceiling				
*401-50-46	↓				
*401-51-47	↓				

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Leo J. Mann III	1-24-02	1600			
RELINQUISHED BY:	DATE	TIME	NOTES: 48 Hour TAT, FAX RESULTS to SKIP MANN @ 314.335.5104.		
RECEIVED FOR LABORATORY BY:	DATE	TIME			

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Phone: (856) 858-4800 Fax: (856) 858-4960 Email: ssiegel@EMSL.com

Attn:	Skip Mann Jacobs Engineering 1 Financial Plaza 501 N. Broadway St. Louis, MO 63102	Customer ID:	SVER55
		Customer PO:	
		Received:	01/25/02 7:25 AM
Fax:	(314) 335-5104 Phone: 314-616-2850		
Project:	**NFSS-USACE-BUFFALO DISTRICT/BLDG. 401**	EMSL Order:	040201087
		EMSL Project ID:	
		Analysis Date:	1/25/02

Asbestos Analysis of Bulk Materials by PLM via the NY State ELAP 198.1 Method

Sample	Location	Appearance	Treatment	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
401-71-67 *040201087-0001*		Gray/Brown/Pink Fibrous Heterogeneous	Teased Dissolved	1.00% Cellulose 65.00% Min. Wool	34.00% Non-fibrous (other)	**None Detected**
401-71-68 *040201087-0002*		Gray/Rust/Silver Fibrous Heterogeneous	Teased Dissolved	5.00% Cellulose 20.00% Min. Wool 1.00% Synthetic	34.00% Non-fibrous (other)	**40.00% Chrysotile**
				COC LISTS AS 401-71-68 - SAMPLES READS 401-72-68		
401-73-69 *040201087-0003*		Gray/Silver/Tan Fibrous Heterogeneous	Teased Dissolved	5.00% Cellulose 30.00% Min. Wool <1% Synthetic	34.20% Non-fibrous (other)	**30.80% Chrysotile**
401-55-53 *040201087-0004*		Gray/White Fibrous Heterogeneous	Teased	97.00% Cellulose	3.00% Non-fibrous (other)	**None Detected**
401-56-54 *040201087-0005*		Tan/White Fibrous Heterogeneous	Teased	97.00% Cellulose	3.00% Non-fibrous (other)	**None Detected**
401-57-55 *040201087-0006*		Tan/White/Pink Fibrous Heterogeneous	Teased	97.00% Cellulose	3.00% Non-fibrous (other)	**None Detected**
401-75-71 *040201087-0007*		Gray/White Non-Fibrous Heterogeneous	Dissolved	<1% Cellulose	100.00% Non-fibrous (other)	**None Detected**
401-76-71 *040201087-0008*		Gray/White Non-Fibrous Heterogeneous	Dissolved	<1% Cellulose	100.00% Non-fibrous (other)	**None Detected**
401-77-71 *040201087-0009*		Gray/White Non-Fibrous Heterogeneous	Dissolved	<1% Cellulose	100.00% Non-fibrous (other)	**None Detected**

Scott Combs
Analyst

Stephen Siegel, CIH
or other approved signatory

PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Negative PLM results cannot be guaranteed. Samples reported as <1% or none detected should be tested with TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government.
nalysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872

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Attn: Skip Mann
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1 Financial Plaza
501 N. Broadway
St. Louis, MO 63102
Fax: (314) 335-5104 Phone: 314-616-2850
Project: **NFSS-USACE-BUFFALO DISTRICT/BLDG. 401**

Customer ID: SVER55
Customer PO:
Received: 01/25/02 7:25 AM

EMSL Order: 040201087
EMSL Project ID:
Analysis Date: 1/25/02

Asbestos Analysis of Bulk Materials by PLM via the NY State ELAP 198.1 Method

Sample	Location	Appearance	Treatment	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
401-63-60 *040201087-0010*		Gray/Blue Fibrous Heterogeneous	Teased Dissolved	1.00% Cellulose 35.00% Min. Wool	40.50% Non-fibrous (other)	**23.50% Chrysotile**
401-64-61 *040201087-0011*		Gray/Blue Fibrous Heterogeneous	Teased Dissolved	<1% Cellulose 35.00% Min. Wool	40.00% Non-fibrous (other)	**25.00% Chrysotile**
401-65-62 *040201087-0012*		Gray/Blue Fibrous Heterogeneous	Teased Dissolved	1.00% Cellulose 40.00% Min. Wool	40.00% Non-fibrous (other)	**19.00% Chrysotile**
401-10-10 *040201087-0013*		Various Fibrous Heterogeneous	Teased	5.00% Cellulose 90.00% Glass 1.00% Synthetic	4.00% Non-fibrous (other)	**None Detected**
401-11-11 *040201087-0014*		Various Fibrous Heterogeneous	Teased	5.00% Cellulose 90.00% Glass 1.00% Synthetic	4.00% Non-fibrous (other)	**None Detected**
401-12-50 *040201087-0015*		Gray/Tan/Red Fibrous Heterogeneous	Teased	20.00% Cellulose 25.00% Min. Wool 1.00% Synthetic	54.00% Non-fibrous (other)	**None Detected**
401-13-51 *040201087-0016*		Various Fibrous Heterogeneous	Teased Dissolved	40.00% Cellulose 25.00% Min. Wool 2.00% Synthetic	24.30% Non-fibrous (other)	**8.70% Chrysotile**
401-58-56 *040201087-0017*		Gray/Brown/Green Fibrous Heterogeneous	Teased Dissolved	30.00% Cellulose	69.50% Non-fibrous (other)	**0.50% Chrysotile**
401-59-56 *040201087-0018*		Gray/Brown/Green Fibrous Heterogeneous	Teased Dissolved	30.00% Cellulose	69.25% Non-fibrous (other)	**0.75% Chrysotile**

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Analyst

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Customer ID: SVER55
Customer PO:
Received: 01/25/02 7:25 AM

