



## Engines Waste Water Treatment Plant Maintenance and Control

### VAIL-OPS-113

Affected Departments	
Engine Shop Clean & NDT	

	Role	Date
Originator	NDT Team Leader	29/09/2020
Reviewer	EHS Manager	29/09/2020
Process Owner	Repair Services Manager	29/09/2020
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ISSUE/REV NUMBER	SUMMARY OF UPDATE	DATE INCORPORATED
1.0	New Procedure	12/11/2019
1.1	Template update	29/09/2020

List of Abbreviations	
PPE	Personal Protective Equipment
PH	A scale used to specify how acidic or basic a water based solution is
Spot Samples	The whole sample volume is taken at one time.
Flow Samples	A collection of samples taken over a specific set time
COD	Chemical oxygen demand (COD)
WWTP	Waste Water Treatment Plant

Reference Documents	
MCERT	Monitoring Emissions to Air, Land and Water

Forms	
VAIL-OPS-113F01	Daily Maintenance Checks
VAIL-OPS-113F02	Weekly Maintenance Checks

## 1.0. **Purpose**

- 1.1. To define the maintenance and control procedures for the management of the treatment plant, building 97, to ensure such facilities operate in the most efficient and effect manner.

## 2.0. **Scope**

- 2.1. This procedure applies to the Engines Shop Waste Water Treatment Plant sited at the organisations StandardAero Gosport facility.

## 3.0. **Responsibility**

- 3.1. To improve quality of wastewater
- 3.2. Elimination of pollutants, toxicants
- 3.3. Preservation of water quality of natural water resources
- 3.4. To make wastewater usable for other purposes
- 3.5. Prevention of harmful diseases
- 3.6. To follow the guide lines outlined in MCERTS Monitoring emissions to air, land and water.



Building 97  
Water Treatment Plant

## 4.0. **Trained Staff**

- 4.1. Only trained Treatment Plant Staff, Supervision and Facilities personnel are allowed into building 97.
- 4.2. Clearwater Technologies sub contract staff are also permitted.

## 5.0. **Health and Safety**

- 5.1. All Local Health & Safety guidelines are to be followed at all times

- 5.2. The wearing of PPE is mandatory when working in the Treatment Plant
- 5.3. 3M Versaflow Facemasks are to be worn if any operator is involved in the use of Chemicals and/or is going to be in the Treatment Plant for any length of time.
- 5.4. It is good practice that the first Treatment Plant operator to go into the Plant that day, opens all the doors to allow a free flow of fresh air to the plant.



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**PPE To be worn when  
working with  
Dangerous Chemicals**

- 5.5. Workers in this Treatment Plant are exposed to a variety of hazardous chemical and biological materials contained within the effluents and the reagents used in the water processing or generated during the water treatment so utmost care must be followed at all times to ensure the operators safety.
- 5.6. A wall mounted safety shower is situated outside the rear door of the building in case of emergency situations were an operator gets chemical on himself or his work wear.

## **6.0. Lone worker**

- 6.1. Any Treatment Plant Technicians who have to spend time alone in the building must take a Lone worker alarm with them and sign it out. By activating the alarm security will be alerted of a potential issue.

## 7.0. Maintenance Checks

### 7.1. Treatment plant daily check list : Form

Checks	Monday	Tuesday	Wednesday	Thursday	Friday	Comments	Name
Outfall 500Min 6Ph Max 10Ph							
Hydrochloric Acid Tank Max 1000 Ltrs							
Sodium Hydroxide Tank Max 1000 Ltrs							
Sodium Bisulphite Tank Max 1000 Ltrs							
Ferric Sulphate Tank level Max 500 Ltrs							
Cationic Polyelectrolyte Tank Max 500 Ltrs							
Anionic Polyelectrolyte Tank Max 500 Ltrs							
Salt Bin level							
Sludge Drop & Tank Level							
Clean Ph Probe							
Tank Farm Inspection							
Check All Filtration Units for Backwash							
Check All Filtration Units for Regen							
Demin Water Conductivity Reading uS/cm							
Check all Alarms							
Check Bund area for any defects							
Daily outfall tank temperature , No greater than 43.3 C							

