

**Minutes of a Meeting of the Environmental Authority  
Held on Wednesday, 28 February 2024  
At the Department of Environment and Natural Resources, Botanical Gardens, Paget  
and Remotely using Teams Teleconference**

**PRESENT:** Ms. Davida Morris, Chair  
Mr. Eugene Saunders, Deputy Chair  
Mr. Willie Ferguson, Member  
Mr. Harry Matthie, Member  
Mr. Jonathan Starling, Member (by remote access)

**ADVISORS:** Dr. Geoff Smith, Environmental Engineer, DENR  
Dr. Shaun Lavis, Hydrogeologist, DENR  
Ms. Patricia Hollis, Environmental Officer, DENR  
Mr. Tarik Christopher, Acting Chief Engineer, Public Works (by remote access)  
Mr. Armell Thomas, Acting Chief Environmental Health Officer (by remote access and later in person)  
Ms. Crystal Baxter, Environmental Health Officer

**IN ATTENDANCE:**

Mr. Nazir Wade, Plant Manager, TBWEF Facility  
Ms. Zoey Roberts, Health Safety & Environmental Officer, TBWEF

**ABSENT:** Mr. Andrew Barnes, Member  
Mr. James Morrison, Member  
Mr. Paul McDonald, Acting Senior Planner, Dept. of Planning

**1. Confirmation of Minutes**

Confirmation of the Minutes of the meetings no. 389 held on 24 January 2024 and no. 390 held on 31 January 2024 were approved and signed by the Chair.

**2. BELCO**

Due to lack of time and IT issues, all BELCO matters were deferred.

**3. Presentation by Ministry of Public Works on Tynes Bay Waste to Energy Incinerator Annual Report 2022.**

• **Incoming Waste**

It was noted that the tonnage of combusted waste in 2022 was still trending downward since 2019. In 2018, 69,273 tonnes were combusted compared with 46,626 tonnes in 2022. This is likely due to the reduction in residential population. The composition of the waste remained the same.

The Plant Manager commented that periodically wood waste from Marsh Folly Compost Facility is incinerated to maintain boiler operations. Public Works was reminded of the need to apply for and receive the Authority's approval for the incineration of wood waste.

The disposal of cooking oil was discussed. Although a large volume (about 490 tonnes) were incinerated in 2022, cooking oil can be problematic for the facility by causing fires under the grate and in the tipping hall, and by presenting challenges for the cleaning of the electrostatic precipitator (ESP) insulators. Other disposal options have been researched, but none are viable. It is too costly to ship overseas or to make into biodiesel fuel for vehicles.

• **Electricity Generation**

The facility generated approximately 25060 MWh of electricity during 2022, about 17244 MWh (69%) was exported to BELCO. The remaining 31% was used internally for incineration and commercial water production processes.

- **Plant Availability, Shutdowns, Breakdowns and Exceedences**

It was noted that the plant is reaching the end of its life expectancy.

Stream 1 was operational for 245 days (67% of the year), Stream 2 was operational for 232 days (64% of the year).

Stream 1 downtime consisted of a planned 31 days (9% of the year) and unplanned 89 days (24% of the year). Stream 2 downtime consisted of planned 90 days (25% of the year) and 37 unplanned days (10% of the year).

The turbine generated electricity for 332 days (91% of the year) and turbine shutdowns were required to perform essential maintenance and due to electrical trips. The turbine had 0 days (0% of the year) of planned shutdowns and 33 unplanned shutdowns (9% of the year).

The Lindemann shear was in operation for 167 days (46% of the year).

Plant equipment failures include that of Crane B trolley failure on 7 April 2022 which impacted the ability to feed waste into the shredder for bailing. Only Crane A was left in service to feed waste into the incinerator. For five times in 2022, when Crane A was undergoing repairs, the incinerator had to be shut down.