EMSL Order: 040201087
EMSL Project ID:
Analysis Date: 1/25/02

Asbestos Analysis of Bulk Materials by PLM via the NY State ELAP 198.1 Method

Sample	Location	Appearance	Treatment	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
401-60-58 *040201087-0019*		Gray/Brown/Green Fibrous Heterogeneous	Teased Dissolved	45.00% Cellulose	54.50% Non-fibrous (other)	**0.50% Chrysotile**
401-18-21 *040201087-0020*		White/Tan/Gray Fibrous Heterogeneous	Teased Dissolved	10.00% Cellulose 2.00% Synthetic	44.45% Non-fibrous (other)	**7.27% Amosite** **30.80% Chrysotile** **5.48% Crocidolite**
401-35-30 *040201087-0021*		White/Gray Fibrous Heterogeneous	Teased Dissolved	5.00% Cellulose 1.00% Synthetic	54.34% Non-fibrous (other)	**6.35% Amosite** **28.60% Chrysotile** **4.71% Crocidolite**
401-36-31 *040201087-0022*		White/Tan/Gray Fibrous Heterogeneous	Teased Dissolved	10.00% Cellulose 1.00% Synthetic	40.30% Non-fibrous (other)	**4.30% Amosite** **44.40% Chrysotile**
401-70-63 *040201087-0023*		Gray/Blue/Brown Fibrous Heterogeneous	Teased Dissolved	15.00% Cellulose 3.00% Synthetic	54.84% Non-fibrous (other)	**8.16% Amosite** **19.00% Chrysotile**
401-69-66 *040201087-0024*		Gray/Red/Brown Fibrous Heterogeneous	Teased Dissolved	10.00% Cellulose 1.00% Synthetic	51.45% Non-fibrous (other)	**28.60% Amosite** **4.40% Chrysotile** **4.55% Crocidolite**
401-74-70 *040201087-0025*		Gray/Blue/Tan Fibrous Heterogeneous	Teased Dissolved	15.00% Cellulose 1.00% Synthetic	44.70% Non-fibrous (other)	**21.10% Amosite** **18.20% Chrysotile**
401-29-24 *040201087-0026*		Gray/Tan/White Non-Fibrous Heterogeneous	Crushed Dissolved	3.00% Cellulose <1% Glass	97.00% Non-fibrous (other)	**None Detected**
401-30-25 *040201087-0027*		Gray/Tan/Rust Non-Fibrous Heterogeneous	Crushed Dissolved	3.00% Cellulose 1.00% Glass	96.00% Non-fibrous (other)	**None Detected**

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or other approved signatory

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EMSL Order: 040201087
EMSL Project ID:
Analysis Date: 1/25/02

Asbestos Analysis of Bulk Materials by PLM via the NY State ELAP 198.1 Method

Sample	Location	Appearance	Treatment	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
401-31-26 *040201087-0028*		Gray/Tan/Rust Non-Fibrous Heterogeneous	Crushed Dissolved	3.00% Cellulose <1% Glass	97.00% Non-fibrous (other)	**None Detected**
401-44-44 *040201087-0029*		Gray/Tan/Rust Non-Fibrous Heterogeneous	Crushed Dissolved	3.00% Cellulose 1.00% Glass	96.00% Non-fibrous (other)	**None Detected**
401-45-37 *040201087-0030*		Gray/Tan/Rust Non-Fibrous Heterogeneous	Crushed Dissolved	3.00% Cellulose <1% Glass	97.00% Non-fibrous (other)	**None Detected**
401-46-39 *040201087-0031*		Gray/Tan/Rust Non-Fibrous Heterogeneous	Crushed Dissolved	3.00% Cellulose <1% Glass	97.00% Non-fibrous (other)	**None Detected**
401-78-72 *040201087-0032*		Gray/Tan Non-Fibrous Heterogeneous	Crushed Dissolved	1.00% Cellulose <1% Glass	99.00% Non-fibrous (other)	**None Detected**
401-79-73 *040201087-0033*		Gray/Tan/Brown Non-Fibrous Heterogeneous	Crushed Dissolved	1.00% Cellulose <1% Glass	99.00% Non-fibrous (other)	**None Detected**
401-80-74 *040201087-0034*		Gray/Tan/Brown Non-Fibrous Heterogeneous	Crushed Dissolved	1.00% Cellulose <1% Glass	99.00% Non-fibrous (other)	**None Detected**
401-49-45 *040201087-0035*		Gray/White Fibrous Heterogeneous	Teased Dissolved	30.00% Cellulose 50.00% Min. Wool	20.00% Non-fibrous (other)	**None Detected**
401-50-46 *040201087-0036*		Gray/White Fibrous Heterogeneous	Teased Dissolved	30.00% Cellulose 50.00% Min. Wool	20.00% Non-fibrous (other)	**None Detected**
401-51-47 *040201087-0037*		Gray/White Fibrous Heterogeneous	Teased Dissolved	30.00% Cellulose 50.00% Min. Wool	20.00% Non-fibrous (other)	**None Detected**

