

February 19, 2021

Electric HP
607 15 Avenue
Nisku, AB T9E 7M6

Attention: **Robert Folk**

RE: **ATP SURFACE SWABS SAMPLING REPORT**
LOCATION: 607 15 Avenue, Nisku, Alberta
APSR JOB #: 2021-51 Hygiene

Dear Mr. Folk,

Enclosed is AP Solutions and Resources (APSR) Environmental Health & Safety's final report for the adenosine triphosphate (ATP) surface swab testing for the Electric HP site located at 607 15 Avenue in Nisku, AB.

If you have any questions, require clarification, or would like to discuss the report, please feel free to contact the undersigned at 780 328 4628.

Thank you for retaining the services of APSR Environmental Health & Safety. We look forward to working with you again in the future.

Sincerely,



Petro Cordero, BSc, BEH(AD), CPHI(C), ROHT
Project Manager
APSR Environmental Health & Safety





INTRODUCTION

AP Solutions and Resources Ltd. (APSR) Environmental Health & Safety was retained by Electric HP (the Client) to conduct ATP surface swab testing for the Electric HP site located at 607 15 Avenue in Nisku, AB (the Site). The field work was conducted by Petro Cordero of APSR February 8-11, 2021.

SCOPE OF WORK

The scope of work for the project included:

- conducting surface swab sampling of select building materials for ATP pre and post application of the planned disinfectant/sanitizer release during the following tests:
 - small scale release within the board room using a hypochlorite based solution;
 - large scale release within the warehouse using a hypochlorite based solution;
 - compartmentalized release within the office areas using a hypochlorite based solution; and
- preparing a letter report outlining the results of the ATP sampling.

METHODOLOGY

Surface Swab Testing

Surface swab testing for adenosine triphosphate (ATP) was conducted on representative building materials. Measuring the amount of bioluminescence from an ATP reaction provides a good indication of surface cleanliness. Surface testing was conducted using a Hygiena SystemSure Plus bioluminescence detector.

REGULATORY REQUIREMENTS AND GUIDELINES

Adenosine Triphosphate (ATP) Surface Swabs

ATP detection programs are rapid hygiene monitoring systems designed to assist organizations achieve optimal hygiene status. It is part of a comprehensive monitoring plan to test, record and track biological contamination on surfaces.

As part of a Level II environmental monitoring program, the Centers for Disease Control and Prevention (CDC) recommends monitoring cleaning thoroughness with an objective measurement tool, such as an ATP Cleaning Verification System. While all objective methods for evaluating environmental hygiene have limitations, ATP systems have been used to broadly document significant improvement in daily cleaning as well as provide quantitative measurement to indicate the level of cleanliness of high touch surfaces.



SURFACE SWABS (ATP)

On-site surface testing of surfaces was conducted using a Hygiena SystemSure Plus ATP bioluminescence portable detector.

February 8, 2021

APSR arrived on-site for the pre and post ATP surface swab sampling during the small scale release test within the board room of the site. Duplicate sampling on 10 cm X 10 cm grids on random surfaces was conducted. No post sampling was conducted for pre-application surface swabs that were below 7 RLU. The results of the surface samples collected are provided in Table 1: Surface ATP Swab Results Board Room.

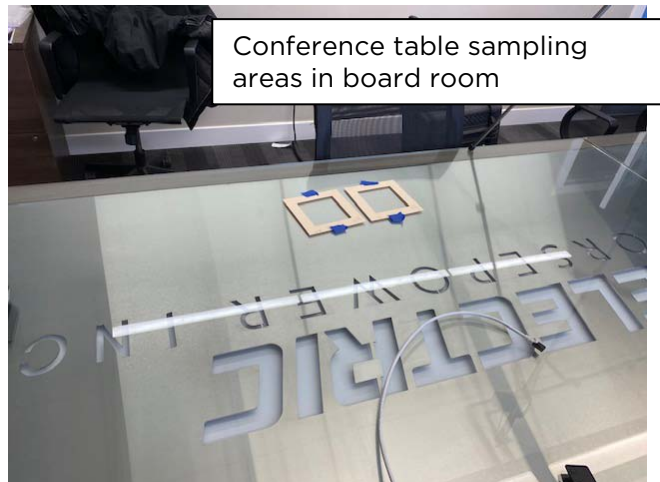
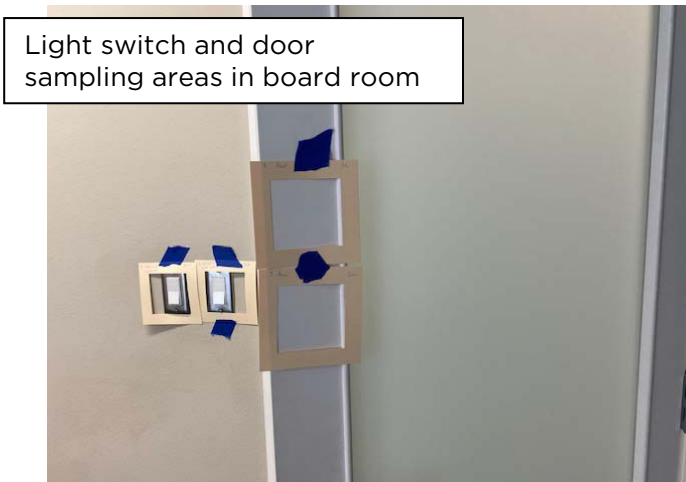
Table 1: Surface ATP Swab Results Board Room			
Sample Number	Sample Location	ATP Measurement Pre (RLU)	ATP Measurement Post (RLU)
1	West wall	1	NA
2	Light switch (west wall)	23	17
3	Door	10	1
4	North wall	1	NA
5	East wall	1	NA
6	South wall	2	NA
7	Conference table (SW)	7	1
8	Conference table (NE)	2	NA
9	Under table (east)	2	NA
10	Chair back	4	NA

