

Annual performance report for:

Ridham Dock Biomass Facility

Ridham Dock

Sittingbourne

Kent

ME98SR

Permit Number: **EPR/TP3536CL**

Year: 2018

This report is required under the Industrial Emissions Directive's Article 55(2) requirements on reporting and public information on waste incineration plants and co-incineration plants, which require the operator to produce an annual report on the functioning and monitoring of the plant and make it available to the public.

1. Introduction

Name and address of plant	Ridham Biomass Power Plant Ridham Dock Sittingbourne Kent ME98SR
Description of waste input	waste wood (grades B and C)
Operator contact details if members of the public have any questions	01795 342150

2. Plant description

Development of the Ridham Combined Heat and Power (CHP) biomass facility commenced in January 2012 and construction was completed in 2014. Commissioning was undertaken in two stages with the optimisation phase commencing once the commissioning two stages had been completed.

The cold commissioning stage covered the powering of electrical systems and other elements of the process, such as motors and drives, first distinct, and then coupled accordingly. This was to ascertain aspects such as functionality, correct voltages, control valve operation, insulation resistance, emergency stop effectiveness, reliability and calibration.

The hot commissioning stage commenced on the 1st December 2014 and was scheduled to conclude on the 25th May 2015 however a series of delays were encountered, resulting in the commissioning period being extended to the 15th September 2015.

Throughout the hot commissioning process, a series of tests were undertaken on the facility to gradually increase the load, and transferring from use of fuel oils to biomass, to ensure it was performing as intended and to optimise the process up to full load.

The facility specialises in the generation of energy from renewable biomass sources. The Facility is the second in the UK built by MVV Umwelt of Germany who have extensive experience of waste management over the last 50 years.

The facility is designed to process around 172,000 tonnes per annum of waste wood from various sources with a net electrical capacity of 23 megawatts.

The facility is capable of generating approximately 188 million kilowatt-hours of electrical energy, heat energy from the CHP process is typically used in district heating systems and as process steam for industrial purposes, though this element is currently not developed.

The fuel consists of old and used wood (processed wood and wood with slight to medium contamination such as chipboard, fibreboard and old furniture, and wood from building sites and demolished buildings) from the surrounding region. These types of wood usually cannot be re-used and have largely been exported to the continent for use in similar energy from waste facilities.

Biomass is an important part of a global clean power generation solution and biomass power plants divert non – recyclable wood waste away from landfills in order to reduce atmospheric release of methane and potent greenhouse gas.

3. Summary of Plant Operation

Waste wood (biomass) received	177,041 tonnes
Total waste received	177,041 tonnes
Total plant operational hours	8,484 hours
Total hours of “abnormal operation” (see permit for definition)	NONE
Total quantity of incinerator bottom ash (IBA) produced	9,707 tonnes
Disposal or recovery route for IBA	Disposal to hazardous waste landfill
Did any batches of IBA test as hazardous? If yes, state quantity	4 (IBA tested every quarter)
Total quantity of air pollution control (APC) residues produced	1,763 tonnes
Disposal or recovery route for APC residues	Disposal to hazardous waste landfill
Total electricity generated for export to the National Grid	197,527 MWh

