



Waterton RCMP Detachment

Asbestos Abatement Project Close-Out Report

Prepared for:



Attention: Jack Pawluk, Senior Asset Manager



Prepared by:

RENEGADE HM SERVICES INC.
1145D – 44 Ave., SE
Calgary, Alberta
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November 29th, 2017

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1. INTRODUCTION

Renegade HM Services Inc. (Renegade) was retained by the Royal Canadian Mounted Police (RCMP) to perform an asbestos abatement project at the Waterton RCMP Detachment located in Waterton, Alberta.

The asbestos abatement was necessary due to upcoming renovations and improvements at the detachment location. Under RCMP-GRC Contract: 7224779, the scope of work involved the removal and disposal of the asbestos-containing (ACM) linoleum sheet flooring from within the recreation room and two (2) bedrooms located on the second floor of the detachment.

As authorized by Jack Pawluk, RCMP Senior Asset Manager, Renegade completed and submitted by email the required Notice of Project (NOP) form to Alberta Labour on November 20th, 2017 (*refer to Appendix A*). Renegade received the Acknowledgement form (*refer to Appendix B*) back from Alberta Labour on November 20th, 2017.

Renegade mobilized to site on November 22nd, 2017 and was meet by and granted access to the building by Sgt. Mark Harrison, Pincher Creek Detachment Commander. Jim Palmer, President of Renegade was provided with a key to site. On November 27th, 2017, the abatement project was completed and the assigned site key was delivered and returned to the Pincher Creek RCMP Detachment.

2. SCOPE OF WORK

The scope of the work involved performing the removal and disposal of confirmed asbestos-containing linoleum sheet flooring materials following the high-risk asbestos abatement procedures as outlined in Chapter 5 of the current Alberta Asbestos Abatement Manual.

The asbestos content of the sheet flooring was 23% Chrysotile asbestos as per the information provided the RCMP Waterton Detachment Buildings Study (dated January 2017) prepared by RKH Architecture Ltd. Refer to table and plot plan below.

Overview of Project Sample Material Containing Asbestos

Customer Project:		AS 4722, RCMP Barracks		CA Labs Project #:		CAL16128486CR	
Sample #	Layer #	Analysts	Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types		
A-3	A-3-1		Linoleum/ Bedroom/ tan linoleum	23% Chrysotile	tan linoleum		

Figure 1: Main Floor Plot Plan – Asbestos Linoleum Flooring

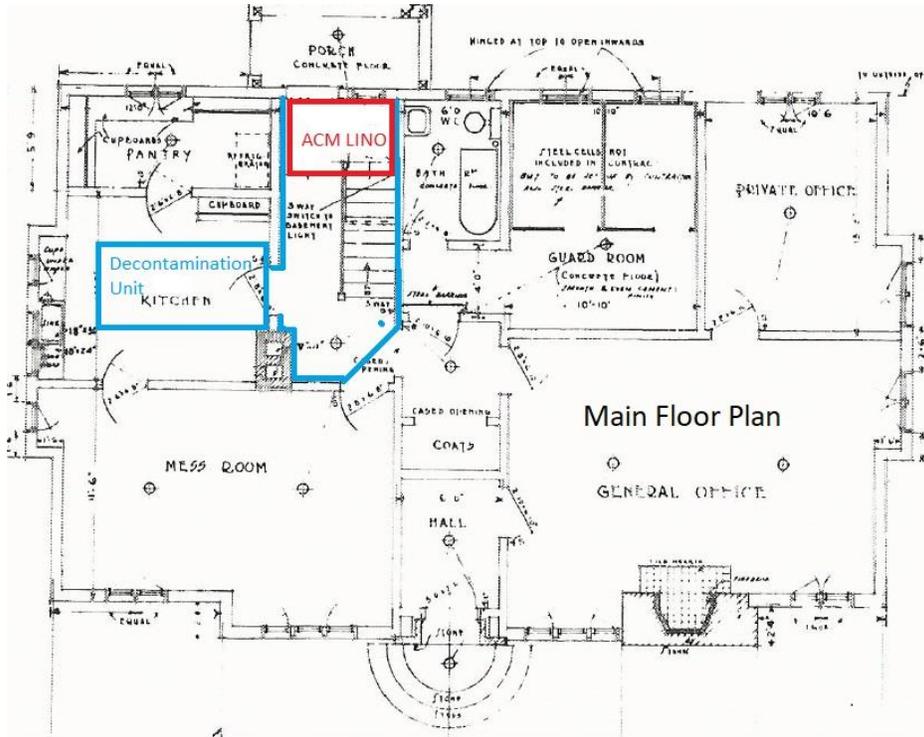
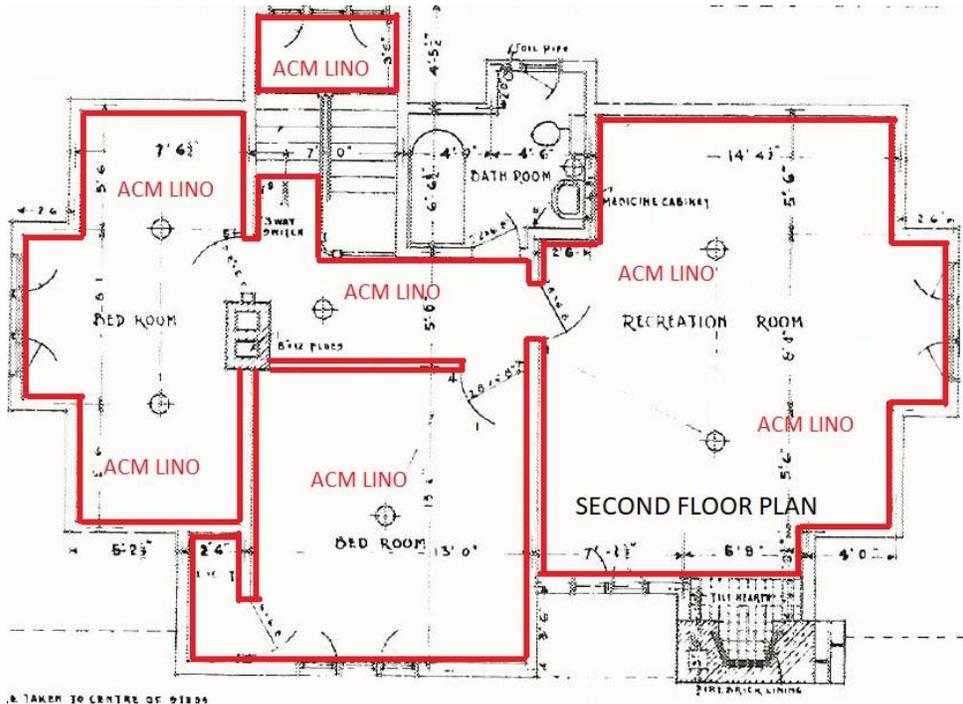


Figure 2: Second Floor Plot Plan – Asbestos Linoleum Flooring



3. SITE CONDITIONS

- a) During our initial site tour, it was discovered that the recreation room still contained house furnishings (beds, mattresses, dressers, etc.). These items were wiped with a damp rag and/or HEPA-vacuumed prior to being relocated to the main floor. (see Figure 1-4)
- b) The floor covering of the office area attached to the kitchen had been previously been abated by others. In the same office area, there was an area of the lath and plaster ceiling that had also been previously demolished by others.
- c) In the bedroom located directly across from the second-floor level washroom, there was an area of the linoleum sheet flooring had been previously removed. (see Figure 6-8) The exposed asbestos-containing paper backing had been covered with clear polyethylene sheeting with all seams and edges sealed with duct tape.
- d) The carpeting on the stairs leading to the second-floor level was suspected of possible past cross-contamination. (see Figure 9-10) The carpeting on the stairs was HEPA-vacuumed, removed and disposed of as non-contaminated waste by Renegade
- e) The linoleum sheet flooring from all second-floor rooms continued out into the connecting hallway. Upon RCMP approval, the linoleum sheeting was removed by Renegade as an extra to the contract. (see Figure 15-16)
- f) To eliminate concerns of possible past cross-contamination, Western H&S collected area air samples within each of the main floor rooms. All air samples collected on the main floor level were well below the allowable limit. Refer to *Appendix E*.