Notes:

1. RLU - Relative Light Unit
2. NA - no comparison post sample collected

The post surface swab area samples collected on the following surfaces indicated a reduction in RLU measurements between pre- and post-application sampling:

1. Sample 2 - Light switch
2. Sample 3 - Door
3. Sample 7 - Conference table (SW)



February 9, 2021

APSR arrived on-site for the pre and post ATP surface swab sampling during the large scale release test within the warehouse of the site. Duplicate sampling on 10 cm X 10 cm grids on random surfaces was conducted. No post sampling was conducted for pre-application surface swabs that were below 30 RLUs. The results of the surface samples collected are provided in Table 2: Surface ATP Swab Results Warehouse.

Sample Number	Sample Location	ATP Measurement Pre (RLU)	ATP Measurement Post (RLU)
1	Lunch room fridge (mezzanine)	15	NA
2	Mezzanine railing wall	57	28
3	Resistance heater NE	11	NA
4	SE door	16	NA
5	SW door	18	NA
6	Welding table	33	9
7	Shipping/Receiving door	97	6
8	Lower rack (north)	19	NA
9	Middle rack (centre)	18	NA
10	Upper rack (south)	104	49

Notes:

1. RLU - Relative Light Unit
2. NA - no comparison post sample collected

The post surface swab area samples collected on the following surfaces indicated a reduction in RLU measurements between pre- and post-application sampling:

1. Sample 2 - Mezzanine railing wall
2. Sample 6 - Welding table
3. Sample 7 - Shipping/Receiving door
4. Sample 10 - Upper rack (south)



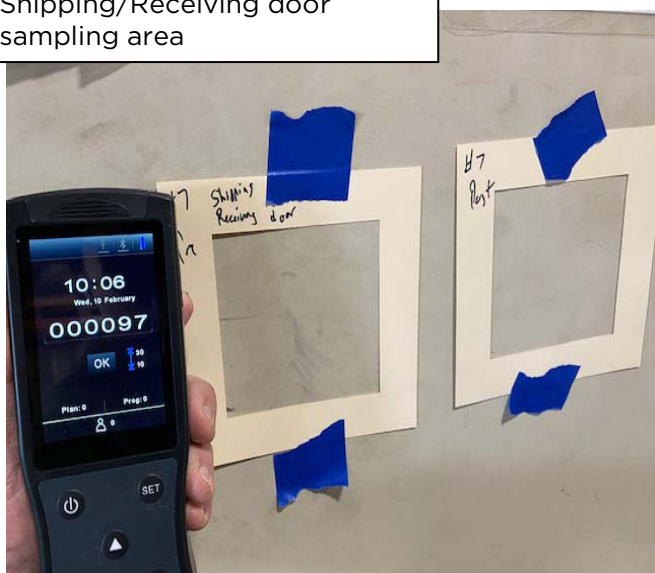
Mezzanine railing sampling area



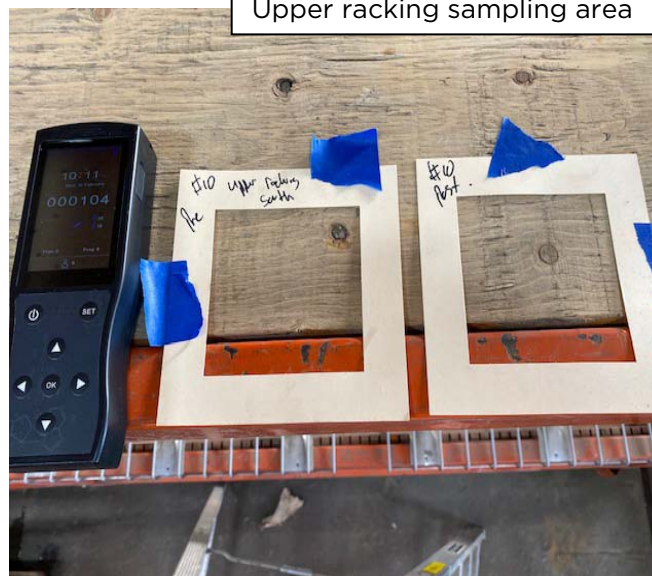
Welding table sampling area



Shipping/Receiving door sampling area



Upper racking sampling area



February 10, 2021

APSR arrived on-site for the pre and post ATP surface swab sampling during the compartmentalized release test within the office areas of the site. Duplicate sampling on 10 cm X 10 cm grids on random surfaces was conducted. No post sampling was conducted for pre-application surface swabs that were below 30 RLUs. The results of the surface samples collected are provided in Table 3: Surface ATP Swab Results Office.