Scott Combs
Analyst

Stephen Siegel, CIH
or other approved signatory

Scott Combs

Analyst

Stephen Siegel, CIH
or other approved signatory

APPENDIX 2
PHOTOGRAPHS

Baseboard and mastic

Floor Tile

Baseboard and mastic

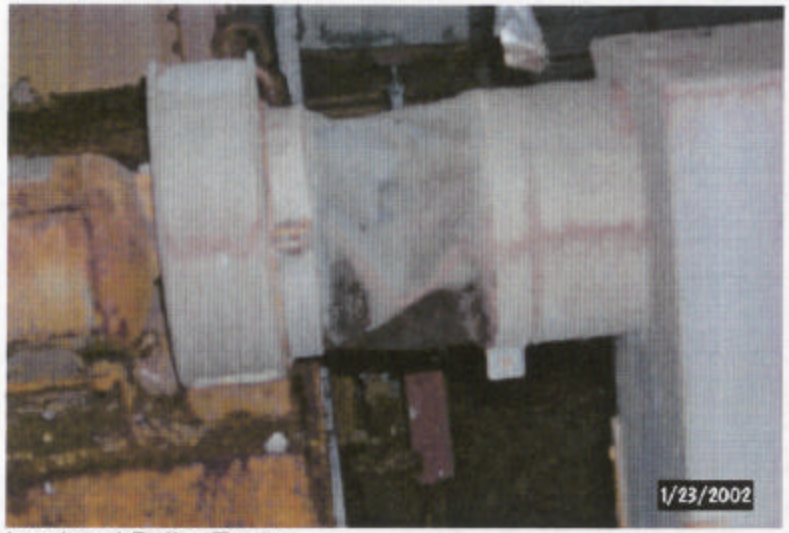
Floor Tile

Friable Boiler Tank Insulation

Friable Insulation Under HVAC Ducts

Friable Pipe Insulation

Friable Pipe Insulation



Insulated Boiler Tanks

HVAC Vibration Joint

Pipe Insulation and Two Inspectors

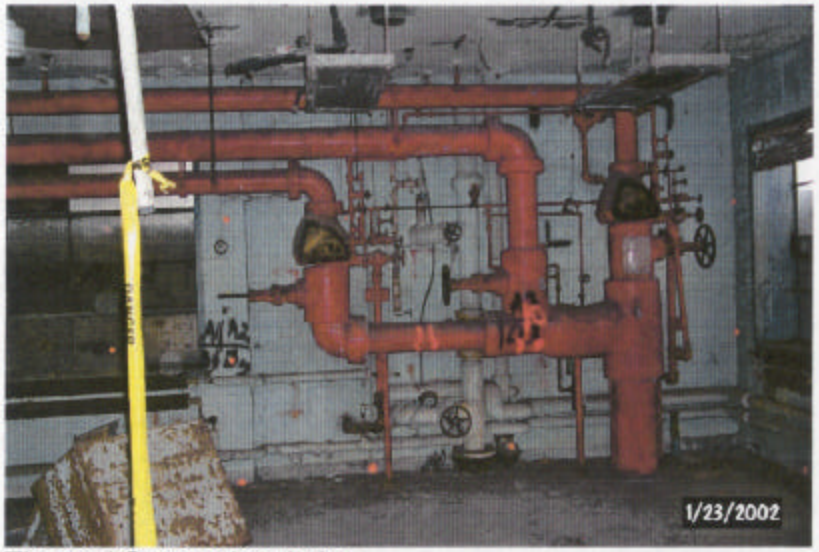
Insulated Boiler Tanks

Room With Friable Insulation Throughout

Subject Building

Subject Building

Sump Pit



Thermal System Insulation

Thermal System Insulation – (suspect pipe insulation)

Thermal System Pipe Insulation

Thermal System Pipe Insulation

Window Glazing

APPENDIX 3
JACOBS CERTIFICATIONS

MUST BE CARRIED ON ASBESTOS PROJECTS

CERTIFICATE NUMBER	
AH 01-21500	
EXPIRES	
SOCIAL SECURITY NUMBER	[redacted]
EYES: BLU	HAIR: BRO
WEIGHT: 195 lbs.	HEIGHT: 5 ft. 09 in.

ADDRESS CORRESPONDENCE TO:
(Include certificate number)
NYS Department of Labor
DOSH - License and Certificate Unit
PO Box 687, New York, NY 10014-0687

0761290

DOSH-442 (01/91)

STATE OF NEW YORK
DEPARTMENT OF LABOR
DIVISION OF SAFETY AND HEALTH

ASBESTOS HANDLING CERTIFICATE
AUTHORIZED CLASSES

D - INSPECTOR (09/02)
I - PROJECT DESIGNER (09/02)

LEO F MANN III
[redacted]

63366

RICHARD CUCOLO, Director - For the Commissioner of Labor

MUST BE CARRIED ON ASBESTOS PROJECTS

CERTIFICATE NUMBER	
AH 01-21925	
EXPIRES	
SOCIAL SECURITY NUMBER	[redacted]
EYES: BLU	HAIR: BRO
WEIGHT: 180 lbs.	HEIGHT: 5 ft. 07 in.

ADDRESS CORRESPONDENCE TO:
(include certificate number)
NYS Department of Labor
DOSH - License and Certificate Unit
PO Box 687, New York, NY 10014-0687

0768610

DOSH-442 (01/91)

STATE OF NEW YORK
DEPARTMENT OF LABOR
DIVISION OF SAFETY AND HEALTH

ASBESTOS HANDLING CERTIFICATE
AUTHORIZED CLASS
D - INSPECTOR (11/02)