4. Summary of Plant Emissions

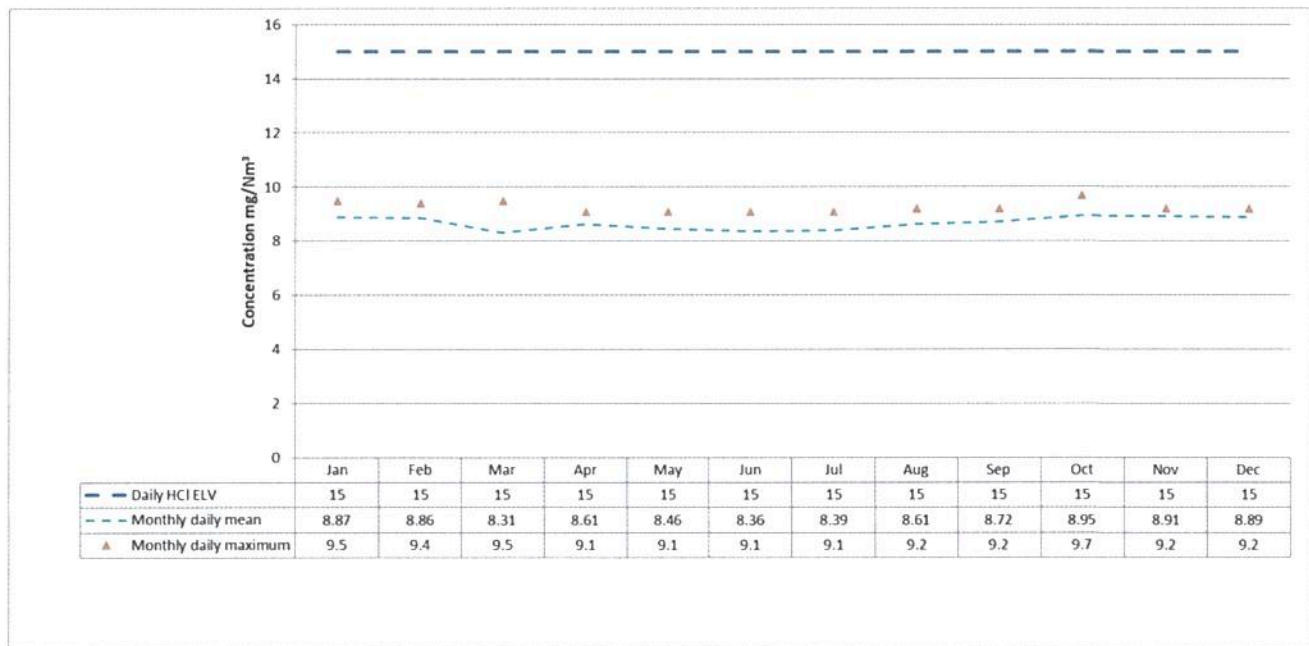
4.1 Summary of continuous emissions monitoring results for emissions to air

The following charts show the performance of the plant against its emission limit values (ELVs) for substances that are continuously monitored.