- **Maintenance Summary**

No major work was done on Stream 1. The boiler was cleaned to complete the tube mapping in preparation for the major overhaul in 2023

Major boiler work was completed on Stream 2. Both super heater banks, part of the waterwalls, furnace roof, super heater attemperator valve, economizers and feed chute were replaced.

The soot blowers, control air and ash plant compressors and cranes were maintained.

- **Fire Protection Equipment**

The fire protection equipment was tested and maintained, and 2 drills were recorded for 2022.

- **Seawater Cooling**

The annual average chlorine in the cooling water was 0.10 mg/l, and the average seawater temperature increase was 5.06 °C.

- **Stack Emissions Testing**

This could not be undertaken in 2022 due to the contractor's backlog of emissions testing in the USA, post Covid-19 pandemic.

- **Activation of the Contingency Plan in 2022**

Stream 2 was offline for major scheduled maintenance 3 February through 14 March 2022. Bailing was initiated on 25 March and continued through 7 April. During these 6 days, 546 bales were produced. However, failure of Crane B resulted in the inability to feed waste into the shredder. As Stream 1 was in operation and the bunker was considered manageable, there was no immediate need to continue bailing. The 546 bales were returned and incinerated once both streams were operational.

- **Ash Management Programme**

It was reported that 1028.94 tonnes of ash were processed and 185 tonnes of metal removed. 2337.2 tonnes of unconsolidated ash and 1144.03 loads of ash cement were disposed of at the Airport Facility. No incinerator ash blocks were produced in 2022—due mostly to lack of available trucks.

The Tynes Bay representatives were thanked for their presentation.

#### 4. **Clinical Waste Incinerator (Mediwaste) Ash Disposal**

##### 1. The Authority **TOOK NOTE:**

that the number of 20ft shipping containers of biomedical waste in storage at the Airport Waste Management Facility remains at 17 containers.

##### 2. Mediwaste Ash Disposal Options

It was reported that the ash from Mediwaste was being stored at their site in St. Davids until an agreed disposal solution was determined. The ash analytical data has been received by

DENR and has been assessed. It was expected that the ash would have been found to be similar to that generated at the Tynes Bay Waste to Energy Facility and so the Mediwaste ash could be deposited into the bunker and incinerated alongside general garbage.

*a) Incineration of Mediwaste Ash with Tynes Bay Waste*

The results of the analyses show that Mediwaste fly ash is two orders of magnitude higher in dioxins and furans; these would be largely liberated and not captured if processed through the Tynes Bay plant with ESPs. The dioxin and furan content of the Mediwaste ash is not surprising considering their emissions abatement equipment (addition of lime and filtration to >0.005mm) and their lack of 'direct' flash cooling of exhaust gases with cooling air (i.e. via an 'indirect' cooling heat exchanger).

*b) Deposition of Mediwaste Ash into Tynes Bay Quench Tank*

The Tynes Bay Plant Manager confirmed that there is no practical way to safely incorporate the Mediwaste Ash into the Tynes Bay Quench Tank. The Tynes Bay system is sealed so it is not possible to introduce Mediwaste ash directly at the Quench Tank.

*c) Opening the bags and adding to the ash plant process or to the cement truck*

The Mediwaste ash could be harmful to health. It is not advisable to expose workers to ash.

*d) Dispose of sealed bags of Mediwaste at the Airport Waste Management Facility.*

Bags would be placed on a layer of ash cement, then covered with ash cement. It was acknowledged that there might be an environmental or health impact if the cell was opened in the future, either by excavation or by storms.

*e) Disposal overseas. May be very costly.*

*f) Co-disposal with containers of asbestos that cannot be repackaged or shipped.*

The Authority **TOOK NOTE:**

of the disposal options and requested the bags of ash be safely stored in sealed containers until a disposal solution was found. The Environmental Engineer said he had meetings planned with the Solid Waste Manager, Public Works, to discuss options. He will report back with his recommendations.