4. ABATEMENT PLAN

- a) Based on hazards identified within the pre-job hazard analysis, site-specific asbestos abatement procedures were developed by Renegades' project management team. A copy of the site-specific abatement procedures was submitted with the NOP form submitted to Alberta Labour.
- b) All HEPA-filtered equipment (vacuum & negative air units) were DOP tested by Hazmasters in Calgary prior to being transported and used on the project site. Copies of the HEPA Filtered Equipment Performance Certifications are included in *Appendix D*.
- c) Western Health and Safety Ltd. (Western H&S) provided the required third-party air monitoring and inspection services on this asbestos abatement project. Western was on site throughout the abatement project to document work practices, to

- conduct visual inspections and, to collect and analysis air samples. (*refer to Appendix E*)
- d) After background air samples were obtained within the main and second floor areas by Western H&S, an air-tight work area containment was constructed by Renegade. To avoid damaging the exist wall surfaces, a wood-frame, free standing structure was constructed inside each of the rooms and down the stairway to the main floor level. (see Figure 17-18) As additional protection, the ends of the wood members were covered with fleece rags to eliminate possible paint damages during construction.
 - e) The wood framed wall and ceiling areas of the containment were lined with reinforced polyethylene sheeting with all seams and edges sealed with duct tape and spray adhesives. To minimize damage to the painted floor trim boards and/or wall surfaces, in locations where polyethylene sheeting had to be attached directly to the painted surfaces, painters tape was installed to eliminate fastening the sheeting with the use duct tape.
 - f) Within the main floor kitchen, a 3-stage worker decontamination chamber complete with a shower was constructed and attached to the work area containment at the bottom of the stairs. All waste water generated from the shower activities was filtered through a 5-micron filter prior to disposal.
 - g) To provide and maintain negative pressure conditions within the work area for the duration of the abatement project, HEPA-filtered negative air units were installed in the recreation room and the bedroom. The air exhaust from the two (2) negative air units were vented directly to the outside of the building. Two windows were removed and plywood sheeting with 12” diameter holes was installed in the window frames to facilitate the venting of the negative air units.
 - h) On November 25th, 2017, Renegade completed the work area set up activities and a pre-contamination inspection of air-tight containment was performed by Western H&S. (see Figure 17-24) The work area was accepted and passed by Western H&S and Renegade HM Services was granted approval to begin with the asbestos abatement activities.
 - i) All abatement workers were fit tested to their assigned Powered Air Purifying Respirator (PAPR) using irritant smoke pencils. Any person entering the work area wore a PAPR as minimum respiratory protection.
 - j) Prior to entering the asbestos removal work area, all workers removed their street clothes in the Clean Room of the decontamination chamber and donned Tyvek disposable coveralls, disposal boot covers, and leather work gloves with wrists and ankles taped with duct tape.

- k) The remaining carpeting and exposed linoleum sheeting was lightly misted with amended water using an airless sprayer prior to starting any demolition or abatement activities. The floor J-molding trim and the carpeting were carefully removed first and disposed of as non-asbestos waste at the Crowsnest Picher Creek Landfill.
- l) The bulk removal of the rubber top coat of the linoleum sheeting was performed using a 120-lb electric floor scrapper. The blade of the scrapper was set at the proper depth to removal the top rubber coat and leave behind the asbestos-containing paper backing in place. (see Figure 25-28)
- m) To keep the levels of airborne asbestos fibers as low as possible, the friable asbestos-containing paper backing adhered to the wood flooring was saturated with water prior to removal. This wet removal procedure involved using 3” hand scrapers and hook knives to carefully to remove the paper backing material from the wood floor surfaces.
- n) Final cleaning of the work area involved wet wiping and HEPA-vacuuuming techniques. The wood floor surfaces were cleaned with amended water (a mild chemical floor cleaner and water solution) to remove the residual mastic adhesive. The polyethylene sheeting of the work area containment system was wet wiped. The plastic sheeting covering the heaters in each room was removed and all surfaces of the heaters were vacuumed and wet-wiped. (see Figure 29-40)
- o) Upon completion of the final cleaning activities (on November 26th 2017), Western H&S performed a final inspection of the entire work area. The work area passed the inspection and Renegade was given approval to encapsulate the work area.
- p) Using an airless sprayer, all polyethylene sheeting surfaces within the work area were sprayed with a slow drying water-based encapsulant, Childers CP240 Sealant, to lock down any possible airborne and remaining asbestos fibers. Upon completion of the encapsulation of the work area containment, the work area was left undisturbed with the negative air unit operational for the necessary settling time.
- q) On the morning of November 27th, 2017, all work areas within the Waterton RCMP Detachment passed final air clearance sampling performed by Western H&S. Refer to *Appendix E*, for copy of the Asbestos Removal Summary Letter prepared by Western H&S.
- r) The polyethylene sheeting of the work area containment was taken down following low-risk asbestos abatement procedures. All plastic sheeting was placed into labeled 6 Mil polyethylene disposal bags and sealed with dust tape. The disposal bags were washed and placed into a second disposal bag within the decontamination chamber prior to disposal.

- s) All asbestos-containing waste generated during this abatement project was double-bagged and then transported and disposed of at the Crowsnest Pincher Creek Landfill. Copies of the Waste Shipping Documents and the weigh scale tickets provided by the landfill are included in *Appendix F*.

- t) Enclosed in *Appendix G* are photographs taken during this asbestos abatement project. These photographs show the rooms of the detachment before and after the abatement activities performed by Renegade.

5. CLOSING

On November 27th, 2017, Renegade HM successfully completed the asbestos abatement project at the Pincher Creek RCMP Detachment building without incident, accident or environmental mishaps.

The site -specific removal procedures developed and implemented by Renegade on this project were successful in protecting the workers from exposure to asbestos and controlling the levels of airborne asbestos fibers during the removal and disposal of the asbestos-containing linoleum from the recreation room and two (2) second-floor bedrooms.

The results of all worker occupational air monitoring conducted over the duration of the project were well within the occupational exposure limits for the type of respiratory protection (PAPR respirator) worn by all workers.

On November 27th, 2017, the final air clearance sampling performed by Western H&S confirmed all work areas within the Waterton RCMP Detachment passed. Refer to *Appendix E*, for copy of the Asbestos Removal Summary Letter prepared by Western H&S.

All asbestos-containing waste generated during the abatement project was double-bagged and then transported and disposed of at the Crowsnest Pincher Creek Landfill. Copies of the Waste Shipping Documents and the weigh scale tickets provided by the landfill are included in *Appendix F*.

If you have any questions or concerns, please feel free to contact the undersigned at (587) 351-7460 or directly on my cell at (403) 540-8890.

Regards,



Jim Palmer, C.E.T., CSO
President

APPENDIX A
NOTICE OF PROJECT FORM

The information you provide on this form is collected under the authority of the *Occupational Health and Safety Act* and personal information is subject to the privacy provisions of the *Freedom of Information and Protection of Privacy (FOIP) Act*. If you have any questions about the collection of this information, you may contact the Occupational Health and Safety Contact Centre at 1-866-415-8690, or in Edmonton at 780-415-8690.

Alberta Occupational Health and Safety legislation (OHS Code Part 4 Section 36) requires anyone beginning an asbestos project to notify Occupational Health and Safety at least 72 hours before workers may be exposed to airborne fibres.

To notify Occupational Health and Safety, complete this form and submit it via email to HS.OHSAsbestosNotification@gov.ab.ca. For answers to questions involving asbestos projects and notification requirements, please call the Occupational Health and Safety Contact Centre at 1-866-415-8690, or in Edmonton at 780-415-8690.

Please provide all information. If a section is "Not Applicable", provide an explanation as to why not.

Asbestos Project Notification

If you have already completed a notification for this project, please let us know what has changed by filling out the section below.

Is this an **update** to a previously submitted project? Yes No

If yes, what has changed?

Is this an **Emergency Notification** (i.e., less than 72 hours' notice)? Yes No

If yes, use the toll free number listed above to contact us and obtain approval to proceed from an OHS Manager/OHS Technical Advisor, **and** describe below what the emergency is:

Is this an **Extended Notification Request** (i.e., for an on-going project up to a year long, that is low or moderate risk)? Yes No

If yes, describe why you feel that an Extended Notification should be granted:

Part A

Company or Person Submitting Notification
Renegade HM Services Inc.

Name of Person Submitting Notification Brent Cascanette		Email brent@renegadehm.com	
Phone 587-371-7460	Fax 587371461	Mailing Address 563, 7620 Elbow Dr SW	
City Calgary		Province: Alberta	Postal Code T2G 4X4

Part B

Asbestos Contractor Company
Renegade HM Services Inc.

Asbestos Contractor Representative for Project
Brent Cascanette

Phone 587-351-7460	Fax 587-351-7461	Cell 403-850-9221	Email brent@renegadehm.com
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Part C

Work Site Owner
RCMP

Owner Representative
Jack Pawluk

Phone 780-412-5361	Fax	Cell	Email jack.w.pawluk@rcmp-grc.gc.ca
City Waterton		Work Site Address 202 Waterton Ave	
Specific Abatement Location at this Work Site 2nd floor			

Part D

Prime Contractor Renegade HM Services Inc			Prime Contractor Representative Jim Palmer	
Phone 587-351-7460	Fax	Cell 403-540-8890	Email jim@renegadehm.com	

Part E

Hygiene Consulting Company Western Health and Safety			Consultant Representative Don Fillion	
Phone 403-241-6889	Fax	Cell	Email don@westernhealthandsafety.com	

Part F

Project Details

Project Dates	Exact Date for Start of Project 11/22/2017	Exact Date on which Abatement Begins 11/23/2017	Estimated Project Completion Date 11/29/2017
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Days of Abatement	<input type="checkbox"/> Monday	<input type="checkbox"/> Tuesday	<input type="checkbox"/> Wednesday	<input type="checkbox"/> Thursday	<input type="checkbox"/> Friday	<input type="checkbox"/> Saturday	<input type="checkbox"/> Sunday
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Hours of Abatement	From: 8	<input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.	To: 630	<input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.
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Asbestos-Containing Material

What type of material contains the asbestos?

sheet flooring

How much material is being disturbed? (e.g. square metres)

700 sq ft

What type and percentage of asbestos is contained in the above material

<input checked="" type="checkbox"/> Chrysotile 23 %	<input type="checkbox"/> Amosite _____ %	<input type="checkbox"/> Vermiculite _____ %	<input type="checkbox"/> Other _____ %
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How is the project classified (using the Alberta Asbestos Abatement Manual [AAAM])? High Moderate Low
(Note that if a 'modified procedure' from what is outlined in the AAAM, complete details must be provided in the site-specific description section below.)

