

**Minutes of a Meeting of the Environmental Authority  
Held on Wednesday, 6<sup>th</sup> December 2023  
At the Department of Environment and Natural Resources, Botanical Gardens, Paget  
and Remotely using Teams Teleconference**

**PRESENT:** Ms. Davida Morris, Chair (Initially by remote access, then in person)  
Mr. Eugene Saunders, Deputy Chair  
Mr. Willie Ferguson, Member  
Mr. Jonathan Starling, Member  
Mr. Andrew Barnes, Member (by remote access)

**ADVISORS:** Dr. Geoff Smith, Environmental Engineer, DENR  
Dr. Shaun Lavis, Hydrogeologist, DENR  
Mr. Tarik Christopher, Acting Chief Engineer, Public Works (by remote access)

**BELCO:** Mr Mark Pacheco, Director of OHSE and Business Continuity  
Ms Kascia DaSilva, OHSE Coordinator  
Ms Monique Lister, Director of Legal Services  
Mr Oliver MacKay, Outside Council Carey Olsen

**ABSENT:** Mr. James Morrison, Member (Failed to connect to the Webex meeting)  
Mr. Paul McDonald, Acting Senior Planner, Dept. of Planning  
Ms. Crystal Baxter, Environmental Health Officer  
Mr. Armell Thomas, Acting Chief Environmental Health Officer  
Ms. Patricia Hollis, Environmental Officer, DENR

**1. Confirmation of Minutes**

The Minutes of the meeting no. 387 held electronically on 25 October 2023 were approved and will be signed at the next meeting.

**2. BELCO Air Quality Updates, Information Requests and Annual Report Presentation**

**2.1 Environmental Authority letter to BELCO**

Following the BELCO response to the EA letter of the 31 August 2023 the Environmental Engineer presented each of the responses provided by BELCO to each point raised by the Environmental Authority. A subsequent meeting of the Authority will be required to determine what follow up response letter to BELCO will be required.

**2.2. Air Quality Updates**

The BELCO air quality update letter to the Authority for the month of October was received on the 10<sup>th</sup> November and revealed the following:

- A total of four (4) soot complaints were received over two occasions (8<sup>th</sup> & 31<sup>st</sup> Oct)
- Two (2) odour complaints from tanks located along St John's Rd (15<sup>th</sup> Oct – 1 day)
- There were not any exceedances of the Bermuda Clean Air Regulations at the monitoring stations: BDA#1 (Cemetery Lane) or BDA#2 (Langton Hill).

**2.3 Tank Water Sampling**

**The Authority TOOK NOTE:**

that DENR had reviewed the draft BIOS report on combustion-related pollutants analysed from 10 water tanks in the vicinity of BELCO in mid-October. The provisional data highlighted that there were no exceedances of the Bermuda or US drinking water 'primary' standards. One property demonstrated an exceedance of the 'secondary' drinking water standard for iron and another for aluminium, which are considered to affect aesthetic properties of the taste or clarity of the water samples.

**2.4. BELCO Annual Report Presentation**

Mr Pacheco and Ms DaSilva presented a summary of the annual report that had been submitted to DENR on the 1<sup>st</sup> August 2023. The information provide below summarises the content of the presentation:

- Number of **Controlled Plants**: 8 Diesel Engines (E5-E8, N1-N4), 4 Gas Turbines and 1 Oily Water Treatment Plant. Maximum generating capacity: 142 MW with 14-16 MW of distributed solar PV power on island [and up to 7.9 MW from Tynes Bay Waste to Energy Facility].
- Fuel Consumption – delivered over 4x HFO shipments and 1x LFO shipment:
  - Heavy Fuel Oil: 699,481 bbl @ 1.99% sulphur (*i.e.* <2.00%)
  - Light Fuel Oil as ULSD: 29,665 bbl @ 0.00084% (*i.e.* <0.5%)
- Number of **Water Rights**: 44
- Number of **Registered Petroleum Storage Tanks**: 37
  
- **Environmental Management System**: BELCO continues to be certified to ISO14001:2015 with the necessary internal and external audits.
  