JEFFREY S. NEUMANN
[redacted]
63166

RICHARD CUCOLO, Director - For the Commissioner of Labor

APPENDIX 4

RADIOLOGICAL SURVEY FIELD DATA

Asbestos Sample Descriptions

Sample No. from Contam Survey Form	Description from COC Form
1	Floor Tile/Mastic
2	Floor Tile/Mastic
3	Floor Tile/Mastic
4	Base Board/Mastic
5	Base Board/Mastic
6	Window Glazing
7	Floor Tile/Mastic
8	Base Board/Mastic
9	Floor Tile/Mastic
10	Pipe Insulation
11	Pipe Insulation
12	Base Board/Mastic
13	Floor Tile/Mastic
14	Wall Board
15	Wall Board
16	Base Board/Mastic
17	Floor Tile/Mastic
18	Floor Tile/Mastic
19	Window Glazing
20	Blind Straps
21	Pipe Insulation
22	Floor Tile/Mastic
23	Wall Board
24	Plaster Ceiling
25	Plaster Ceiling
26	Plaster Ceiling
27	Floor Tile/Mastic
28	Floor Tile/Mastic
29	Floor Tile/Mastic
30	Pipe Insulation
31	Pipe Insulation
32	Floor Tile/Mastic
33	Floor Tile/Mastic
34	Stair Tread/Mastic
35	Stair Tread/Mastic
36	Stair Tread/Mastic
37	Plaster Ceiling
38	Floor Tile/Mastic
39	Plaster Ceiling
40	Floor Tile/Mastic
41	Floor Tile/Mastic
42	Sample Not Collected
43	Floor Tile/Mastic
44	Plaster Ceiling
45	12x12 Acoustic Tile/Brown Glue
46	12x12 Acoustic Tile/Brown Glue
47	12x12 Acoustic Tile/Brown Glue
48	Floor Tile/Mastic
49	Floor Tile/Mastic
50	Mudded Fitting
51	Mudded Fitting
52	Floor Tile/Mastic
53	12x12 Acoustic Tile/Brown Glue
54	12x12 Acoustic Tile/Brown Glue
55	12x12 Acoustic Tile
56	Drywall/Joint Compound
57	Wall Board
58	Drywall/Joint Compound
59	Wall Board
60	Tank Insulation
61	Tank Insulation
62	Tank Insulation
63	Pipe Insulation
64	Flex Connector
65	Flex Connector
66	Pipe Insulation
67	Boiler Insulation
68	Boiler Insulation
69	Boiler Insulation
70	Pipe Insulation
71	Foam Insulation
72	Plaster Walls
73	Plaster Walls
74	Plaster Walls

Niagara Falls Storage Site - Lewiston, New York **CONTAMINATION SURVEY FORM** Page 1 of 2

DESCRIPTION: ASBESTOS SAMPLES SURVEYS DATE: 1-22-02 TIME: 1300-1630

PURPOSE OF SURVEY (For Release Surveys Include Recipient): RELEASE FOR OFF-SITE SHIPMENT TO ANALYTICAL LABORATORY (EMSL ANALYTICAL INC.)

INSTRUMENT DATA:	Manufacturer/Model	Serial Number	Calibration Due Date	Background	Efficiency	Correction Factor
Detector:	LUDLUM ~~2360~~ 43-89	145391	7-10-02	DIRECT SURVEYS α: 1 cpm	0.17	4.7
Meter/Scaler:	LUDLUM/2360	145469	7-09-02	β: 192 cpm	0.24	3.3
Detector:	"	"	"	REMOVABLE SURVEYS		
Meter/Scaler:	"	"	"	α: 1 cpm	0.17	5.9
Detector:				β: 192 cpm	0.24	4.2
Meter/Scaler:						
Detector:						
Meter/Scaler:						
Detector:						
Meter/Scaler:						

SURVEY RESULTS

Sample No.	Description/Location	Total β-γ Net CPM	Total β-γ dpm/100 cm²	Total α Net CPM	Total α dpm/100cm²	Removable βγ Net CPM	Removable βγ dpm/100 cm²	Removable α Net CPM	Removable α dpm/100 cm²
1		52	172	5	24	21	<134	2	<14
1QC		25	<107	1	<11	NA			
2		-28	<107	0	<11	21	<134	2	<14
3		42	139	3	14	21	<134	2	<14
4		1	<107	3	14	21	<134	2	<14
5		58	192	2	<11	6	<134	0	<14
6		15	<107	0	<11	6	<134	0	<14
7		20	<107	4	19	26	<134	-1	<14
8		18	<107	2	<11	6	<134	0	<14
9		19	<107	0	<11	6	<134	0	<14

CORRECTION FACTOR FORMULAS:

Direct: CF = 100/ Efficiency x Physical Detector Area Removable: CF = 1 / Efficiency

COMMENTS: INSTRUMENT FIELD BACKGROUNDS DETERMINED + USED

TECHNICIAN(S) SIGNATURE/DATE: [signature] 1-24-02

REVIEWER SIGNATURE/DATE: Dennis Larson 1-24-02

Niagara Falls Storage Site - Lewiston, New York **CONTAMINATION SURVEY FORM** Page _____ of ____

Page 2 of 2

DESCRIPTION: ASBESTOS SAMPLES SURVEYS DATE: 1-22-02 TIME: 1300-1630

SURVEY RESULTS

Sample No.	Description/Location	Total β-γ Net CPM	Total β-γ dpm/100 cm²	Total α Net CPM	Total α dpm/100 cm²	Removable βγ Net CPM	Removable βγ dpm/100 cm²	Removable α Net CPM	Removable α dpm/100 cm²
10		-6	<107	2	<11	17	<134	1	<14
11		5	<107	0	<11 (B)	17	<134	1	<14
12		13	<107	1	~~<11~~ <11	17	<134	1	<14
13		24	<107	0	<11	17	<134	1	<14
14		16	<107	0	<11	18	<134	0	<14
15		2	<107	0	<11	18	<134	0	<14
16		34	112	3	14	18	<134	0	<14
17		43	142	2	<11	18	<134	0	<14
18		54	179	1	<11	15	<134	0	<14
19		30	<107	0	<11	15	<134	0	<14
20		-24	<107	0	<11	15	<134	0	<14
21		-4	<107	1	<11	15	<134	0	<14
21 QC		-1	<107	0	<11	NA		(B) 1	(B) 24 <14
22		20	<107	4	19	4	<134	1	<14
23		3	<107	3	14	4	<134		

COMMENTS: CRITICAL DETECTION LEVELS (CDL): DIRECT α CDL = 11 dpm/100cm² DIRECT β CDL = 107 dpm/100cm² REMOVABLE α CDL = 14 dpm/100cm² REMOVABLE β CDL = 134 dpm/100cm²

TECHNICIAN(S) SIGNATURE/DATE: [signature] 1-24-02

REVIEWER SIGNATURE/DATE: Dennis Larson 1-24-02

Niagara Falls Storage Site - Lewiston, New York **CONTAMINATION SURVEY FORM** Page 1 of 3 16

DESCRIPTION: ASBESTOS SAMPLES SURVEYS DATE: 1-23-02 TIME: 0800-1130 (DF)

PURPOSE OF SURVEY (For Release Surveys Include Recipient): RELEASE FOR OFF-SITE SHIPMENT TO ANALYTICAL LABORATORY (EMSL ANALYTICAL INC.)