## **5. Applications for Construction Permits and Operating Licences (New)**

### **5.1. CP-811, OL-1242 Colvin Manning**

At their last meeting, the Authority approved the application for a construction permit and operating licence for a sand sifter at Lot 10, Seamount Lane, Smiths, subject to standard conditions and providing no objections are received during the advertised period. An objection was received on 1 February 2024 within the advertised period.

After considering both the grounds of the objection (dust, noise, vibration), and the applicant's rebuttal, the Authority **APPROVED:**

the construction permit and operating licence subject to standard conditions and providing the sand sifter is used at Lot 10 Seamount Lane, Smiths only for the duration of the home construction and with the processed material only to be used for that site. The Authority added that the use of sand sifters at construction sites is encouraged because it reduces the number of outbound truck journeys transporting the rubble for processing and return truck journeys of processed material for use in the construction. For this site an estimated >1300 truck journey would be required for ~1,645 Cu. Yds of excavated material with an 'HA' class of truck. It was noted, with input from Building Control at Department of Planning, that sifters are sat on large springs which would negate any vibration impacts of processing the material, especially compared to the vibration associated with the process of excavating the foundations. It was noted that complaints of dust, noise can be addressed by use of appropriate berms, location of equipment, wetting the site and tarpaulins over stockpiles if not stabilised with vegetation. There are many mobile sand sifters licenced for use at construction sites which do not need to secure approval for each site.

**5.2 CP-813, OL-1244 Bank of N T Butterfield, 11 Bermudiana Road, Pembroke**

The Authority **APPROVED:**

The application for a 400 kW diesel generator at 11 Bermudiana Road, Pembroke subject to standard conditions and providing: 1) that the applicant installs new acoustic louvres before the new generator is operated; and 2) the applicant undertakes noise measurements once the generator is installed to confirm compliance with the Authority's noise limits. It was acknowledged that the predicted sound at this site is difficult to model because of the existing 400 kW generator.

**5.3 OL-1245 to OL-1254 Sail GP/F50 League LLC, 1 Freeport Drive, Sandys**

The Authority **APPROVED:**

the Operating Licence applications for 10 125 kW moveable diesel generators that will be brought to Bermuda for the next SAIL GO event scheduled for May 2024. The generators will be exported after the event.

**6. Applications for Construction Permits and Operating Licences (Reissues)**

6.1 The Authority **APPROVED:**

the applications for reissue of operating licences listed on the four-page printout, subject to standard conditions, with the exception of: OL-114 BELCO controlled plant and OL-992, Greybar Holdings WWTP which was deferred pending submission of its annual report.

**7. Application for Import Permit**

7.1 The Authority **TOOK NOTE:**

of the issuance of an import permit to Karibuni for refrigerants R404a, R410a, and R407c, subject to standard conditions.

**8. Amendments to Well Diggers Licence Conditions**

8.1 The Authority **APPROVED:**

The amendment of standard conditions to require well diggers to ensure valid water rights are in place for any well digging or redrills. These shall be reported to DENR by drilling companies before applying for their next licence.

**9. Well Diggers Licences**

**9.1 WD-02 Atlantic Water Development Ltd.**

The Authority **APPROVED:**

the issuance of an annual well diggers licence to Atlantic Water Development, subject to standard conditions, and with a note reminding them to ensure active Water Rights are in place for all drilling jobs.

**9.2 WD-05 Aardvark Drilling Inc**

The Authority **APPROVED:**

the issuance of an annual well diggers licence to Aardvark Drilling Inc, subject to standard conditions.

**10. Applications for Water Rights (Reissues)**

10.1 The Authority **APPROVED:**

the reissuance of Water Rights on the three-page printout, subject to standard conditions, with the exception of four indicated as withdrawn.

**11. Date of the Next Meeting**

The next meeting was scheduled for 8:30 am, Wednesday, 27 March 2024 in the DENR Boardroom, Botanical Gardens, Paget

  
CHAIRMAN

27 MARCH 2024  
DATE