Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 01/11/16

109 District Road: Sewer Holding Tank Capacity Analysis

Date:	October 21, 2015
To:	John Emerson Utility Coordinator, Portland Public Services 55 Portland Street, Portland, Maine 04101
From:	John Mahoney, P.E.
Subject:	Capacity Analysis to support the Location of Two Office Trailers at 109 District Road

PROJECT UNDERSTANDING

Winton Scott Architects is assisting the City of Portland with the installation of two portable office trailers within the City's stock yard and storage facility at 109 District Road off of Outer Congress Street. Ransom has been retained to provide utility design for the installation of these trailers. The trailers will provide office space for the City's Department of Public Services (DPS) staff. Each trailer will have two bathrooms for a total of 4 bathrooms.

The existing large storage shed on this site also contains a single bathroom, which will remain active. The storage shed was formally a sludge storage facility and contains a leachate collection system which drains to a 20,000 gallon underground holding tank. The leachate collection system consists of 3 catch basins and a piping network to capture leachate runoff from sewer sludge and convey it to the holding tank.

Based on conversations with John Emerson onsite on Monday October, 2 of the 3 catch basins that connect to the lechate system are currently plugged. The third catch basin is used periodically to capture runoff from catch basin sediment that is stored in the shed for dewatering. This third catch basin is plugged when not in use so that rain water is not conveyed to the holding tank. The City currently monitors the water level in the holding tank and pumps the tank when needed using City equipment.

John also indicated that the City's *longer* term plan is to pump wastewater from this site to a point where it could flow by gravity into the City's sanitary sewer system. This could be accomplished by installing a pump in the holding tank or installing a separate-small pump station/grinder pump.

The plan is to install the two new trailers onsite and pipe the wastewater from the bathrooms by gravity into the 20,000 gallon storage tank. Each trailer is proposed to have its own 4" sewer service that connects to a 6" sewer, which is part of the leachate collection system and drains to the 20,000-gallon holding tank (see Sheet C-1). The existing bathroom in the storage shed is currently and will remain connected to the storage tank.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 01/11/16

EVALUATION

The record drawings for the sludge storage facility indicate that the holding tank is 20,00(assume that there are 50 employees (20 for each office trailer and 10 for the existing Port District Office in the storage shed); then based on the Maine State Plumbing Code's desig gpd per employee the maximum time duration between pumping of the tank would be 26

CONCLUSIONS/RECOMMENDATIONS

Based on our understanding (above) and the calculations attached, it is our opinion that there is adequate capacity for the two office trailers. We recommend that the City check the wastewater level in the holding tank at least once a week when the tank is less than three quarters full and at least twice a week when the tank is three quarters or more full. Also, during time periods when the third catch basin is in use (not plugged) we recommend checking the wastewater level after storm events. This is particularly important after large storm events with southerly winds.

We also agree with the City's longer term plan to pump wastewater from this site to the City's sanitary sewer system and would recommend that the City conduct an evaluation to determine how best to proceed.

RANSOM
Consulting, Inc.

Byfield, Massachusetts 978-465-1822
Providence, Rhode Island 401-433-2160
Portsmouth, New Hampshire 603-436-1490
Portland, Maine 207-772-2891
Hamilton, New Jersey 609-584-0090

PROJECT NO. 151.06151
SHEET NO. 1
CALCULATED BY JIM
CHECKED BY SJB
SCALE NTS

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 01/11/16

Capacity of Holding Tank at former Sludge Storage Facility 109 District Road

Tank listed as 20,000 gallons on Record Drawings
Assume that tank must pumped when 90% full and that tank remains 10% full after pumping

20,000 x 80% = 16,000 gallons

Assume 50 employees at 12 gal/day/employee
= 600 gal/day

$\frac{16,000}{600}$ = 26.7 days = maximum time between pumping

Say 26

DELUXE FOR BUSINESS 1 800 888-6327