INSTRUMENT DATA:	Manufacturer/Model	Serial Number	Calibration Due Date	Background	Efficiency	Correction Factor
				DIRECT SURVEYS		
Detector:	LUDLUM / 43-89	145391	7-10-02	α 1 cpm	0.17	4.7
Meter/Scaler:	LUDLUM / 2360	145469	7-09-02	β 220 cpm	0.24	3.3
				REMOVABLE SURVEYS		
Detector:	LUDLUM / 43-89	145391	7-10-02	α 1 cpm	0.17	5.9
Meter/Scaler:	LUDLUM / 2360	145469	7-09-02	β 220 cpm	0.24	4.2
Detector:						
Meter/Scaler:						
Detector:						
Meter/Scaler:						
Detector:						
Meter/Scaler:						

SURVEY RESULTS

Sample No.	Description/Location	Total β-γ Net CPM	Total β-γ dpm/100 cm^2	Total α Net CPM	Total α dpm/100cm^2	Removable $\beta\gamma$ Net CPM	Removable $\beta\gamma$ dpm/100 cm^2	Removable α Net CPM	Removable α dpm/100 cm^2
24		-9	-30 (<114)	0	0 (<11)	-20	-84 (<144)	-1	-6 (<14)
26		17	56 (<114)	0	0 (<11)	-20	<144	-1	-6 (<14)
28		-25	-83 (<114)	3	14	-24	-101 (<144)	-1	-6 (<14)
30		-33	-109 (<114)	1	5 (<11)	-24	-101 (<144)	-1	-6 (<14)
32		12	40 (<114)	1	5 (<11)	-20	-84 (<144)	0	0 (<14)
34		28	93 (<114)	3	14	-20	-84 (<144)	0	0 (<14)
36		40	132	4	19	-16	-67 (<144)	1	6 (<14)
38		17	56 (<114)	3	14	-16	-67 (<144)	1	6 (<14)
40		16	53 (<114)	1	5 (<11)	-18	-76 (<144)	3	18
41		-16	-53 (<114)	0	0 (<11)	-18	-76 (<144)	3	18

CORRECTION FACTOR FORMULAS:

Direct: CF = 100/ Efficiency x Physical Detector Area Removable: CF = 1 / Efficiency

COMMENTS: INSTRUMENT FIELD BACKGROUNDS DETERMINED AND USED.

TECHNICIAN(S) SIGNATURE/DATE: Deanis Larson 1-24-02

REVIEWER SIGNATURE/DATE: 1-24-02

Page 2 of 3 16

DESCRIPTION: ASBESTOS SAMPLES SURVEYS DATE: 1-23-02 TIME: 0800 - 1130 (PST)

SURVEY RESULTS

Sample No.	Description/Location	Total β-γ Net CPM	Total β-γ dpm/100 cm²	Total α Net CPM	Total α dpm/100 cm²	Removable βγ Net CPM	Removable βγ dpm/100 cm²	Removable α Net CPM	Removable α dpm/100 cm²
42		12	40(<114)	1	5(<11)	-18	-76(<144)	3	18
44		-16	-53(<114)	0	0(<11)	9	38(<144)	0	0(<14)
45		108	357	1	5(<11)	29	122(<144)	0	0(<14)
46		124	410	2	9(<11)	29	122(<144)	0	0(<14)
47		58	192	2	9(<11)	29	122(<144)	0	0(<14)
48		12	40(<114)	3	14	32	134(<144)	0	0(<14)
49		94	311	0	0(<11)	32	134(<144)	0	0(<14)
49QC		73	241	0	0(<11)	NA	NA	NA	NA
52		100	331	2	9(<11)	18	76(<144)	3	18
52QC		NA	NA	NA	NA	31	130(<144)	0	0(<14)
53		-12	-40(<114)	-1	-5(<11)	18	76(<144)	3	18
53QC		NA	NA	NA	NA	31	130(<144)	0	0(<14)
54		8	26(<114)	-1	-5(<11)	18	76(<144)	3	18
54QC		NA	NA	NA	NA	31	130(<144)	0	0(<14)
55		37	122	-1	-5(<11)	18	76(<144)	3	18
55QC		NA	NA	NA	NA	31	130(<144)	0	0(<14)
56		-5	-17(<114)	3	14	18	76(<144)	-1	-6(<14)
57		-22	-73(<114)	0	0(<11)	18	76(<144)	-1	-6(<14)
57QC		0	0(<114)	1	5(<11)	NA	NA	NA	NA
58		24	79(<114)	1	5(<11)	18	76(<144)	-1	-6(<14)
59		-30	-99(<114)	0	0(<11)	18	76(<144)	-1	-6(<14)
60		-23	-76(<114)	-1	-5(<11)	21	88(<144)	0	0(<14)
60QC		NA	NA	NA	NA	-4	-17(<144)	-1	-6(<14)
61		-59	-195(<114)	2	9(<11)	21	88(<144)	0	0(<14)
61QC		NA	NA	NA	NA	-4	-17(<144)	-1	-6(<14)
62		-30	-99(<114)	2	9(<11)	21	88(<144)	0	0(<14)
62QC		-30	-99(<114)	1	5(<11)	-4	-17(<144)	-1	-6(<14)
63		-15	-50(<114)	2	9(<11)	21	88(<144)	0	0(<14)
63QC		NA	NA	NA	NA	-4	-17(<144)	-1	-6(<14)
64		-35	-116(<114)	1	5(<11)	25	105(<144)	0	0(<14)