Has an Acceptance under Section 34 of the OHS Act been issued to the building owner, the prime contractor, a contractor, or employer for this project? Yes (if yes, attach a copy) No

Provide a general description of the asbestos abatement project (Refer to Sections 5.2, 5.3 and/or 5.4 of the AAAM):
5.4 High Risk abatement procedures will be utilized in order to remove the asbestos-containing sheet flooring using hand tools (razor scrapers).

Describe or attach site-specific work procedures for the asbestos abatement project. If there is any variation from what is outlined in the AAAM, complete details must be provided.
Site specific procedures are attached.

Describe air-monitoring protocol that will be used for the project.
Western Health and Safety to provide air monitoring and inspection services.

APPENDIX B
ACKNOWLEDGEMENT FORM

This is only an acknowledgement that Workplace Health and Safety Compliance (WHS) has received your Notification of Project. **It is not an approval to begin asbestos abatement activities.** You must always wait 72 hours from the time you notified WHS before you begin any activity that could release asbestos fibres. See section 36(1) of the Occupational Health and Safety Code.

Acknowledgement Sent To and Project Location

Company or Person Submitting Notification Renegade HM Services Inc.	
Name and Company of Person Submitting Notification Brent Cascanette	
Email brent@renegadehm.com	Fax 587371461
City Waterton	Work Site Address 202 Waterton Ave
Specific Abatement Location at this Worksite 2nd floor	

Date Notification Received

Date (yyyy-mm-dd) 2017-11-20

Acknowledgement

Issued by Donna Jorgensen	Acknowledgement Date (yyyy-mm-dd) 2017-11-21
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APPENDIX C

**SITE-SPECIFIC ASBESTOS
ABATEMENT PROCEDURES**

HIGH RISK ASBESTOS ABATEMENT PROCEDURES

LINOLEUM FLOORING

Scope of Work

The scope of work involves the removal of asbestos-contaminated linoleum flooring from the Waterton RCMP Barracks.

A basic overview of the project scope involves the removal of approximately 700 square feet of linoleum flooring. The work area on the second floor of the building is classified as an asbestos work area and all workers entering the furnace must be trained and certified in asbestos abatement procedures. The workers entering the work area will wear powered-air purifying respirators. Renegade will supply the necessary equipment and respirators for this asbestos abatement project.

Western Health and Safety (WHS) will provide the necessary air monitoring and inspection services in regards to the asbestos abatement activities.

Pre-job Planning:

1. Brent Cascanette of Renegade will be responsibility for the development and submittal of all necessary site-specific asbestos removal procedures and any further required government notifications. Jim Palmer will perform the duties of Renegade Services' Project Manager and oversee all aspects of the asbestos abatement project and ensure strict implementation of the cleaning procedures and all safety protocols. Jim will remain in verbal communication with workers at all times and ensure that all abatement work that is carried out within the contaminated work areas coheres with the requirements of these procedures and applicable OHSA and Alberta Employment and Immigration regulations.
2. All workers on this asbestos abatement project must attend the Renegade site orientation prior to starting work.
3. All workers performing abatement activities on this project must have successfully completed the required 2-day asbestos training course from an approved training agency and have performed this type of abatement work on at least two comparable industrial projects. Copies of all certification held by each worker on this abatement project must be readily available for the duration of the project.
4. Establish site-specific work procedures and review these procedures with WHS environmental consultant assigned to the site location. A copy of Renegade Services' written site-specific asbestos abatement procedures shall be clearly displayed in a conspicuous location at the site.

5. Ensure that a properly completed Asbestos Project Notification Form and a copy of the site-specific abatement procedures has been submitted to the office of Workplace Health and Safety, Alberta Employment and Immigration, prior to start of the project. Copies of both the government notification and the Acknowledgement form (received back from the government) are to be posted on the work site.
6. Copies of the Alberta Asbestos Abatement Manual (August 2011 edition) and the OH&S Statutes and Regulations shall be made available on site to all workers. Renegade Services' corporate safety manual and safety program files will also be made available on site.
7. Fill out and submit all required paperwork to obtain work permits. Ensure Owner's and WHS approval of the work area preparation and the abatement procedures to be used.
8. Ensure all HEPA-equipped vacuums and negative air units are DOP tested prior to being used on this asbestos abatement project. All equipment tested will have a certification sticker verifying the date of testing and the unit number. Copies of the DOP testing certification documents must be available on the project site.
9. Instruct the workers on all the necessary personal protective equipment to be used on this project. Renegade will fit test each worker to his assigned respirator for proper mask to face seal. Workers must fill out and sign all required forms associated with Renegade Services' corporate safety program including Fit Test Forms, Master Respirator Lists and Daily Inspections.
10. An emergency plan must be in place in the event of a fire or worker-related injury. The plan will include provisions of the proper fire fighting equipment and personnel that can respond quickly. Workers must also be trained to spot and treat heat stress illness and minor burns. The emergency plan must be tested and drilled with the entire crew.
11. Ensure that all necessary arrangements have been made for the proper disposal of all waste at a disposal site that conforms to all provincial and municipal requirements.

Equipment Required:

The following list outlines the majority of the proper equipment to perform the scope of work:

- banner tape and warning signs specifically stating the hazard present as "Asbestos".
- HEPA vacuum cleaners fitted with HEPA filters;
- negative air units with HEPA filters;
- airless sprayer & hand pump garden sprayers complete with WHMIS labels;
- polyethylene sheeting (6 mil & reinforced);

- PAPR respirators
- adequate lighting;
- half mask respirator complete with P100 filters;
- Tyvek coveralls and boot covers;
- Task specific gloves, safety boots, safety glasses and hard hats;
- electrical extension cords;
- wetting agent and encapsulant;
- airless sprayer;
- shower stall;
- water storage tank;
- water pumps;
- shower filtration system;
- scaffolds and ladders;
- shovels; hammers, long pry bars, jack hammers;
- labeled 6 mil asbestos disposal bags;
- rags, water, whisk brooms and other supplies for cleaning;
- fire extinguisher and first aid kit.

Removal Procedures:

1. A pre-job safety meeting must be held with all WHS and Renegade employees involved with this asbestos abatement project prior to starting any phase of the work. The proposed scope of work will be discussed with all parties involved with this project and a Job Hazard Analysis must be developed and approved by the client. Review and distribution of the necessary project submittals will also be performed during this meeting.
2. Banner tape off each work area and post signs where access to the area is possible. These signs shall warn persons of an asbestos dust hazard and shall sufficiently identify the area and restrict entry to authorized persons only.
3. An airtight removal enclosure system will be constructed around the work area,
4. A worker decontamination facility contiguous to the work area and consisting of three fully enclosed chambers including a personnel transfer room, a shower room and a clean room will be constructed adjacent to the reaction furnace.
5. Negative air machines, complete with HEPA filters, will be installed by Renegade to provide the specified negative air pressure in the work area and will remain operational until the final air clearance sampling for the work area is obtained and the work area passed by WHS. The negative air units must be DOP tested before they are used on any work site. Certification and tester qualification records may be provided to RCMP and Renegade field representatives prior to use of equipment on site. Negative air machines should be able to provide at least four complete air changes per hour and create a negative air pressure of approximately 5 Pascal (gauge) within the reaction furnace relative to the surrounding area.

6. A ground fault interrupter panel, complete with GFI breakers, provided by Renegade Services will protect all electrical equipment used during the asbestos abatement work. All existing electrical systems and equipment within the work area must be identified, isolated and/or locked-out by the Owner's forces, if possible. Any systems or equipment that require protection against potential electrical shock or damage to the systems caused by the use of amended water and sealant within the area will be sealed with polyethylene as a minimum measure of protection.
7. After the pre-contamination inspection of the work area set-up by WHS and the entire Renegade and WHS representative will hold a Pre-entry Safety Meeting. The hazard assessment and Safety ToolBox Talk relating to this project will also be reviewed and discussed by all involved parties.
8. Once all required safety documents have been completed and signed, the workers will proceed to the clean room to don the necessary personnel protective equipment.
9. Persons entering the high-risk work area shall remove street clothes in the clean room and don fire-rated coveralls, a pair of clean, full-body disposable coveralls and leather gloves. The neck, wrists and ankles of the disposable coveralls should be taped to prevent contamination. Steel toed rubber boots will be worn by all workers entering the work area.
10. All workers entering the work area must wear an approved respirator. A PAPR respirator shall constitute the minimum respiratory protect for this type of removal. A review of the type of respirator protection may be required, as dictated by air monitoring results obtained within the removal area by WHS. (See Protection Factor Table) All workers must be familiar with the correct use and limitations of the respirators. (See Employee Release Forms) Renegade will fit test each worker for personnel respiratory equipment. (See Fit Test Forms) Respirators must be cleaned and properly maintained.
11. Workers are to perform the removal in groups of two or more so that immediate evacuation can be effective in the event of illness or injury of one of the workers. Workers are to be fully detailed and cognizant of the methods and intentions of these procedures prior to commencing removal tasks.
12. Using hand tools, workers will remove the asbestos containing material attached to the floor whilst using an airless sprayer, or other method, to minimize the amount of dust created.
13. Following the removal of the asbestos materials and completion of the final clean activities, a visual inspection by WHS shall be conducted. Following this inspection and acceptance, a coat of sealer will be applied using an airless sprayer to all cleaned surfaces.