- **Monitoring**:
  - 6 of 8 baseload engine stacks are equipped with continuous in-stack opacity monitors.
    - There were zero exceedances of the 15% opacity limit in 2022 outside of the 20-minute concession provided for engine start-ups and shut-downs.
  - Two certified Visual Emission inspectors and certified Camera-based observers at BELCO.
  - Air Quality Monitoring:
    - In Use: BDA#1 (Cemetery Lane) & BDA#2 (Langton Hill):
      - Zero exceedances of the Clean Air Regulations for 2022.
      - There is a significant downward trend in nitrogen dioxide levels in the vicinity of BELCO (*i.e.* BDA#1 - Cemetery Lane) since the Old Power Station (OPS) engines were retired.
    - Awaiting new agreed site: BDA#4 (was located at Ocean Lane, Pembroke)
    - Meteorology: BDA#3 (Cemetery Lane)
  - Subsurface hydrocarbon recovery program was suspended in 2021 due to the demolition of the OPS and loss of many recovery wells. 19 monitoring wells remain. It is noted that a total of ~340 cubic metres of waste oil have been recovered from the groundwater beneath the site since 2001 with an estimated 20-40 cubic metres remaining. [The current operating licence conditions require BELCO to provide a Remediation Plan to DENR by the 31<sup>st</sup> December 2023 on the process to be employed and timeline to remove most of the contamination remaining largely below the OPS site.]
  - Ambient vibration monitoring program: Is available as a portable monitoring system to respond to complaints that relate to vibration from BELCO.
  
- **Oily Waste Management Program**
  - 153,216 USG of waste oil was recovered from plant operations in 2022.
  - All waste oil was exported to the US for processing.
  
- **Training**: The OHSE section manages the awareness training on a wide range of Standard Operating Procedures to operational BELCO personnel with 98% of employees having completed this training.
  
- **Leak Detection**: There was a total of 48 spills that occurred over 2022 equating to a total of 182 USG of various products being spilt. This was largely attributed to: (i) Pole-mounted transformers (30 spills; 54.5 USG) from the ~2,500 transformers in use around the island, and (ii) spills at the central plant (11 spills; 113.5 USG). All spills >5 USG or off the BELCO property were reported to DENR and cleaned up in accordance with the RBCA Guidelines.
  
- **Reporting**: BELCO provided all quarterly reports (Air Quality, Opacity and Water Rights/Remediation) and annual reports to DENR within the timeline provided in the Operating Licence OL-114, or shortly after where prior approval for an extension was granted by DENR.

- **Oil Spill Exercises:** OL-114 requires BELCO to practice a spill exercise each year under the BELCO Major Environmental Pollution Plan. The exercise in 2023 was based on a real incident of oily wastewater greater than 15ppm being discharged at the Oily Water Treatment Plant (OWTP) and the necessary response.

BELCO were questioned on the status of the changes to the NPS engines to reduce the amount of soot events. Further to the installation of piston shims and new piston crowns to increase combustion pressure, the more recent fuel management system has resulted in running the engines leaner (*i.e.* lower fuel/combustion-air ratio). BELCO consider, from engine measurements collected on the BELCO site, that these changes have reduced the frequency of soot events. The design stage of further changes to the NPS engines to address the soot emissions are also underway for 2024.

BELCO were also questioned on the status of the changes to reduce the fumes of hot oil/fuel in the vicinity of the tank farm located along St John's Road. Testing and replacing the activated carbon, which can be deactivated in the presence of high humidity, together with some air flows potentially exceeding the trapping efficiency of the activate carbon were discussed. Current works are also proceeding on the re-routing of certain vents through new dedicated pipework to a more southern location on the BELCO site.

**The Authority TOOK NOTE:**

And thanked the BELCO representatives for their presentation.

**3 Elbow Beach Waste Water Treatment Plant**

**The Authority TOOK NOTE:**

that there is nothing new to report: The main hotel is closed and in foreclosure, wastewater is received only from one restaurant and some of the apartments of Fritholme Gardens. The plant continues to operate without an activated sludge as a result of the low organic load. The effluent monitoring data for October 2023 remained consistent with that of previous months.