COMMENTS: CRITICAL DETECTION LEVELS (CDL) DIRECT α CDL = 11 dpm/100 cm² DIRECT β CDL = 114 dpm/100 cm² REMOVABLE α CDL = 14 dpm/100 cm² REMOVABLE β CDL = 144 dpm/100 cm²

TECHNICIAN(S) SIGNATURE/DATE: Dennis Larson / 1-24-02 / /

REVIEWER SIGNATURE/DATE: [signature] / 1-24-02

Page 3 of 3 16

DESCRIPTION: ASBESTOS SAMPLES SURVEYS DATE: 1-23-02 TIME: 0800 - 1130 (DF)

SURVEY RESULTS

Sample No.	Description/Location	Total β-γ Net CPM	Total β-γ dpm/100 cm²	Total α Net CPM	Total α dpm/100 cm²	Removable βγ Net CPM	Removable βγ dpm/100 cm²	Removable α Net CPM	Removable α dpm/100 cm²
65		-28	-92 (<114)	7	33	25	105 (<144)	0	0 (<14)
66		-58	-191 (<114)	2	9 (<11)	25	105 (<144)	0	0 (<14)
67		18	59 (<114)	0	0 (<11)	25	105 (<144)	0	0 (<14)
68		52	172	0	0 (<11)	20	84 (<144)	1	6 (<14)
68 QC		NA	NA	NA	NA	26	109 (<144)	4	24
69		60	198	2	9 (<11)	20	84 (<144)	1	6 (<14)
69 QC		NA	NA	NA	NA	26	109 (<144)	4	24
70		-47	-155 (<114)	0	0 (<11)	20	84 (<144)	1	6 (<14)
70 QC		NA	NA	NA	NA	26	109 (<144)	4	24
71		73	241	1	5 (<11)	20	84 (<144)	1	6 (<14)
71 QC		NA	NA	NA	NA	26	109 (<144)	4	24
72		-22	-73 (<114)	2	9 (<11)	12	50 (<144)	1	6 (<14)
73		-42	-139 (<114)	-1	-5 (<11)	12	50 (<144)	1	6 (<14)
74		-14	-46 (<114)	0	0 (<11)	12	50 (<144)	1	6 (<14)
EQUIPMENT		24	79 (<114)	1	5 (<11)	26	109 (<144)	-1	-6 (<14)
" QC		16	53 (<114)	7	33	-3	-13 (<144)	0	0 (<14)
UNNUMBERED		NA	NA	NA	NA	-24	-101 (<144)	0	0 (<14)

COMMENTS:

TECHNICIAN(S) SIGNATURE/DATE: Dennis Larson / 1-24-02 /

REVIEWER SIGNATURE/DATE: [signature] / 1-24-02

Niagara Falls Storage Site - Lewiston, New York — CONTAMINATION SURVEY FORM — Page 1 of 2

DESCRIPTION: ASBESTOS SAMPLES SURVEYS — DATE: 1-23-02 TIME: 1100-1630

PURPOSE OF SURVEY (For Release Surveys Include Recipient): RELEASE FOR OFF-SITE SHIPMENT TO ANALYTICAL LABORATORY (BMSL ANALYTICAL INC.)

INSTRUMENT DATA:	Manufacturer/Model	Serial Number	Calibration Due Date	Background	Efficiency	Correction Factor (DF)
				DIRECT SURVEYS		
Detector:	LUDLUM/43-68	114929	7-10-02	α: 1 cpm	α: 0.13	α 6.1
Meter/Scaler:	LUDLUM/2360	164680	7-9-02	β: 173 cpm	β: 0.22	β 3.6
				REMOVABLE SURVEYS		
Detector:	"	"	"	α: 1 cpm	α: 0.13	α 7.7
Meter/Scaler:	"	"	"	β: 173 cpm	β: 0.22	β 4.5
Detector:						
Meter/Scaler:						
Detector:						
Meter/Scaler:						
Detector:						
Meter/Scaler:						

SURVEY RESULTS

Sample No.	Description/Location	Total β-γ Net CPM	Total β-γ dpm/100 cm²	Total α Net CPM	Total α dpm/100cm²	Removable βγ Net CPM	Removable βγ dpm/100 cm²	Removable α Net CPM	Removable α dpm/100 cm²
25		36	130	4	19	0	<139	-1	<18
27		38	137	4	19	0	<139	-1	<18
29		41	148	0	<14	-4	<139	-1	<18
31		4	<110	-1	<14	-4	<139	-1	<18
33		33	118	7	33	0	<139	0	<18
35		71	256	8	38	0	<139	0	<18
37		55	198	2	<14	4	<139	1	<18
39		45	162	6	28	4	<139	1	<18
43		41	148	3	14	2	<139	3	18
50		19	<110	4	19	32	<139	0	<18

CORRECTION FACTOR FORMULAS:

Direct: CF = 100/ Efficiency x Physical Detector Area — Removable: CF = 1 / Efficiency