14. Allow the required fibre settling time with no disturbances of the work site before work area clearance air monitoring. Negative air units shall be left running during this time. Failure to pass final air clearance tests will require further cleaning and, where practical, misting of the area with sealant before further air tests are conducted.
15. Barriers and decontamination enclosures shall not be dismantled until air monitoring within the work area indicates an acceptable airborne fibre concentration, then the polyethylene sheeting will be taken down and disposed of as contaminated waste.

Personal Decontamination:

1. A three-stage worker decontamination station consisting of three fully enclosed chambers including a personnel transfer room, a shower room and a clean room will be utilized as part of these high-risk abatement procedures to be used for this project. This station will be constructed as part of the designated work area.
2. Once the work area has been classified as asbestos-contaminated, each worker leaving the asbestos abatement work area must decontaminate his respirator and himself thoroughly at the designated decontamination station.
3. Before entering the first transfer room of the station, the worker must remove all gross contamination from himself and his outside set of disposable coveralls using the buddy system and a HEPA vacuum. The worker then enters the transfer room and removes his outer coveralls and protective equipment. Still wearing the respirator, the worker proceeds to the shower located in the personnel decontamination chamber.
4. In the shower, the worker washes his face head and respirator with soap and water. The respirator is only taken off after a thorough wetting in the shower water stream.
5. All wash waste water must be pumped through a filter system containing both 10 and 5-micron filters before being drained directly into the plant sewer system. Filters are to be changed as required and disposed of as contaminated waste. When the filtration pump is running, visually check the drain lines on a regular basis.
6. After a complete shower, the worker proceeds to the clean room to further clean and store his respirator. The worker then changes back into his street clothes.
7. Ensure all used towels; filters etc. are properly disposed of in the waste container provided.
8. All tools and electrical equipment must be left in the removal area until completion of the removal job. Before the equipment is removed, it shall be vacuumed thoroughly and all access surfaces wiped with a damp cloth.

Air Monitoring & Inspections:

1. Air monitoring and inspection services will be provided by WHS. Monitoring for airborne asbestos fibers will be done according to NIOSH Method 7400.
2. For this project, background air samples will be taken inside the work area before work starts and clearance samples will be taken after the removal using aggressive methods and air monitoring results after the abatement should be less than 0.01 fibers per cubic centimeter. Otherwise the work area should be glue-sprayed again and re-tested.
3. During all asbestos cleaning activities, air monitors will be placed on the workers in the area of their breathing zone. Occupational samples will be collected to confirm proper respiratory protection for the type of asbestos present. Air monitoring will also be done just outside the work area barrier tape at all times.
4. Air monitoring results must be made available to all workers performing the asbestos cleaning activities. Copies of the air monitoring must be posted on site near the designated work area.
5. Areas within the reaction furnace that require welding (i.e.: refractory clips) shall be ground to clean steel prior to application of the encapsulant. These areas are to be identified by WHS prior to commencing work.

Disposal:

1. A continuous clean-up and disposal program will be implemented to prevent unnecessary accumulation of asbestos-containing waste materials in the work area.
2. All asbestos-containing waste from within the contaminated work areas must be disposed of in sealed, labeled, 6 mil polyethylene bags.
3. Waste Management will provide asbestos waste bins for storage and disposal. Disposal shall be in accordance with all applicable provincial and municipal requirements.

Review Verification:

By signing this document, I verify that I have reviewed and understand the contents of this asbestos abatement procedure.

Name (Print)	Signature	Company/Title	Date

APPENDIX D

DOP TESTING CERTIFICATES



HAZMASTERS
CREATING SAFER WORK ENVIRONMENTS
A SUBSIDIARY OF WESCO DISTRIBUTION CANADA



HAZMASTERS
POUR UN ENVIRONNEMENT DE TRAVAIL PLUS SÉCURITAIRE
UNE FILIALE DE WESCO DISTRIBUTION CANADA LP

HEPA FILTERED EQUIPMENT FILTER PERFORMANCE CERTIFICATION
CERTIFICAT DE PERFORMANCE POUR APPAREILS ÉQUIPÉS DE FILTRES H.E.P.A

HAZMASTERS BRANCH
HAZMASTERS-SUCCURSALE CGY

TEST # 107683 **DATE** 11/22/17
RAPPORT # _____ DATE _____

COMPANY NAME: RENEGADE
NOM DE LA COMPAGNIE: _____

LOCATION OF INSPECTION: HAZ SHOP
LIEU DE L'INSPECTION: _____

EQUIPMENT TYPE: EC-12-G **MANUFACTURER:** TIGERVAC
TYPE D'ÉQUIPEMENT: _____ MANUFACTURIER: _____

SERIAL #: 07060993 **CONTRACTORS UNIT #:** _____
N° DE SÉRIE: _____ N° D'UNITÉ ATTRIBUÉ PAR LE CONTRACTEUR: _____

1) CONDITION OF CABINET AND/OR OUTER CASING
CONDITION DU CABINET ET/OU DE LA COQUILLE EXTÉRIEURE

FAIR **GOOD** _____ **DAMAGED** _____
PASSABLE _____ BONNE _____ ENDOMMAGÉ _____

IF DAMAGES
DOMMAGES NOTÉS _____

2) HEPA FILTER 99.97% **OR** 99.99%
FILTRE H.E.P.A _____ OU _____

NEW _____ **PREVIOUSLY INSTALLED**
NOUVEAU _____ PRÉCÉDEMMENT INSTALLÉ _____

3) HEPA FILTER AND SEAL CHALLENGED
ESSAI DU FILTRE ET DU SCEAU DU FILTRE H.E.P.A

DOWN STREAM CLEAN AIR TEST
TEST DE L'AIR EXPULSÉ NON-CONTAMINÉ

PASSED **FAILED** _____
RÉUSSI _____ ÉCHOUÉ _____

COMMENTS
COMMENTAIRES _____

INSPECTOR'S NAME: Steve Frost
NOM DE L'INSPECTEUR _____

SIGNATURE [Signature]
SIGNATURE _____

WHITE COPY - ORIGINAL COPY
COPIE BLANCHE - ORIGINAL

YELLOW COPY - OFFICE COPY
COPIE JAUNE - HAZMASTERS

hazmasters.com

Branches across Canada

877.747.7117

APPENDIX E

AIR MONITORING REPORT



1636 12 Avenue SW
Calgary, Alberta
Canada T3C 0R2
Tel.403.241.6889
Fax.403.241.6688
www.westernhealthandsafety.com

November 28, 2017

SENT VIA E-MAIL
jim@renegadehm.com

Renegade HM Services Inc.
563 7420 Elbow Drive SE
Calgary, AB T2V 1K1

Attention: Mr. Palmer

Re: Asbestos Removal Summary Letter
Waterton RCMP Barracks – 202 Waterton Ave, Waterton, AB
Project #: W6941

Dear Mr. Palmer,

The removal of asbestos-containing materials from the RCMP Barracks 2nd floor located at 202 Waterton Avenue, Waterton, AB is now complete. During the project, approximately 1,100 ft² of asbestos-containing sheet flooring was removed through-out the 2nd floor and landing. In addition to the air monitoring report, floor plans have been provided with pump locations marked (reference project sample number from air monitoring report) to indicate the air sampling locations through-out the barracks during the removal, including backgrounds and final air clearances.

The removal was completed by Renegade HM Services Inc. between November 25 and November 27, 2017. During the project, Western Health & Safety (WHS) verified that the requirements of the *Alberta Asbestos Abatement Manual* (2012) were adequately met. WHS conducted air sampling throughout the project and upon completion of the work, visually inspected the area to ensure that: all materials as identified in the scope of work had been removed and, that the area had been properly cleaned. Based on the air sampling results and visual inspection, the area has met the requirements as outlined in the *Alberta Asbestos Abatement Manual* (2012) following high risk asbestos abatement procedures. The area is adequate for re-occupancy by unprotected workers. Please find enclosed a copy of the Air Monitoring.

If you have any questions or require any additional information or clarification, please feel free to contact the undersigned at (403) 241-6889.

Sincerely,

A handwritten signature in blue ink, appearing to read "Marie Kurczab".