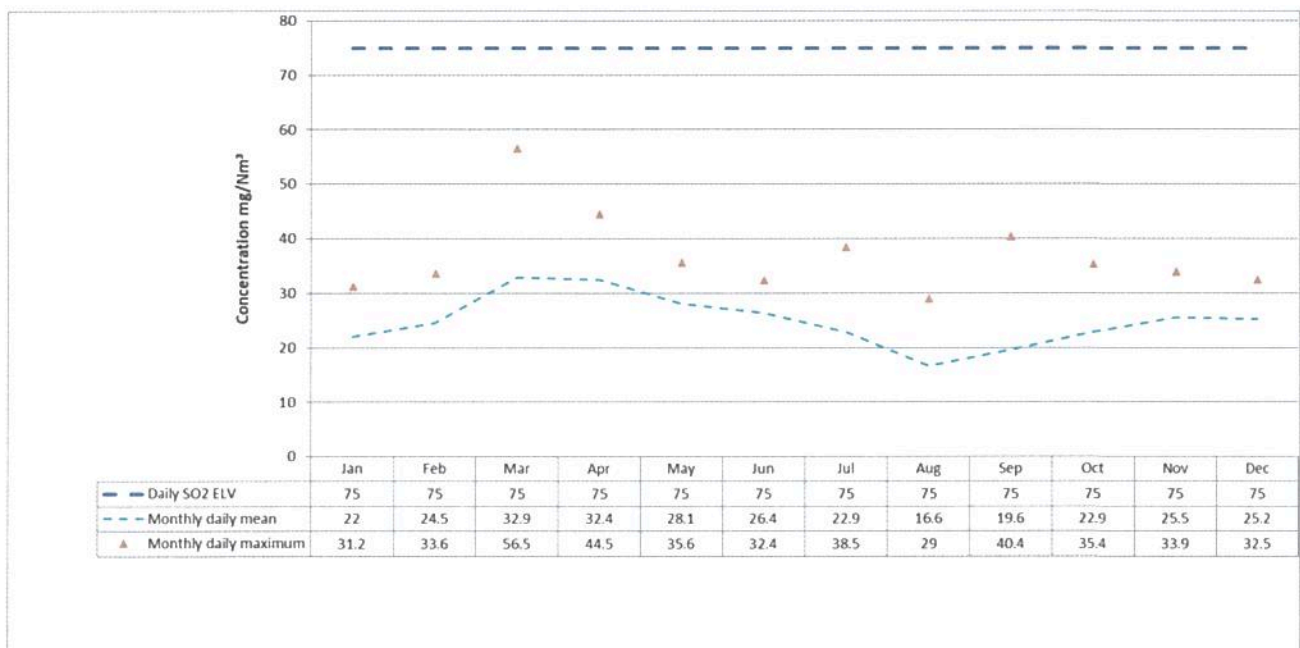


Monthly emissions
summary daily ELVs o

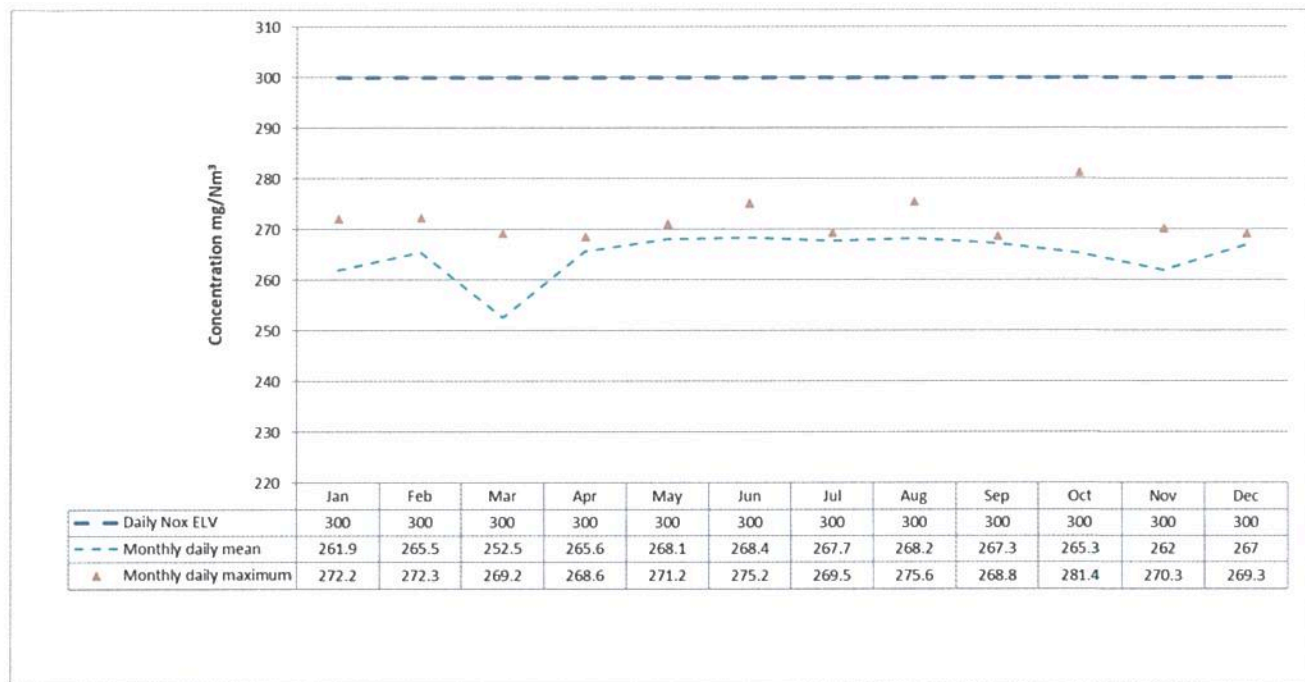
Hydrogen chloride



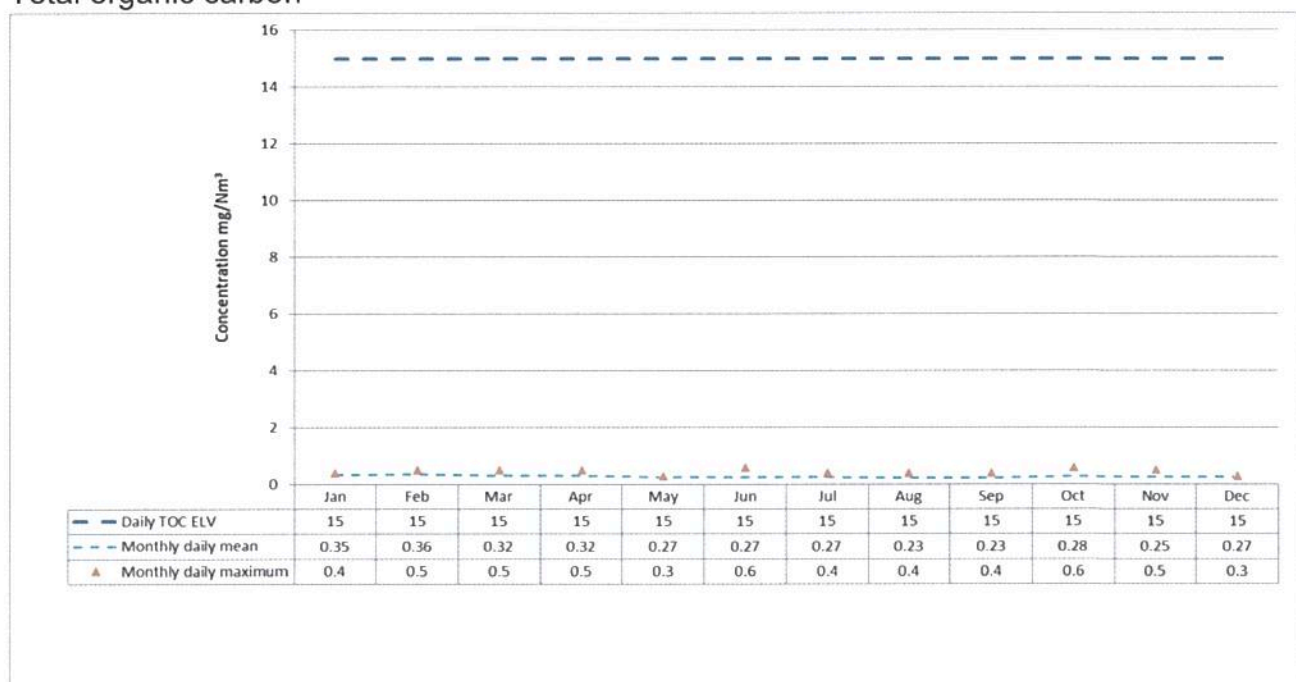
Sulphur dioxide



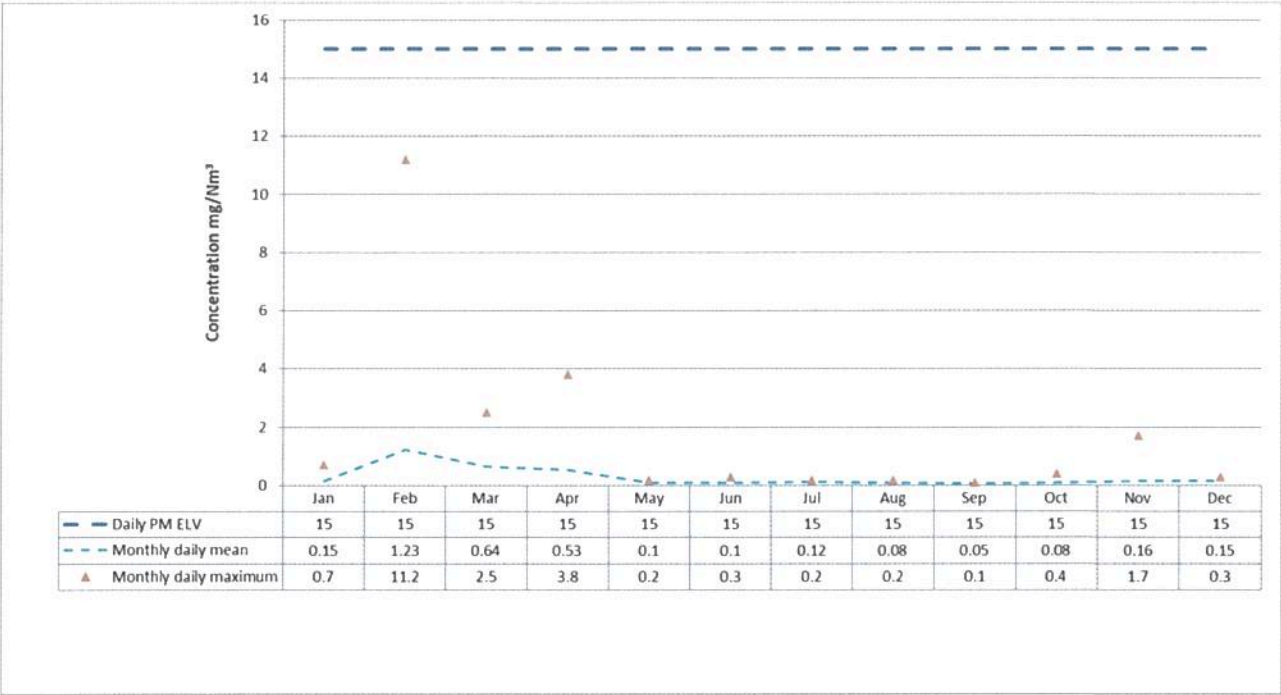
Oxides of nitrogen



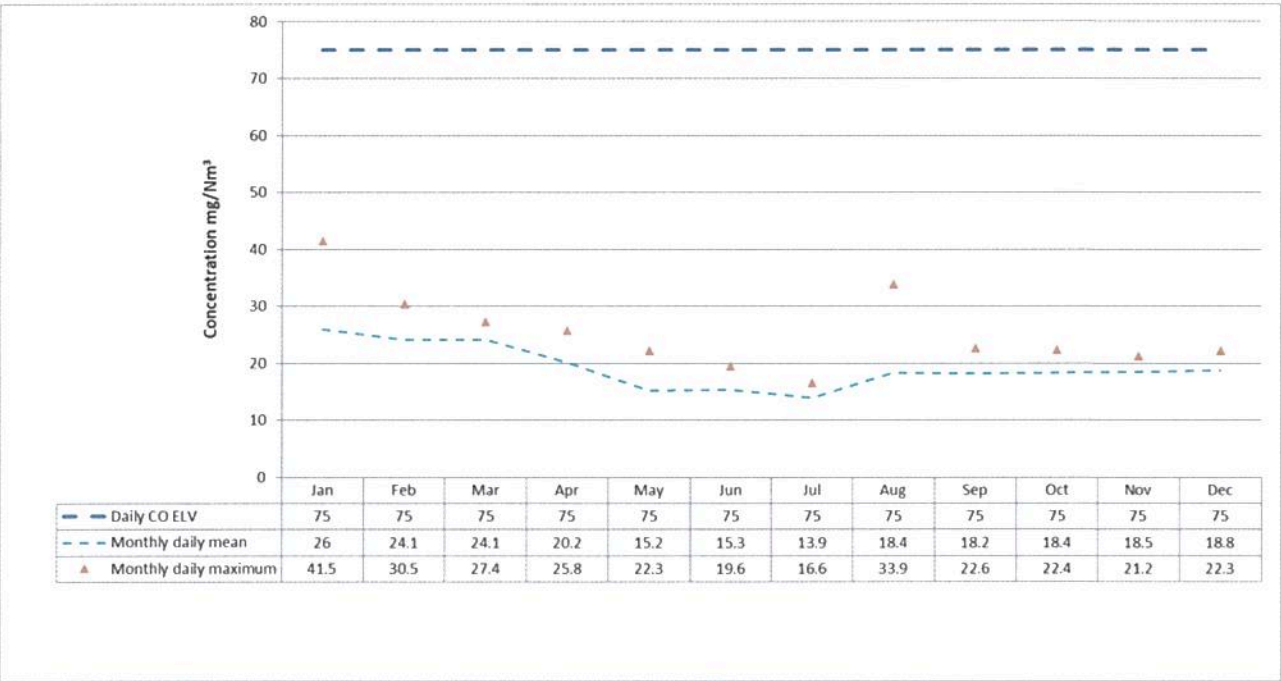
Total organic carbon



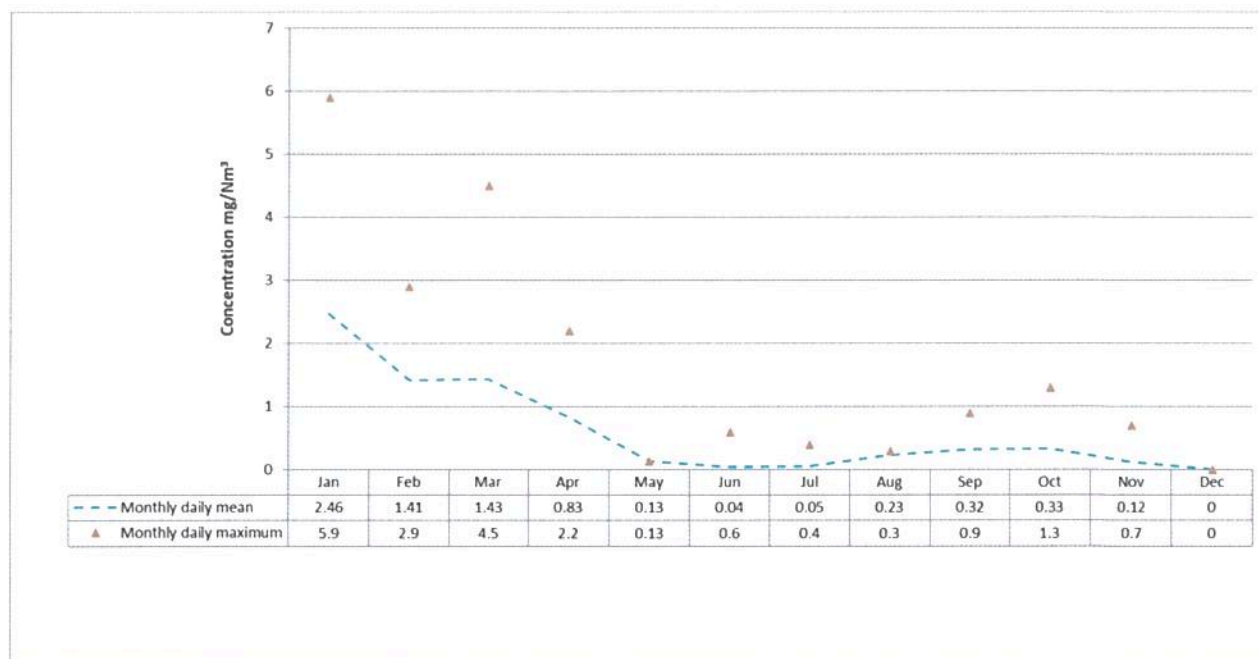
Particulates



Carbon monoxide



Ammonia



4.2 Summary of periodic monitoring results for emissions to air

The table below shows the results of periodically monitored substances.

Substance	Emission limit value	Results	
		31/10/2019	02/05/2018