COMMENTS: INSTRUMENT FIELD BACKGROUND DETERMINED AND USED

TECHNICIAN(S) SIGNATURE/DATE: [signature] 1-24-02 /

REVIEWER SIGNATURE/DATE: Jenna Lahson 1-24-02

Niagara Falls Storage Site - Lewiston, New York

CONTAMINATION SURVEY FORM

Page 2 of 2

DESCRIPTION: ASBESTOS SAMPLES SURVEYS DATE: 1-23-02 TIME: 1100-1630

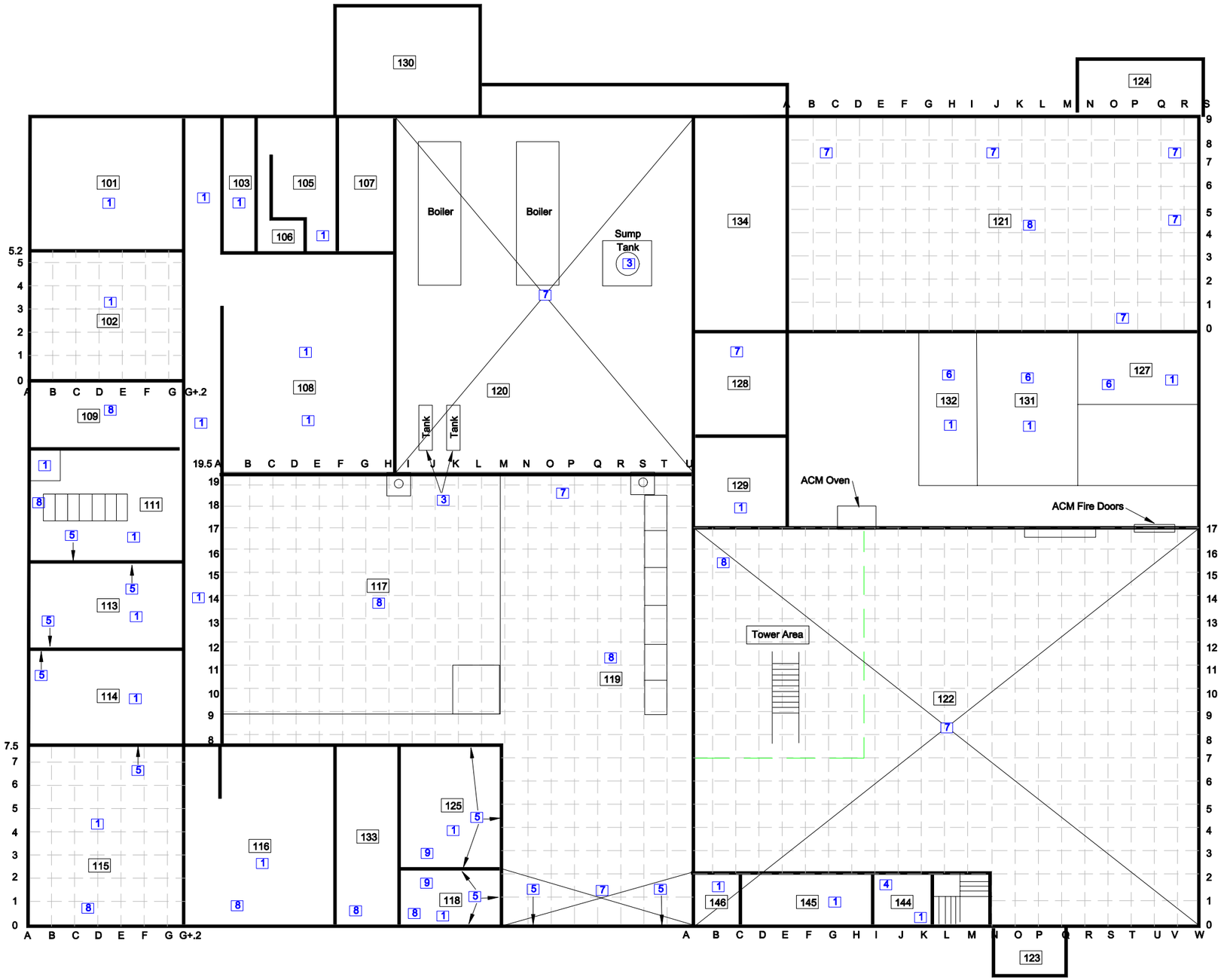
SURVEY RESULTS

Sample No.	Description/Location	Total β-γ Net CPM	Total β-γ dpm/100 cm²	Total α Net CPM	Total α dpm/100 cm²	Removable βγ Net CPM	Removable βγ dpm/100 cm²	Removable α Net CPM	Removable α dpm/100 cm²
51		21	4110<110	4	19	32	<139	0	<18

COMMENTS: CRITICAL DETECTION LEVELS (CDL): TOTAL α CDL = 14 dpm/100cm² TOTAL β CDL = 110 dpm/100cm² REMOVABLE α CDL = 18 dpm/100cm² REMOVABLE β CDL = 139 dpm/100cm²

TECHNICIAN(S) SIGNATURE/DATE: [signature] 1-24-02

REVIEWER SIGNATURE/DATE: Dennis Lawson 1-24-02



Building 401 - 1st Floor Plan
NTS

General Notes

1. See table one for asbestos containing material (ACM) types and quantities per room location.

2. ACM pipe insulation located above first floor ceilings of location 101, 102, 109, 103, 105, 107, 108. See location 250 on sheet ACML-02.

3. ACM pipe insulation located in chase walls at locations 106, 105, 107.

Legend

- [1] ACM 9"x9" Floor Tile and Mastic and associated Cove Base
- [2] ACM Boiler Insulation
- [3] ACM Tank Insulation
- [4] ACM Bagged Material/Debris
- [5] ACM Transite Wall Panels
- [6] ACM Transite Wall / Ceiling Panels
- [7] Thermal System Insulation Debris
- [8] ACM Pipe and/or Fitting Insulation
- [9] ACM Transite Pipe 10" Ø

1 Square Meter Grid Lines (Approximate 11 FT^2)

122 Room Number

NTS Not To Scale

0 16
3/4"=1'-0"

JACOBS

Building 401 First Floor Asbestos Containing Material Location Plan

Niagra falls Storage Site
Niagra Falls

07FEB02 - acml-01.DWG

Figure ACML-01

Building 401 - 2nd Floor Plan
NTS

General Notes

1. See table one for asbestos containing material (ACM) types and quantities per room location.

2. ACM pipe insulation located in Chase Walls at Locations 214, 213.

Legend

- [1] ACM 9"x9" Floor Tile and Mastic and associated Cove Base
- [2] ACM Boiler Insulation
- [3] ACM Tank Insulation
- [4] ACM Bagged Material/Debris
- [5] ACM Transite Wall Panels
- [6] ACM Transite Wall / Ceiling Panels
- [7] Thermal System Insulation Debris
- [8] ACM Pipe and/or Fitting Insulation
- [9] ACM Transite Pipe 10" Ø
- [10] ACM Pipe and/or Fitting Insulation above First Floor Ceiling
- 1 Square Meter Grid Lines (Approximate 11 FT^2)
- [122] Room Number
- NTS Not To Scale