Marie Kurczab
Health and Safety Specialist
Western Health & Safety

AIR MONITORING REPORT



PROJECT NAME: Wateron RCMP Station
 DESCRIPTION: Removal of Asbestos Containing Sheet Flooring
 WHS PROJECT #: W6941

CONTRACTOR: Renegade HM Services Ltd
 CLIENT: Renegade HM Services Ltd
 PROJECT START DATE: November 25, 2017

WHS #	PROJECT SAMPLE #	DESCRIPTION	FLOW RATE (L/min)		START DATE	STOP DATE	TOTAL TIME (min)	SAMPLE VOL. (L)	# OF FIBRES	# OF FIELDS	FIBRE DENSITY (fibre/cc)	CONC. (fibre/cc)	NOTATION	ANALYST
			PRE	POST										
17-1275	1	Background - Mess Room	8.0	8.0	11/25/17 9:20	11/25/17 16:15	415	3320	3.5	100	< 7	< 0.01	1, 4a	MK
17-1276	2	Background - General Office Area	8.0	8.0	11/25/17 9:10	11/25/17 16:10	420	3360	2.0	100	< 7	< 0.01	1, 4a	MK
17-1277	3	Outside Work Area - Kitchen	8.0	8.0	11/25/17 9:24	11/25/17 16:45	441	3628	2.5	100	< 7	< 0.01	1, 4a	MK
17-1278	4	Clean Room - Inside Kitchen	8.0	8.0	11/25/17 9:30	11/25/17 16:45	435	3480	4.0	100	< 7	< 0.01	1, 4a	MK
17-1279	5	Occupational Work on Worker during Sheet Flooring Removal using a 120lbs Electric Floor Scraper, 2nd Floor	3.5	3.5	11/25/17 9:30	11/25/17 10:00	30	105	8.0	100	10.19	0.04	3e	MK
17-1280	6	Occupational Work on Worker during Sheet Flooring Removal using Hand Scrapers, Razer Scrapers, 2nd Floor	3.5	3.5	11/25/17 9:30	11/25/17 10:00	30	105	3.5	100	< 7	< 0.02	3e	MK
17-1281	7	Occupational Work on Worker during Sheet Flooring Removal using a 120lbs Electric Floor Scraper, 2nd Floor	3.5	3.5	11/25/17 14:00	11/25/17 14:30	30	105	2.0	100	< 7	< 0.01	3e	MK
17-1282	8	Occupational Work on Worker during Sheet Flooring Removal using Hand Scrapers, Razer Scrapers, 2nd Floor	3.5	3.5	11/25/17 14:00	11/25/17 14:30	30	105	1.5	100	< 7	< 0.01	3e	MK
17-1283	9	Background - Mess Room	8.0	8.0	11/26/17 8:17	11/26/17 15:12	415	3300	4.0	100	< 7	< 0.01	1, 4a	MK
17-1284	10	Background - Private Office	8.0	8.0	11/26/17 8:40	11/26/17 15:25	405	3340	1.5	100	< 7	< 0.01	1, 4a	MK
17-1285	11	Background - Guard Room	8.0	8.0	11/26/17 9:07	11/26/17 16:18	431	3448	2.5	100	< 7	< 0.01	1, 4a	MK
17-1286	12	Outside Work Area - Kitchen	8.0	8.0	11/26/17 9:01	11/26/17 17:08	487	3895	2.0	100	< 7	< 0.01	1, 4a	MK
17-1287	13	Clean Room - Inside Kitchen	8.0	8.0	11/26/17 9:03	11/26/17 17:08	485	3880	3.0	100	< 7	< 0.01	1, 4a	MK
17-1288	14	Occupational Work on Worker during Sheet Flooring Removal using Hand Scrapers, Razer Scrapers, Staff Laundry	3.5	3.5	11/26/17 8:45	11/26/17 9:15	30	105	2.5	100	< 7	< 0.01	3e	MK
17-1289	15	Occupational Work on Worker during Final Cleaning	3.5	3.5	11/26/17 8:45	11/26/17 9:15	30	105	1.5	100	< 7	< 0.01	3e	MK
17-1290	16	Occupational Work on Worker during Final Cleaning	3.5	3.5	11/26/17 14:10	11/26/17 14:25	15	52	2.0	100	< 7	< 0.02	3e	MK

WHS is a member of The Canadian Association of Laboratory Accreditation Inc. (CALA)

AIR MONITORING REPORT



PROJECT NAME: Waterloo RCMP Station
 DESCRIPTION: Removal of Asbestos Containing Sheet Flooring
 WHS PROJECT #: W6541

CONTRACTOR: Renegade HM Services Ltd
 CLIENT: Renegade HM Services Ltd
 PROJECT START DATE: November 25, 2017

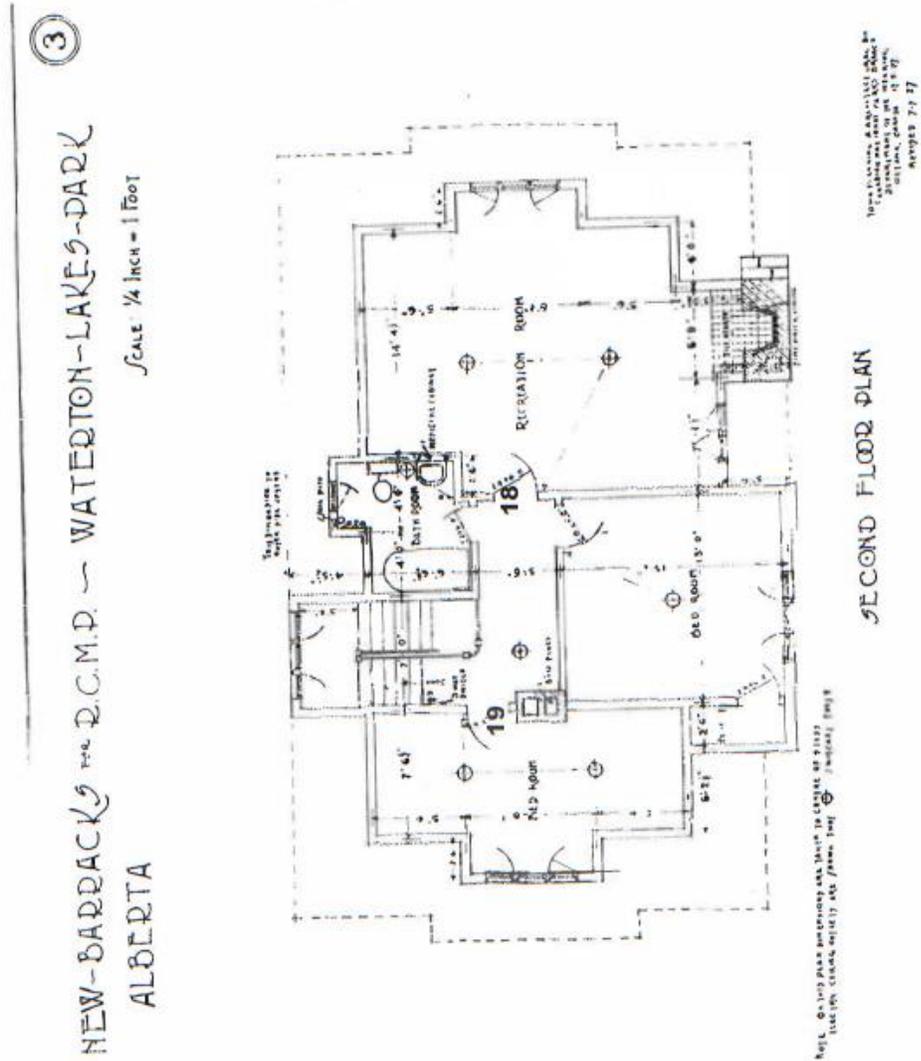
WHS #	PROJECT SAMPLE #	DESCRIPTION	FLOW RATE (L/min)		START DATE	STOP DATE	TOTAL TIME (min)	SAMPLE VOL. (L)	# OF FIBRES	# OF FIELDS	FIBRE DENSITY (f/minf)	CONC. (fibres/cc)	NOTATION	ANALYST
			PRE	POST										
17-1291	17	Occupational Work on Worker during Final Cleaning	3.5	3.5	11/26/17 14:10	11/26/17 14:25	15	52	1.5	100	<7	< 0.01	3e	MK
17-1292	18	Air Clearance - 2nd Floor Rec Room	16.0	16.0	11/27/17 3:00	11/27/17 6:00	180	2880	1.0	100	<7	< 0.01	1, 4a	MK
17-1293	19	Air Clearance - 2nd Floor, East Bedroom Downway	16.0	16.0	11/27/17 3:00	11/27/17 6:00	180	2880	0.5	100	<7	< 0.01	1, 4a	MK

NOTES:
 1 All samples were collected and analyzed according to NIOSH Method 7400
 2 This method does not distinguish between the different types of fibres (for example fibre/glass or cotton) since all particles meeting the criteria are counted.
 3 This method gives an index of all airborne fibres, not just asbestos fibres.
 4 The number of samples reported are cumulative for the project from the start date to the date the report was prepared

NOTATIONS:

