

## **Vapor Mitigation Controls**

The proposed vapor intrusion mitigation controls for the new manufacturing building at the Solvay site will consist of active controls, which will be the building HVAC system. The area of concern regarding the potential for vapor intrusion is the southwest portion of the building based on existing groundwater contamination in this area.

The active vapor mitigation controls are the HVAC system to prevent the infiltration of air into the indoor space. The building will have a positive pressure in relation to the outdoor conditions, which will prevent the vacuum effect that can draw vapors into buildings. The building will be positively pressured during occupancy, which is 24 hours a day, seven days a week, and 365 days a year. The HVAC system is designed based upon the latest version of ASHRAE 62.1, which determines the minimum outdoor air ventilation for acceptable indoor air quality for the buildings occupants. The air within the building will be changed over approximately six (6) to eight (8) times per hour. The United States Environmental Protection Agency's (EPA) guidance "Large Building Radon Manual" (EPA-600/R-97-124) identifies acceptable active controls as having the building maintain a positive pressure in relation to the outdoor air as well as designing the HVAC system operations based on ASHRAE standard 62.1.

In addition to the overall building HVAC system, air filtration units will be located in the fabrication area, manufacturing area, and heat treat area of the building. The fabrication area of the building will have approximately fifty-seven (57) air filtration units with each unit capable of filtering 8,500 to 10,000 cubic feet per minute (CFM) of air with a filter efficiency of 99.9%. The total particulate concentrations in the fabrication area will be monitored as part of Komatsu's worker safety program to monitor the air filtration systems' performance. The manufacturing area will have approximately forty (40) air filtration units with each unit capable of filtering 4,000 CFM of air with a filter efficiency of up to 95%. The heat treat furnaces located in the heat treat area of the building will have an exhaust system capable of exhausting 90,000 CFM.

In-situ soil stabilization (ISS) is occurring at portions of the site as part of an EPA non-time critical removal action (NTCRA) to remediate impacted soil at the site. The ISS treatment area is shown on Figure 1 in relation to the building. The ISS remediation consists of mixing a cement/water mixture in to the impacted soil to solidify and encapsulate the source impacts. This treatment will solidify the soil and the groundwater within the treatment area. The ISS monolith that is created has a permeability no greater than  $1 \times 10^{-6}$  cm/s and minimizes the flow of groundwater through it. The ISS treatment removes the source of the groundwater contamination, which allows natural attenuation to reduce the residual groundwater contamination.

To further minimize the potential for vapor intrusion and due to the soil quality at the site, utilities will not be placed underneath the building except for minor sanitary piping for worker bathrooms. This sanitary piping will be the only floor slab penetrations for the utilities.

RAILROAD

1993.07

N. 004731° E

N

PROPOSED AREA OF  
ISS TREATMENT  
WITHIN GREEN LINE

PROPOSED  
BUILDING

EXISTING  
PROPERTY  
LINE

698.17'

45.72°  
N 032216° E

0 150'  
APPROXIMATE SCALE

ENVIRONMENTAL CONSULTATION & REMEDIATION

PROPOSED BUILDING & ISS  
TREATMENT ZONE

**K P R G**

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Scale: 1" = 150'

Date: January 22, 2020

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FIGURE 1

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