## 7.2 Treatment Plant weekly check list: Form

TREATMENT PLANT WEEKLY CHECKS

DATE



CHECK	READING/VALUE	NAME
CLENAING BAY WATER USAGE		
CLEANING BAY GAS READING CUBIC		
TREATMENT PLANT WATER USAGE		
TREATMENT PLANT OUTFALL M/3		
TREATMENT PLANT ELECTRIC		
OUTFALL PH PROBE CALIBRATION 2 Point check 7 PH & 10 PH		
BUFFER FLUID 7PH	Batch Number                      Exp Date    /    /	
BUFFER FLUID 10 PH	Batch Number                      Exp Date    /    /	
Emergency stop check		

## 8.0. WATER SAMPLING AND ANALYSIS

8.1. Water samples are to be sent to Envirochem for analysis every two weeks.



**Address:** The Gardens, 12-14 Broadcut, Fareham PO16 8SS  
The returned analysis values are to be added to the results graph

8.2. **How to take the samples**

- Five samples are taken.
- Three from outfall flow.
- Two from auto-matic sampler.
- When taking samples always wear clean gloves. Using a clean jug container fill the jug from the outflow tank and decant into the clean unused sample bottle provided by Envirochem.

8.2.1. These samples are

- *SPOT COD*
- *SPOT PH & TSS*
- *SPOT METALS*

8.2.2. From Auto-Matic Sampler bucket take two samples and decant into clean unused bottle provided by Envirochem and this will be called.

- *FLOW COD.*
- *FLOW Cd*

8.3. Samples are to be collected and taken to Envirochem on the same day. For short term storage the samples must be kept in the fridge. Fridge Temp Between 2-8 °C

8.4. **Outfall tank**

Samples: SPOT Cod: SPOT PH & TSS: SPOT Metals  
**PH Probe**





#### 8.4 Auto-matic sampler

Sample Flow COD & Flow Cd



#### 9.0. PH VALUE AND CALIBRATION

9.1. **Calibrating the PH meter**

- 9.1.1. All **pH meters** require **calibration** and will be calibrated once a week with \_\_\_\_\_ results recorded on weekly check Form.....  
The **calibration** will be a 2 point check @ 7 PH & 10 PH

- 9.1.2. **Calibrating the pH Meter.** Place the electrode in the buffer with a known **PH values.**  
Allow the **pH** reading to stabilize before letting it sit for approximately 1-2 minutes.

9.2. **Control panel PH Meter showing the PH value of the outfall tank**



### 9.3. **Buffer Solution**

- 9.3.1. The Buffer solution is purchased as ready made at a certain PH value and comes with a Certificate of Conformity and expiration date.



### 10.0. **Tank signage**

- 10.1. All Chemical Tanks and storage drums containing chemicals should be labelled with exact content of the tank. All other relevant information that can be added as well like percentage of Chemical, Shelf life and Batch numbers should be on display.

### 11.0. **Spillages**

- 11.1. All chemical spillages are to be cleaned and rinsed as soon as they are noticed. While cleaning up Chemical Spillages wear appropriate PPE. A spill kit is stored outside the rear door of the plant.
- 11.2. Place warning signs if necessary to warn others of the Hazard If a Major spill or leak is found report it to supervision or management straight away. Any leaks or floods within the Plant are contained in a sump that is below the Treatment plant.

**\* No floods will go to drain.**

**12.0. Housekeeping**

- 12.1. Keep the Water Treatment plant as clean and tidy as possible at all times where possible.
- 12.2. Do not block doorways and shutter as to allow quick exit and access at all times.
- 12.3. Ensure any Chemical drums are safely secured and lids on tight.
- 12.4. If any Chemicals are decanted into other bottles make sure the relevant chemical name and batch numbers are added to that container.

**13.0. Emergency Stop Buttons**

- 13.1. There are two emergency stop buttons with in the plant. One is on the main panel of instruments at the rear of the building and one on the wall at the front near the Outfall Tank.
- 13.2. The buttons immediately stop all pumps and water movement in and out of the building.
- 13.3. All water in the Cleaning Bay will stop until the reset button is engaged.
- 13.4. The emergency stop procedure is a required weekly test and is to be Recorded on Form

**13.5. Emergency stop at rear of building**



**13.6. Emergency stop on main control panel**

