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23 April, 2023

Mr. Jeff Mildner, Governor
Mr. Marc Gawthrop
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Re: Legal Opinion
E-BDN®, MARPOL and Related Compliance

Gentlemen:

On behalf of Vortex Development Group LLC (“Vortex”), owner of E-BDN®, E-Ship Safety®, E-STEM® systems, you have asked for our opinion concerning whether the bunker delivery notes/receipts (“BDRs,” interchangeably known as bunker delivery notes, “BDN’s”) which the Vortex Digital Bunker® software, E-BDN® generates are legally compliant and enforceable.

As we detail here, the BDN/BDRs which the Vortex E-BDN® software generates are legally compliant and enforceable.

The continuing international trend encouraging the use of electronic recordkeeping confirms that the Digital Bunker® E-BDN® system is not only an acceptable substitution for maintaining paper copies of bunker delivery receipts/notes (BDRs/BDNs), but that it should continue to be a preferred method for BDR/BDN recordkeeping, proof and authentication.

As explained herein, nothing in the International Convention for the Prevention of Pollution from Ships (MARPOL) present provisions including regulations, nor in the statutes and regulations of the United States, the United Kingdom, and Singapore (the current focus for Vortex’s implementation of the E-BDN®) require a paper copy of a bunker delivery receipt or a physical signature on that paper copy. Indeed, these jurisdictions have continued to encourage the use of electronic recordkeeping for reasons of efficiency, security, and waste reduction.

I. General, Current Requirements for the Contents of Bunker Delivery Receipts

MARPOL Annex VI, Regulation 18, Appendix V to the Annex VI though the current (2023) Amendments to Annex VI govern the contents of bunker delivery notes, which must contain the following information:

- The name and IMO number of the vessel receiving the fuel.
- Port (or description of the location, if the delivery does not take place at a port).

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- Date the fuel is delivered to the vessel (or the date on which the delivery begins, if the delivery begins on one day and ends on a different day).
- Name, address, and telephone number of fuel supplier.
- Fuel type and designation.
- Quantity, in metric tons.
- Density at 15 °C, in kg/m³.
- Sulfur content, as tested in accordance with ISO 8754:2003, in weight percent.
- A signed statement by an authorized representative of the fuel supplier certifying that the fuel supplied conforms to Regulations 14.1 or 14.4 and 18.3 of Annex VI consistent with its designation, intended use, and the date on which it is to be used. This statement in a BDN is not required, with respect to Regulations 14.1 and 14.4, if the vessel is not subject to fuel sulfur standards of Regulation 14 of Annex VI pursuant to a Regulation 3 or Regulation 4 permit or waiver. Per Regulation 18.8.1 of Annex VI, bunker delivery notes shall be accompanied by a sample of the fuel. The sample must be sealed and signed by a representative and the master or office in charge of the bunker operation, and must be retained on the ship for at least 1 year from the date of delivery;¹
- A “check box” system to confirm that the fuel supplied to the vessel can be used in compliance with the .5% (or in ECA zones .1%) cap; and
- Effective 1 May, 2024, either information on the flashpoint of fuel or, alternatively a statement that the flashpoint has been measured at or above 70°C.

In addition to specifying the content of bunker delivery receipts, MARPOL requires that a BDN/BDR be kept on board the ship for three years after fuel delivery.² The competent authority of the Government of a Party to the Protocol of 1997 may inspect and request a copy of the BDN/BDR, and may require the master or person in charge of the ship to certify that each copy is a true copy of such BDN/BDR.³ However, there is nothing to suggest that such copies may not be provided and kept aboard electronically or through electronic means. As stated above, MARPOL also requires that the bunker delivery note be accompanied by a representative sample of the fuel oil delivered.⁴

For practical purposes, it may be preferable to maintain a paper copy of the BDN/BDR with a representative fuel sample on board, but again, electronic copy of the BDN/BDR can be kept aboard as or more easily than paper copy.

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As we understand the E-BDN® system, once the delivery is made to the vessel and E-BDN® completed and signed, it contemporaneously is transmitted electronically to the vessel, supplier and others requesting the BDN/BDR. This eliminates the need to have paper copy carried back to the vessel and physically sorted, placed in some filing system and physically maintained. Digital Bunker® from Vortex delivers a series of emails with a PDF attachment(s) (for E-BDN®, E-Ship Safety® or sample bottle labels) instantaneously to all chain of custody stakeholders.

In addition to the Supplier and Receiving Vessel, stakeholders can include Banks, Customs Authorities, Port State Control, and most importantly, the IMO. Digital Bunker® E-BDNs® at the IMO can be used as a corroborating tool to validate mandatory vessel consumption reporting. E-BDN®'s can also be sent to a global archive managed by IHS Markit, the company responsible for administration of IMO numbers on behalf of the IMO (IHS Markit is now a division of Standard and Poor's).