**4 Ministry of Public Works Tynes Bay Waste to Energy Incinerator October 2023 Operation Update**

**4.1 The Authority TOOK NOTE:**

**October 2023:**

- Stream #1 was available for 31 days and ran for 27 days. Down time was due to lack of trash / sufficiently dry trash.
- Stream #2 was available for 31 days, ran for 29 days. It was shut down for unplanned maintenance – wet trash causing chute blockage.
- The turbine was available for 31 days and ran for 29 days at 60% efficiency.
- Total waste processed (less metal) was 5,346 tonnes. Cooking oil processed was 44.4 tonnes
- Total electricity sent to BELCO 14 Sept to 14 Oct: 662 MWh. Total electricity produced for August was 2,355 MWh.
- Fifty-two (52) loads of ash-cement ash were disposed of at the Airport Waste Management Facility (AWMF).

**5 Clinical Waste Incinerator (Mediwaste) Update**

**5.1 The Authority TOOK NOTE:**

that a second 20ft shipping container of biomedical waste was delivered from the Airport Waste Management Facility to the Mediwaste Site, Southside, St. David's. The number of containers of biomedical waste in storage at the Airport Waste Management Facility was reduced to 17 containers.

**5.2 The Authority TOOK NOTE:**

That the independent contract to monitor emissions from the Mediwaste Facility is being re-scoped after the initial bid was higher than expected.

**6 Applications for Construction Permits and Operating Licences (New)**

**6.1 CP-757, CP-758, OL-1193, OL-1194 Bermuda Housing Corp**

The Authority **DEFERRED:**

the applications for construction permits and operating licences for two 300 kW diesel generators at 60 South Road, Warwick.

**6.2 CP-796, OL-1223 Bermuda Commercial Laundry**

The Authority **DEFERRED:**

the application for a construction permit and operating licence for a 150 kW diesel generator at 44 Ord Road, Warwick.

**6.3 CP-799, OL-1225 Huntley Towers Ltd.**

The Authority **DEFERRED:**

the application for construction permit and operating licence for a 102 kW diesel generator at Unit 1, 3 Tanglewood Road, Paget

**7 Applications for Construction Permits and Operating Licences (Reissues)**

**7.1 The Authority APPROVED:**

the applications for reissue of operating licences listed on the two-page printout, subject to standard conditions, with the exception of: OL-145 (Grotto Bay WWTP) and OL-1183 (BLDC WWTP). It is noted that the Annual Report for the Grotto Bay WWTP had been received but there remained some issues with the data presentation that required further clarification and OL-526, which is the replacement of a small generator with a slightly larger one. DENR is still waiting on the noise data for this replacement genset.

**8 Applications for Import Permit No. 190 Chilltech Ltd**

**8.1 The Authority APPROVED:**

the application submitted by the Chilltech Ltd for the importation of twenty-four (24) of 24 lb cylinders of R-404A.

**9 Applications for Water Rights (New)**

**9.1 The Authority APPROVED:**

**WR 5799** Beach Cove Trust, 13 Long Lane, Hamilton HS02. 150 IGPD abstraction well for domestic 44 IGPD RO system, subject to standard conditions.

**9.2 The Authority APPROVED:**

**WR-5800 / WR-5781** TP Holdco Ltd, Lots 18 C & D, Harbour Court North, St Georges. 380,000 IGPD abstraction wells for HVAC, subject to standard conditions in addition to:

- (i) Provided that all necessary Protected Species Permits have been granted. WR will only be valid once all protected species permits deemed necessary by DENR have been granted.
- (ii) A flexible fabric liner is used to protect the subsurface from fugitive concrete.
- (iii) The well design and depth of pumping shall be confirmed during applications for Protected Species Permits.

**9.3 The Authority APPROVED:**

**WR-5802** Atlantic Hotel Ltd 88 South Road, Warwick. Commercial 512 IGPD sewage disposal borehole and back-up borehole, subject to standard conditions.

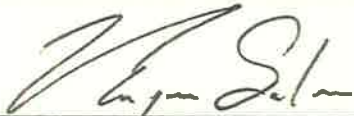
**10 Applications for Water Rights (Reissues)**

**10.1 The Authority APPROVED:**

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

**11 Date of the Next Meeting**

It was noted that the Environmental Authority will need to be re-nominated for 2024.

  
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CHAIRMAN

27 MARCH 2024  
DATE