Mercury and its compounds	0.05 mg/m ³	0.001 mg/m ³	0.001 mg/m ³
Cadmium & thallium and their compounds (total)	0.05 mg/m ³	0.002 mg/m ³	0.001 mg/m ³
Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	0.5 mg/m ³	0.120 mg/m ³	0.070 mg/m ³
Dioxins and furans (I-TEQ)	0.1 ng/m ³	0.0041 ng/m ³	0.01 ng/m ³
Hydrogen Fluoride	3 mg/m ³	0.01 mg/m ³	0.06 mg/m ³

4.3 Summary of monitoring results for emissions to water

There are no emissions to water from the process. All water produced by the process that may be contaminated is tankered off site.

5. Summary of Permit Compliance

5.1 Compliance with permit limits for continuously monitored pollutants

The plant met its emission limits as shown in the table below.

Substance	Percentage time compliant during operation
	Daily limit
Particulates	100 %
Oxides of nitrogen	100 %
Sulphur dioxide	100 %
Carbon monoxide	100 %
Total organic carbon	100 %
Hydrogen chloride	100 %

5.2 Summary of any notifications or non-compliances under the permit

Date	Summary of notification or non-compliance	Reason	Measures taken to prevent reoccurrence
	None		

5.3 Summary of any complaints received and actions to taken to resolve them.

Date of complaint	Summary of complaint	Reason for complaint including whether substantiated by the operator or the EA	If substantiated, measures to prevent reoccurrence
	None		

6. Summary of plant improvements

Summary of any permit improvement conditions that have been completed within the year and the resulting environmental benefits.
None
Summary of any changes to the plant or operating techniques which required a variation to the permit and a summary of the resulting environmental impact.
None
Summary of any other improvements made to the plant or planned to be made and a summary of the resulting environmental benefits.
Drainage repairs to water intrusion.