There may be further, future IMO changes to required BDN/BDR content. Use of the E-BDN® avoids the mistaken use of superseded paper forms and allows for quick modification of the BDN/BDR form to reflect national, international or regional law changes.

Nothing also prevents adding explanation on, or in connection with the BDN/BDR form, however, of BDN/BDR requirements. The Digital Bunker® E-BDN® system can add this explanation, just as it adds automatic API 2004 volumetric and density calculations (from °API and Temperature value inputs), which replace the paper 1980 API Tables 6B and 54B now relied on for marine fuel delivery. The Digital Bunker® E-BDN® system thus offers more reliable compliance with fuel quality and quantity delivery requirements.

As noted above, BDN/BDR's must include a further "check box," through which the supplier declare that it provides the fuel relying on the purchaser's notice that the vessel (a) either will use the fuel with a scrubber ("equivalent means" under Annex VI, regulation 4) or (b) carries a trial exemption under Annex VI regulation 3.2.

This puts the supplier in the position (and certainly subject to later disputes) of having certified that it has actually relied on the purchaser's notice to provide compliant fuel to a vessel. If there is a question long after the provision of fuel, proving the notice could be difficult.

Each vessel which consumes otherwise noncompliant fuel, however, must carry a certificate of equivalent means of compliance, or exemption, under Annex VI regulations 4 and 3.2, respectively. The E-BDN® system allows suppliers to include with each BDN/BDR, a photo of the vessel's equivalent means or exemption certificate, so there is much less likely to be a dispute over whether the supplier had notice (or whether the purchaser ever provided notice) of the vessel's ability to use otherwise noncompliant fuel.

In this way the E-BDN® system reliably collects the necessary documentation for each fuel provision, so that it is ready for any later port state control inspection questioning whether there has been compliance with fuel sulfur content limitations.

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Consequently, as we understand it and especially with the upcoming likely modifications to the BDN/BDR which the MEPC has recommended, the E-BDN® system, the system will tend to minimize misunderstanding and data recording errors. It therefore may be considered more legally reliable and compliant than paper-based systems.

II. State-Specific Requirements

There is ample law and model law to support the effectiveness and legality of the E-BDN®. UNCITRAL's Model Law on Electronic Commerce and State law corollaries were created to address the growing need for alternatives to cumbersome paper recordkeeping methods that are error-prone and easily alterable for fraudulent purposes. The U.S., the UK (UK law on the subject controlling in Gibraltar), and Singapore are supportive of electronic recordkeeping and signatures, so long as a showing can be made that the recordkeeping and signatures are authentic, unique, and cannot be altered without consent of the parties.

Specifically, each jurisdiction treats the issue with respect to BDN/BDRs as follows:

a. The United States

United States law follows MARPOL in its requirements for bunker delivery receipts.⁵ The U.S. requires that both fuel suppliers and the owner/operator of the vessel keep copies of BDN/BDRs,⁶ a burden that would be considerably lightened by electronic BDN/BDR storage through the E-BDN®.

In the United States, electronic signatures are governed by the Federal E-Sign Act,⁷ which promotes the use of electronic signatures in international transactions to “[p]ermit parties to a transaction to determine the appropriate authentication technologies and implementation models for their transactions, with assurance that those technologies and implementation models will be recognized and enforced.”⁸ A signature, contract, or other record relating to any transaction in or affecting interstate or foreign commerce may not be denied legal effect, validity, or enforceability solely because it is in electronic form, and a contract relating to such transaction may not be denied legal effect, validity, or enforceability solely because an electronic signature or electronic record was used in its formation.⁹

U.S. law, however, requires that certain disclosures be made and that consent be obtained when a statute or rule exists that requires the transaction to be made available in writing. This would include:

- Obtaining consent to electronic recordkeeping;
- Providing a clear and conspicuous statement informing the parties of a right to opt out and sign with a paper signature, have the record made available on paper, and the method for withdrawing consent and obtaining a paper copy;
- Providing a statement of hardware and software requirements for access to and retention of electronic records and obtaining consent electronically in a manner that demonstrates that the consumer can access the information in the electronic form provided;

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- A continuing duty to update consumers on revised hardware and software requirements for access and retention of electronic records; and
 - Maintaining the disclosures so that they are accessible for consumers to view and retain.¹⁰
- Accordingly, E-BDN® should include a disclosure form and obtain user consent pursuant to these requirements.

Singapore:

Like the U.S. Code, Singapore’s Code of Practice for Bunkering requires compliance with MARPOL Annex VI.¹¹ In addition, any cancellation or amendment on the BDN must be endorsed and stamped by the cargo officer and the chief engineer.¹² Singapore law requires that “[a]t least two copies” of the completed BDN must be signed by the cargo officer and the chief engineer with their names clearly printed and stamped with the bunker tanker’s stamp and vessel’s stamp, and that a copy of the tank gauging/calculation form be attached with the BDN/BDR.¹³ The requirement for “two copies,” a clear reference to paper recordkeeping, reflects the current practice for BDN/BDRs, but does not mandate the antiquated practice.