- < - less than. Sample result is below the limit of detection for the analytical method used. Result reported indicates the maximum concentration that could be reported.
- 2a Sample result is below the 8-hour Occupational Exposure limit of 0.1 fibres/cc for asbestos established by Alberta Workplace Health and Safety.
- 2b Sample result is above the 8-hour Occupational Exposure limit of 0.1 fibres/cc for asbestos established by Alberta Workplace Health and Safety.
- 3a Sample result is below the maximum use concentration of 1 fibres/cc for a worker wearing a half face respirator equipped with P100 cartridges.
- 3b Sample result is above the maximum use concentration of 1 fibres/cc for a worker wearing a half face respirator equipped with P100 cartridges.
- 3c Sample result is below the maximum use concentration of 10 fibres/cc for a worker wearing a full face respirator equipped with P100 cartridges.
- 3d Sample result is above the maximum use concentration of 10 fibres/cc for a worker wearing a full face respirator equipped with P100 cartridges.
- 3e Sample result is below the maximum use concentration of 100 fibres/cc for a worker wearing a full face PAPR equipped with P100 cartridges.
- 3f Sample result is above the maximum use concentration of 100 fibres/cc for a worker wearing a full face PAPR equipped with P100 cartridges.
- 4a Sample result meets or falls below the air clearance criteria of 0.01 fibres/cc following asbestos abatement as outlined in the Alberta Asbestos Abatement Manual.
- 4b Sample result is above the air clearance criteria of 0.01 fibres/cc following asbestos abatement as outlined in the Alberta Asbestos Abatement Manual.
- 5 Sample contained an unusually high non-fibre particulate loading due to the dust and the debris present in the work area.
- 6a Sample result is below the action limit of 0.05 fibres/cc (50% of the OEL) outlined in the Alberta Asbestos Abatement Manual.
- 6b Sample result is above the action limit of 0.05 fibres/cc (50% of the OEL) outlined in the Alberta Asbestos Abatement Manual.
- 7 As per the requirements of the NIOSH Method a field blank was collected to ensure that the sampling and handling procedures did not contaminate the media.

RCMP DETACHMENT BUILDING AND GARAGE, WLNP, ALBERTA



10 RCMP Detachment Building, WLNP, proposed second floor plan, 1927. (Photo Services, Environment Canada-Parks, Ottawa.)

APPENDIX F

WASTE DOCUMENTS

CROWNEST PINCHER CREEK LF
BOX 668
PINCHER CREEK, AB T0K 1W0
PHONE: (403) 628-3849

Ticket: 40038
Date: 11/27/17
Time: 13:08:34 - 13:38:36

Customer: CASH/COD TRANSACTION
WATERTON PARK
WATERTON PARK - NR
WATERTON, AB
Truck: PALMER NICK
Comment:

Scale
Gross: 3030 KG In Scale 1
Tare: 2740 KG Out Scale 1
Net: 290 KG

Materials & Services	Quantity Unit	Rate/Unit	Amount
ASBESTO NR/ASBESTOS NR	0.29 Tonne	\$125.00/T	\$36.25
		RM Fee:	\$0.29
		Total Amount:	\$36.54
		Rounding Adjustment:	\$0.01
		Visa: xxxx-:	\$36.55
		Change:	\$0.00

Drivers: _____ Deputy Weighmaster: Linda Wollman

CROWNEST PINCHER CREEK LF
BOX 668
PINCHER CREEK, AB T0K 1W0
PHONE: (403) 628-3849

Ticket: 40037
Date: 11/27/17
Time: 13:06:39 - 13:38:07

Customer: CASH/COD TRANSACTION
WATERTON PARK
WATERTON PARK - NR
WATERTON, AB
Truck: THORNE CHRIS
Comment:

Scale
Gross: 2960 KG In Scale 1
Tare: 2750 KG Out Scale 1
Net: 210 KG

Materials & Services	Quantity Unit	Rate/Unit	Amount
ASBESTO NR/ASBESTOS NR	0.21 Tonne	\$125.00/T	\$26.25
		RM Fee:	\$0.21
		Total Amount:	\$26.46
		Rounding Adjustment:	-\$0.01
		Visa: xxxx-:	\$26.45
		Change:	\$0.00