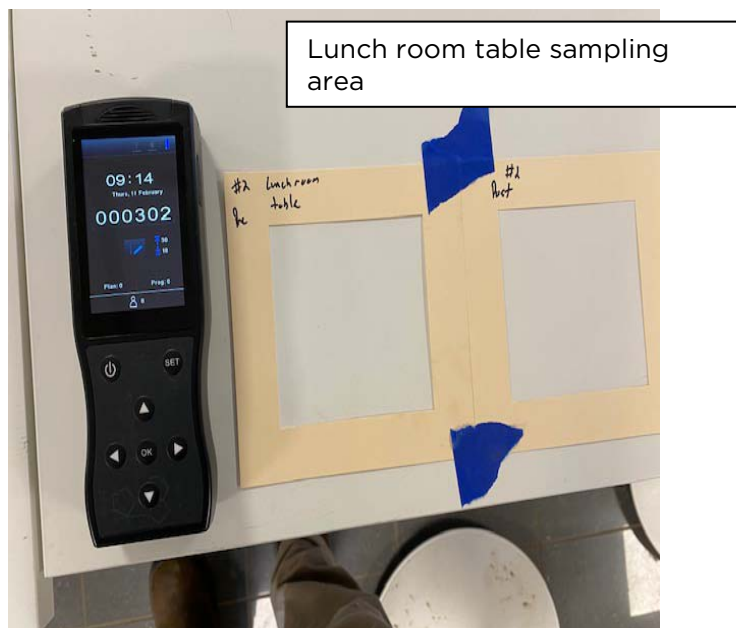
Sample Number	Sample Location	ATP Measurement Pre (RLU)	ATP Measurement Post (RLU)
1	Front reception desk	108	22
2	Lunch room table	302	1
3	Centre hallway door	81	29
4	Black lockers	9	NA
5	Lunch room fridge door	11	NA
6	SW office desk (Rob's)	128	64

Notes:

1. RLU - Relative Light Unit
2. NA - no comparison post sample collected

The post surface swab area samples collected on the following surfaces indicated a reduction in RLU measurements between pre- and post-application sampling:

1. Sample 1 - Front reception desk
2. Sample 2 - Lunch room table
3. Sample 3 - Centre hallway door
4. Sample 6 - SW office desk (Rob's)





Centre hallway door sampling area



SW desk sampling area



RECOMMENDATIONS

The sampling was conducted to provide ATP surface swab testing for the Electric HP site located at 607 15 Avenue in Nisku, AB.. Based on site sampling results, APSR makes the following recommendations:

1. The small, large and compartmentalized post application surface ATP swabs indicate that there is a reduction in RLU measurements when used with the hypochlorite based solution.
2. Fogging operations should be conducted as per the disinfectant/sanitizer manufacturers' recommendations. This may include, but not limited to:
 - a. cleanliness of surfaces
 - b. contact time on surface
 - c. concentration of sanitizer
3. Ensure the particulate size generated has the disinfectant/sanitizing properties required to work effectively on surfaces. The manufacturer(s) of the fogging solutions may have to be consulted to verify the solution(s) are working/used as intended. Literature from the SDS of the products indicates a mist or fog is required with a particulate size of at least 50 microns.

CLOSURE & LIMITATIONS

This report has been prepared in accordance with an agreement between AP Solutions and Resources Ltd and Electric HP. The services performed by APSR have been conducted in a manner consistent with the level of quality and skill generally exercised by members of its profession and consulting practices.



This report is intended for the sole use of Electric HP. Any use of this document or the findings, conclusions or recommendations provided in this report by any person other than the Client is at the sole risk of such user.

APSR will also not be responsible for the real or perceived decrease in a property value, its saleability or ability to gain financing through the reporting of factual information. No warranty or guarantee, whether expressed or implied, is made with respect to the data or the reported findings, observations, and conclusions, which are based solely upon site conditions in existence at the time of assessment.

In evaluating the facility, APSR has relied in good faith on information provided by others. We accept no responsibility for any deficiency, misstatements, or inaccuracies contained in this report as a result of omissions, misinterpretations or fraudulent acts of the persons involved.

APSR's assessment reports present professional opinions and findings of a scientific and technical nature. While attempts were made to relate the data and findings to applicable environmental laws and regulations, the report shall not be construed to offer legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations or policies of federal, provincial, or local governmental agencies. Any use of the assessment report constitutes acceptance of the limits of APSR's liability.

If you have any questions, require clarification, or would like to discuss the results, please feel free to contact the undersigned at (780) 328-4628. Thank you for retaining the services of APSR Environmental Health & Safety.

Sincerely,
APSR Environmental Health & Safety

Petro Cordero, BSc, BEH(AD), CPHI(C), ROHT
Project Manager

Reviewed By:

Adam Stokowski, B.A., B.Sc., BEH(AD), CPHI(C), ROHT
Project Manager