The Singapore Electronic Transactions Act provides that contracts may be formed by means of electronic communications. Electronic signatures may be used provided that a reliable method is used to identify the person signing and to indicate that person’s intention with respect to the information contained in the electronic record.¹⁴ The Act requires commercially reasonable security procedures be in place to ensure that the electronic signature be verifiably (a) unique to the person using it, (b) capable of identifying such person, (c) created in a manner or using a means under the sole control of the person using it, and (d) linked to the electronic record to which it relates in a manner such that if the record was changed the electronic signature would be invalidated.¹⁵

Commercially reasonable security procedures must also be used to verify that the electronic record has not been altered.¹⁶ “Commercially reasonable” is defined by reference to industry standards and what others are using for similar types of transactions, among other things.¹⁷

We understand that the E-BDN® system captures GPS-tagged ship stamp photos, signatures, and answers to 23 International Safety Guide for Oil Tankers and Terminals (“ISGOTT”) delivery safety questions and IAPH checklists for conventional fuels, Methanol, Ammonia and LNG. The E-BDN®

system thus ensures proper security procedures are in place to authenticate the BDN/BDRs and the signatures they contain.

The inclusion of the GPS tags makes the secure electronic signature and vessel stamp, confirmed and preserved through the E-BDN® system, arguably more reliable and subject to later accurate confirmation than a physical, hand stamp and/or signature.

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UK:

UK law also follows the requirements of MARPOL Annex VI pursuant to the EU Sulphur Directive, and like the nations above, the UK recognizes the validity of electronic signatures through the UK Electronic Communications Act 2000 (ECA). The authenticity and integrity of the signature are important for determining a signature's validity, which is determined by whether the communication or data comes from a particular person or other source, whether it is accurately timed and dated, whether it is intended to have legal effect, and whether there has been any tampering with or other modification of the communication or data.¹⁸ Again, the Digital Bunker® E-BDN® system utilizing GPS tagging and embedded timestamping of photographs of vessel stamps and signatures, and securing those digitally, makes it less likely than a physical, paper-borne signature and stamp to tamper with or modify.

Conclusion

E-BDN® keeps with the international encouragement of electronic recordkeeping and signature recognition. It is notable that since the Digital Bunker® system including the E-BDN® has been in use, there has been not a single issue of a bank doubting the authenticity of an E-BDN® nor contesting the delivered volume based on the calculations embedded in the software. We also understand that for nearly the last three years many notable companies in the industry have all paid invoices based on Digital Bunker® E-BDN's® including Bunker Holdings companies, World Fuel Services, and Peninsula Petroleum.

To the extent possible, national laws regarding electronic signatures and recordkeeping should be consulted where relevant to revise the electronic recordkeeping and signature requirements for Digital Bunker® E-BDN®'s. Such examples include the U.S.' disclosure and consent requirements and Singapore's requirement for an attached tank gauging/calculation form. Care should also be given to ensure the continued cyber security of the BDN/BDRs, their authentications and accompanying documents. As we have detailed above, however, the BDN/BDRs which the Vortex's E-BDN® software generates are legally compliant and enforceable, and from a legal compliance and enforcement standpoint, for suppliers, their customers, and enforcement authorities, are superior to paper-dependent systems.

Sincerely,



J. Stephen Simms

¹ The International Convention for the Prevention of Pollution from Ships (MARPOL) Annex VI, Chapter 3, Regulation 18; MARPOL Annex VI, Appendix V; 40 C.F.R. 1043.80; *see also* United States Environmental Protection Agency Guidance on ECA Marine Fuel, EPA-420-B-14-097 (December 2014), available at: <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100LBX4.PDF?Dockey=P100LBX4.PDF>.

² MPEC Annex 13 (Amendment to MARPOL Annex VI), Reg.18.6.

³ *Id.* at 18.7.1.

⁴ *Id.* at 18.8.1.

⁵ 40 C.F.R. 1043.80.

⁶ *Id.*; EPA-420-B-14-097

⁷ 15 U.S.C. § 7001 *et seq.*

⁸ 15 U.S.C. § 7031.

⁹ *See* 15 U.S.C. § 7001.

¹⁰ *Id.*

¹¹ Singapore Code of Practice for Bunkering, SS 600:2008, Ch.1, 1.15.

¹² *Id.*

¹³ *Id.*

¹⁴ *See* Singapore ETA Pt. II, § 8.

¹⁵ *See* Pt. III, § 18.

¹⁶ *See id.* at § 17.

¹⁷ *See id.*

¹⁸ ECA Sec. 7 explanatory notes.