Drivers: _____ Deputy Weighmaster: Linda Wollman

APPENDIX G

PHOTO LOG



Figure 1: Recreation Room Furnishing

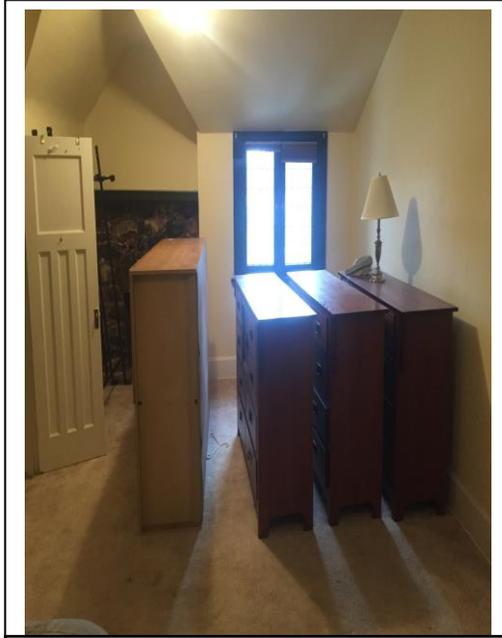


Figure 2: Recreation Room Furnishing

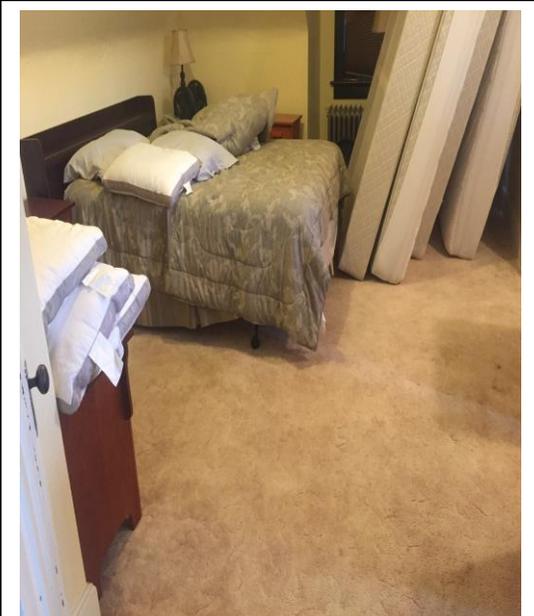


Figure 3: Recreation Room Furnishing

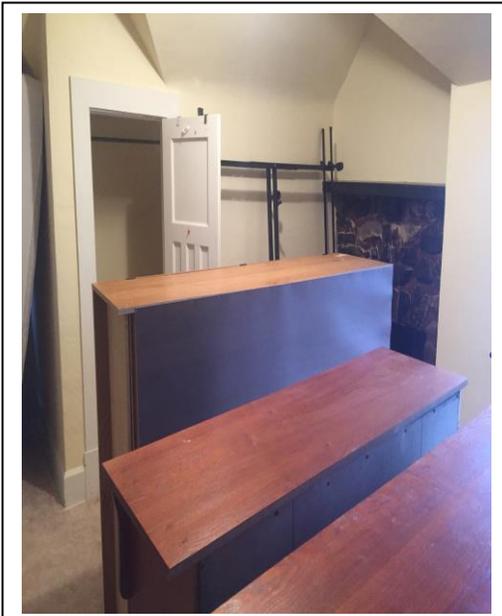


Figure 4: Recreation Room Furnishing



Figure 5: Mess Hall Ceiling



Figure 6: Bedroom 1 – Removed Linoleum



Figure 7: Bedroom 1 – Removed Linoleum



Figure 8: Bedroom 1 – Removed Linoleum

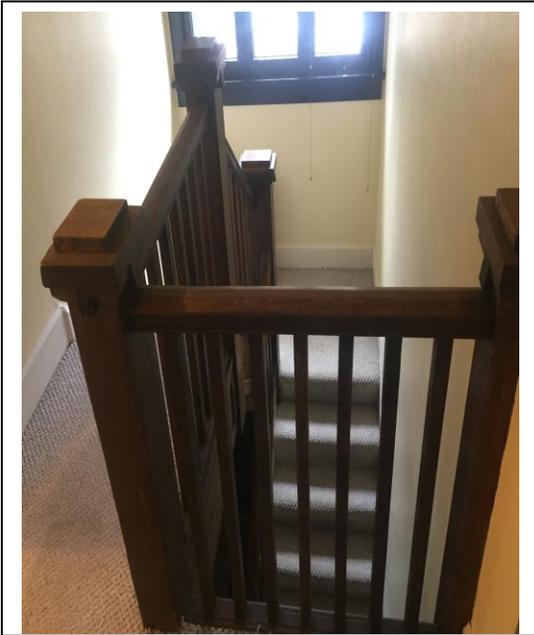


Figure 9: Stairway – Carpet



Figure 10: Stairway – Carpet



Figure 11: Stairway Landing Linoleum



Figure 12: Stairway Landing Linoleum

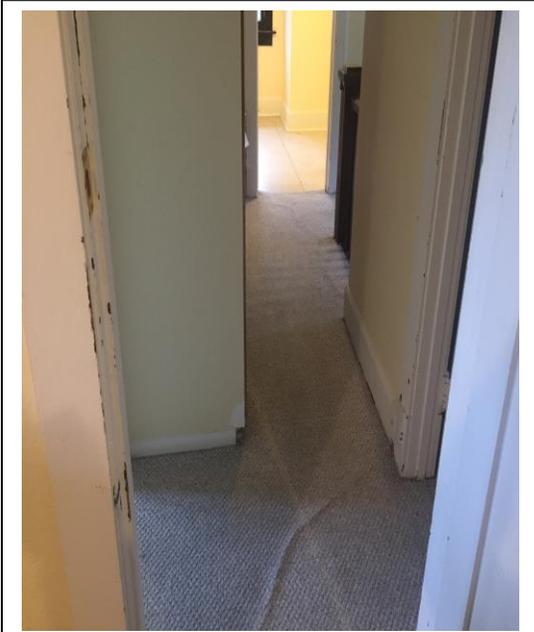


Figure 13: Hallway Carpet

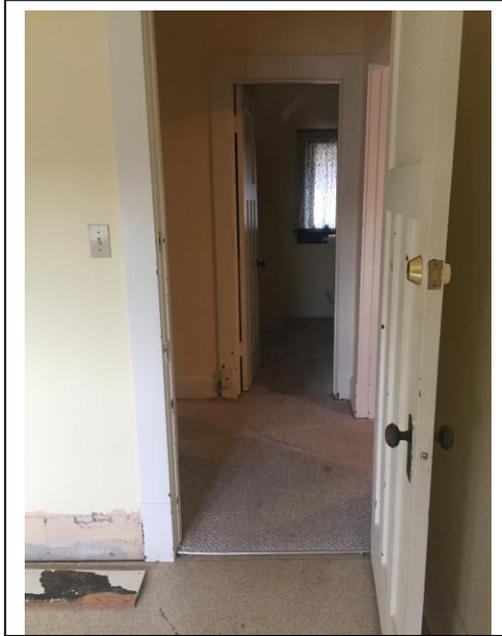


Figure 14: Hallway Carpet

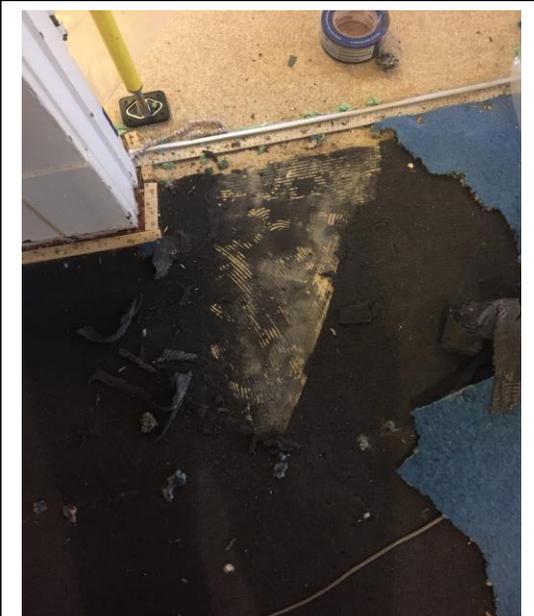


Figure 15: Hallway Linoleum



Figure 16: Hallway Linoleum

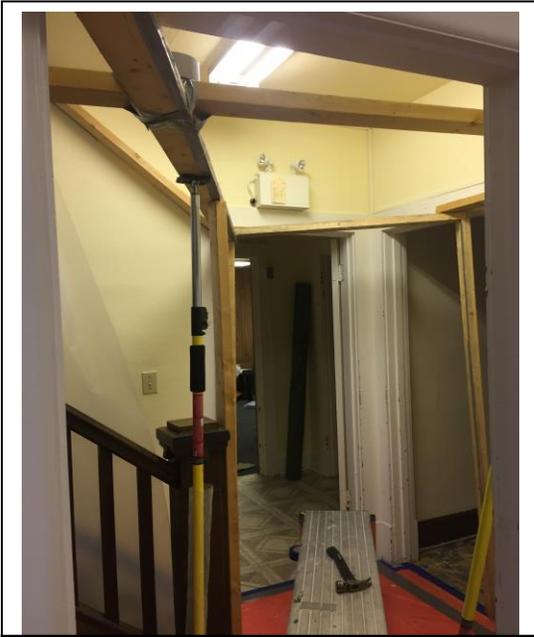


Figure 17: Wood Framing



Figure 18: Wood Framing



Figure 19: Stairway Containment Set Up



Figure 20: Stairway Containment Set Up

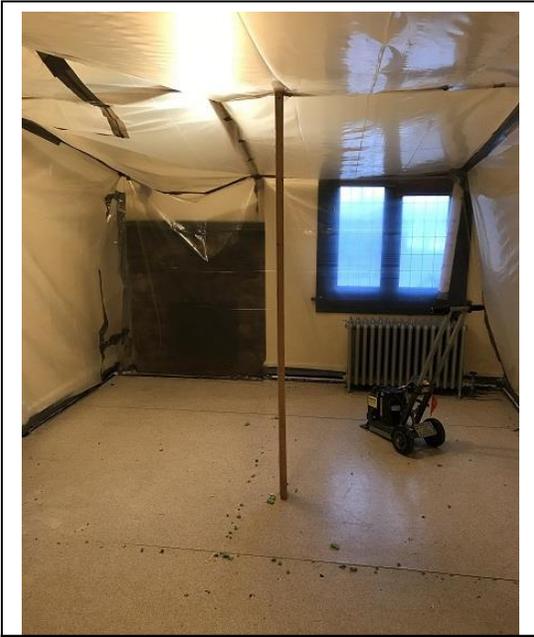