0 16
3/4"=1'-0"

JACOBS

Building 401 Second Floor Asbestos Containing Material Location Plan

Niagra falls Storage Site
Niagra Falls

07FEB02 - acml-02.DWG | Figure ACML-02

Building 401 - 1st Floor Plan
NTS

Legend

- ▲ > 1% Asbestos Containing Material (ACM)
- ● < 1% Asbestos Non-ACM
- 1 Square Meter Grid Lines (Approximate 11 FT^2)
- 122 Room Number
- NTS Not To Scale

XXX-XX-XX
- RAD Screening #
- Asbestos Sample #
- BLDG #

0 16
3/4"=1'-0"

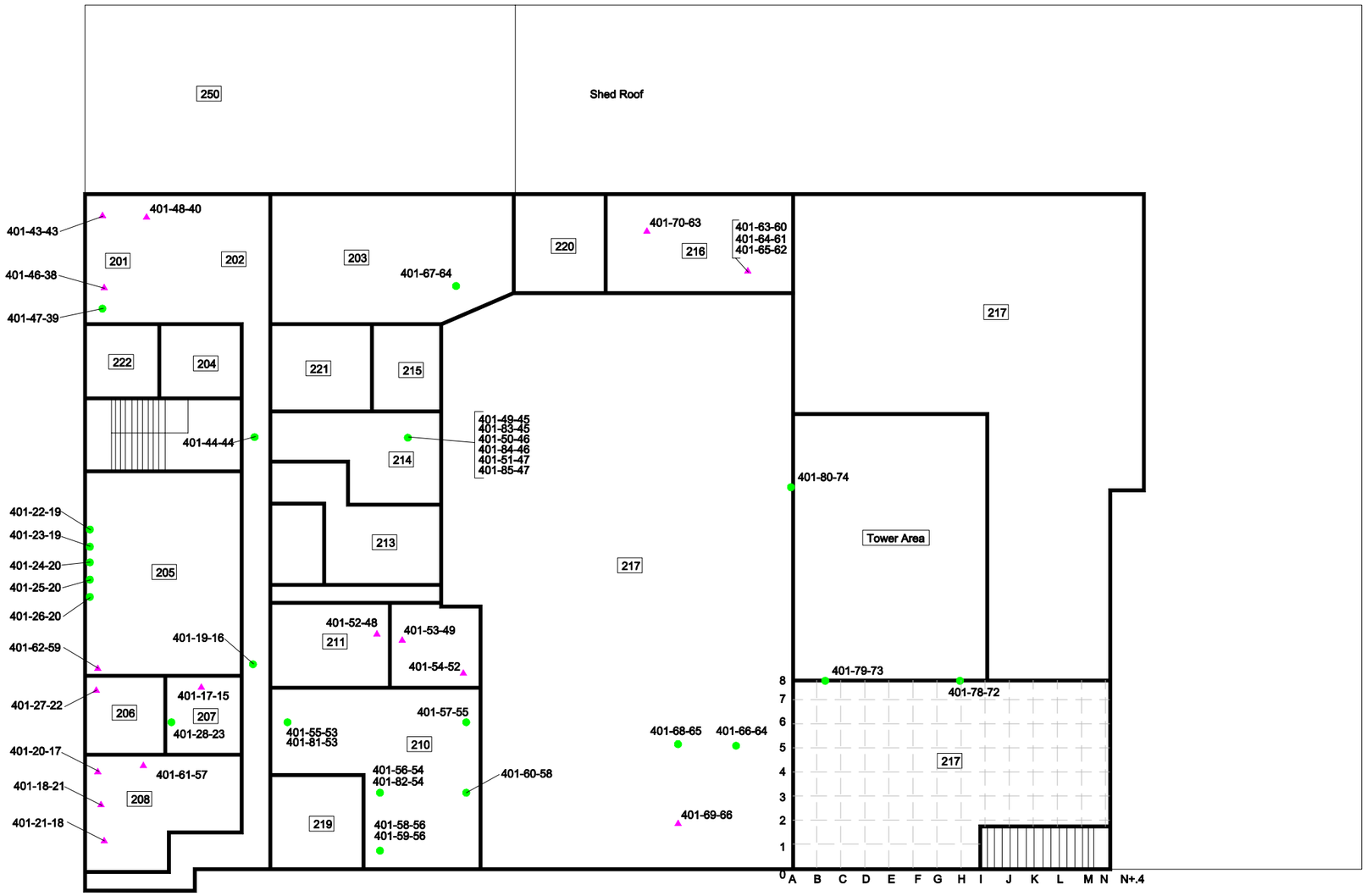
JACOBS

Building 401 First Floor Asbestos Bulk Sample Location Plan

Niagra falls Storage Site
Niagra Falls

07FEB02 - asbl-01.DWG

Figure ABSL-01



Building 401 - 2nd Floor Plan
NTS

Legend

- ▲ > 1% Asbestos Containing Material (ACM)
- ● < 1% Asbestos Non-ACM
- 1 Square Meter Grid Lines (Approximate 11 FT^2)
- 122 Room Number
- NTS Not To Scale

XXX-XX-XX
- RAD Screening #
- Asbestos Sample #
- BLDG #

0 16
3/4"=1'-0"

JACOBS

Building 401 Second Floor Asbestos Bulk Sample Location Plan

Niagra falls Storage Site
Niagra Falls

07FEB02 - asbl-02.DWG

Figure ABSL-02