Figure 21: Rec Room Containment Set Up



Figure 22: Rec Room Containment Set Up

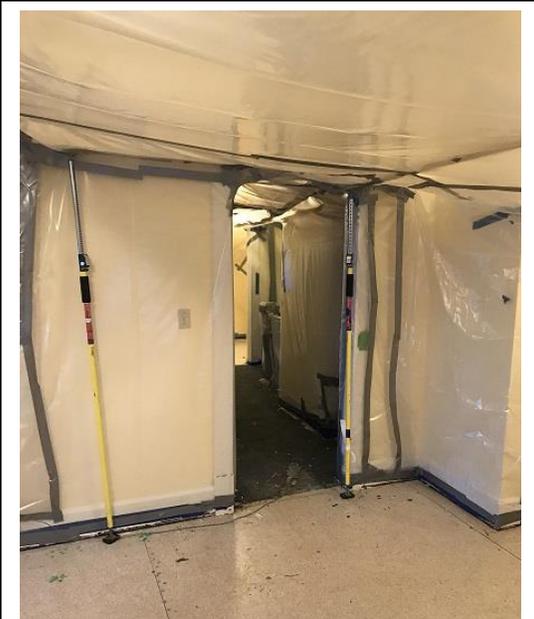


Figure 23: Rec Room Containment Set Up



Figure 24: Rec Room Containment Set Up



Figure 25: Floor Scraper



Figure 26: Removal of Paper Backing

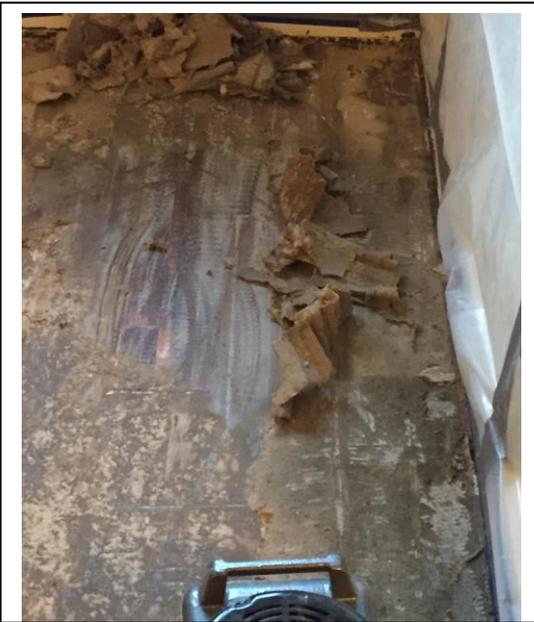


Figure 27: Removal of Paper Backing



Figure 28: Mastic Remaining



Figure 29: Completed Rec Room



Figure 30: Completed Rec Room

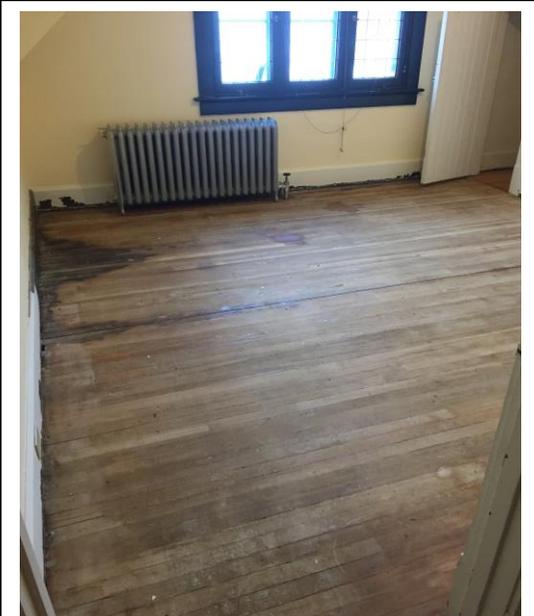


Figure 31: Completed Bedroom #1

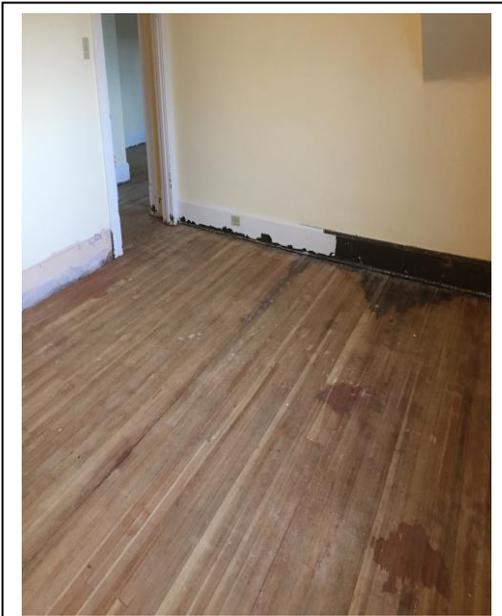


Figure 32: Completed Bedroom #1

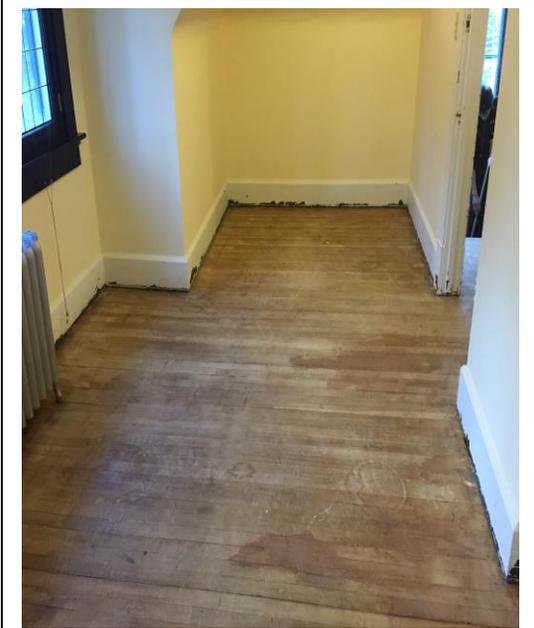


Figure 33: Completed Bedroom #2

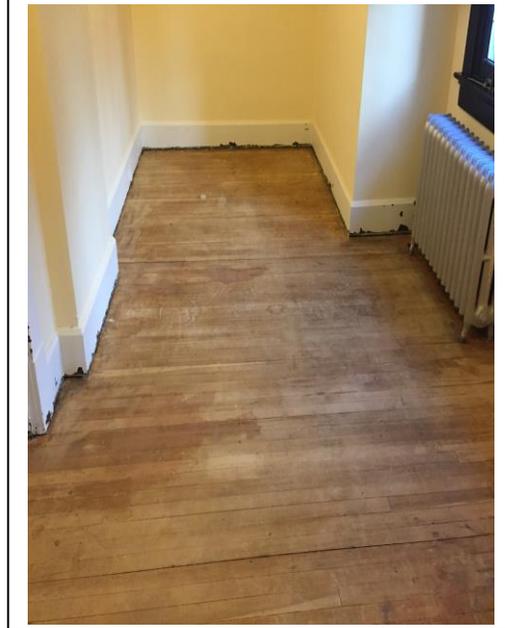


Figure 34: Completed Bedroom #2

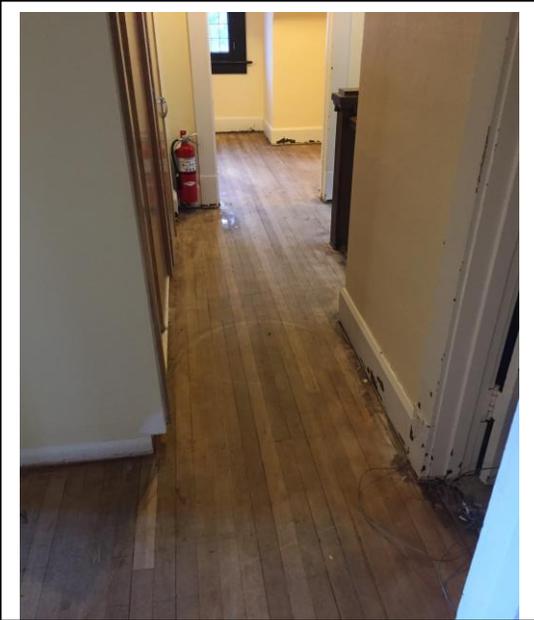


Figure 35: Completed Hallway



Figure 36: Completed Hallway

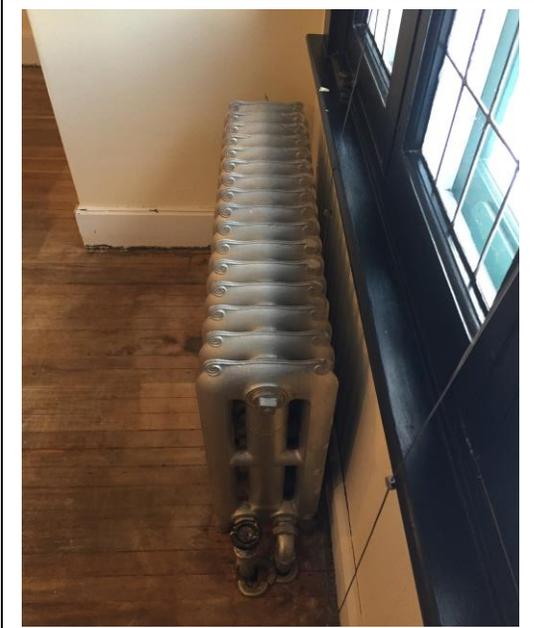


Figure 37: Final Cleaned Heater /Window Sill

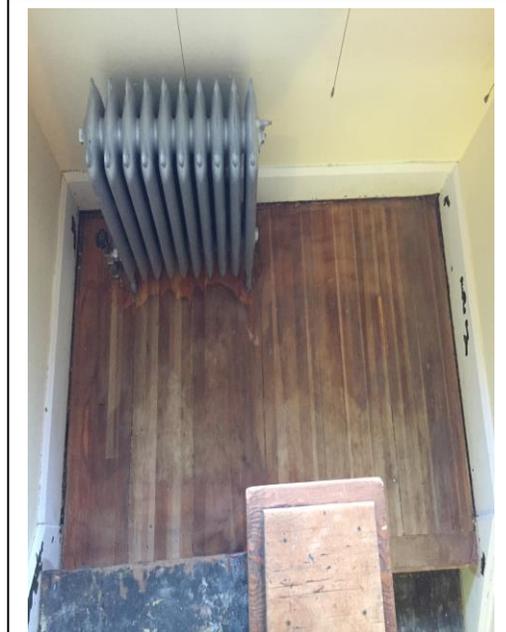


Figure 38: Completed Landing

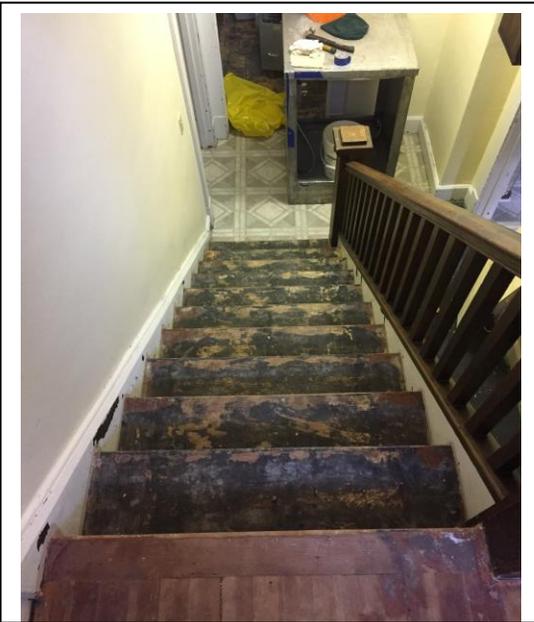


Figure 39: Completed Stairs

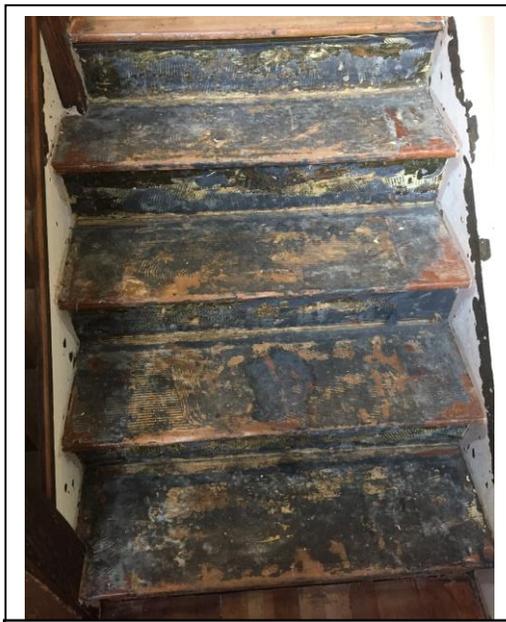


Figure 40: Completed Stairs