



بجهاز المساحة والتسجيل العقاري

Survey & Land Registration Bureau

**KINGDOM OF BAHRAIN**

**NATIONAL REPORT- NOVEMBER 2022**

IX<sup>TH</sup> ROPME SEA AREA HYDROGRAPHIC COMMISSION  
MEETING

(15 to 17 November 2022, Muscat, Oman)

**Prepared By:**

Hydrographic Survey Directorate  
Survey and Land Registration Bureau

## 1. Hydrographic Office / Service

- a. The Hydrographic Authority for Bahrain was established in 1978 as a Section within the Survey Directorate of Ministry of Housing. The Hydrographic Section became a Directorate within the Survey and Land Registration Bureau (SLRB) since 2008.
- b. The Hydrographic Survey Directorate's (HSD) main duties include traditional bathymetry, tidal analysis and tidal stream measurement within the territorial waters of Bahrain and producing appropriate navigational charts for the EEZ.
- c. Since the mid-nineties all hydrographic data have been transformed into digital format. The Directorate has approximately 95% of all data needed for chart production in digital form and uses a comprehensive pool of networked PCs during its data processing and quality assurance/control. As a member of IHO and the United Nations, Bahrain is committed to provide safe water passage for all ships approaching our ports according to UN resolution regarding International Law of the Sea especially Safety of Life at Sea (SOLAS).
- d. HSD plays a vital role in improving Bahrain's Infrastructure & Economy by ensuring safe navigation, monitoring of sand search projects and reclamation. HSD also renders highly accurate surveys for the private sector in projects like developing new berths/jetties, reclamation projects, construction of marinas etc. at very nominal price in comparison to private survey companies.

## 2. Hydrographic Surveys:

- a. Regular surveys for updating the navigational charts where the depths are suspected to have changed being conducted regularly.
- b. REMAAL Project: Bahrain has started an extensive sand search program to map all the sand resources in Bahraini waters. The project has commenced in 2020 and it is a combined effort from various government agencies.

3. New Charts and updates:

- a. ENC's: Bahrain produces 8 ENC's and they are distributed through IC-ENC. The future plan is to produce the remaining 8 ENC's
- b. INT charts: Bahrain produces 5 INT Charts
- c. National Paper Charts: Bahrain presently has 17 paper charts. A new chart (Chart 15001) for the northern waters of Bahrain was published in April 2021.
- d. No other charts are produced by Bahrain and there were no problems encountered in chart production and distribution.
- e. The list of Bahraini charts and products are as below:

<b>Chart No.</b>	<b>Title</b>	<b>Edition</b>	<b>Scale</b>	<b>Datum</b>
1501 INT7258	Mina' Salman and Approaches	Sep 2018	1:15000	WGS 84
1502 INT7259	Mina Manama and Approaches	Feb 2012	1:15000	WGS 84
1503 INT7261	Khalifa Bin Salman Port	Sep 2018	1:15000	WGS 84
1504	Approaches to Port of Sitrah	Sep 2018	1:15000	WGS 84
1505	Approaches to Bahrain Southern Part	Jan 2016	1:15000	WGS 84
1506	Approaches to Bahrain Central Part	Jan 2016	1:15000	WGS 84
1507	Approaches to Bahrain Northern Part	Jan 2016	1:15000	WGS 84
2001	Sitra to Umm Jalid	Feb 2012	1:20000	WGS 84

2502	Hawar	Mar 2004	1:25000	WGS 84
5001	Sitrah to Tighalib	Feb 2012	1:50000	WGS 84
5002	Hidd Al Jamal to Hidd Al Theeb	Nov 2008	1:50000	WGS 84
5003	Al Baynah al Saghirah to Ra's Al Barr	Feb 2012	1:50000	WGS 84
5004 INT7255	Approaches to Bahrain	Feb 2012	1:50000	WGS 84
5006	Hayr Shutayah to Khawr Fasht	May 2011	1:50000	WGS 84
6501 INT7254	Outer Approaches to Bahrain	Sep 2018	1:65000	WGS 84
10001	Khawr Fasht to Janan	Feb 2012	1:10000	WGS 84
15001	Umm Al Na'san to Hayr Bulthamah	Apr 2021	1:150000	WGS 84
P700	Tide Tables	Annual Editions		
P701	Tidal Streams Atlas	Sep 1997		
P702	Symbols, Abbreviations & Terms Used on charts - Chart 1	Apr 2006		
Electronic Navigation Charts (ENC) 1501, 1503, 1504, 1505, 1506, 1507, 5006, 6501 to IHO S57 Standards				
Customized Charts, soundings, tidal and water temperature data as per customer requirement				

#### 4. New Publications & Updates

- a. New publications: Annual tide Tables for 2020, 2021 and 2022 were published during the period under review.
- b. Bahrain also produces Tidal Stream atlas and Chart symbols & Abbreviations book. These publications will be updated as and when more data is gathered.

- c. The publications are sold over the counter at Hydrographic Survey Directorate and no problems encountered in production and distribution of the tide tables.

5. MSI

- a. Existing infrastructure- Controlled and coordinated by Ports & Maritime Authority (PMA) under Ministry of Transportation & Telecommunications as NAVAREA IX sub coordinator and it's obligations are delegated to MENAS.
- b. New infrastructure – NIL.
- c. Problems encountered – NA

6. C-55

Adequately Surveyed	Not adequate	No survey
<p style="text-align: center;">84%</p> <p>All navigationally critical areas such as approach channel, and harbor and the northern area has been surveyed to 100%</p>	<p style="text-align: center;">10%</p> <p>Few areas in the west coast and southern parts requires re-surveying of the water ways frequented by small crafts as these surveys are more than 20 years old.</p>	<p style="text-align: center;">6%</p> <p>The northern most part of Bahrain's seas requires survey. Efforts are in hand to survey these areas</p>

7. Capacity Building:

- a. Bahrain fully supports the IHO Capacity building program and effectively utilizes the courses offered under this program. Bahrain has no training centers and hence depends on other institutes worldwide for training its staff.
- b. One Cartographic staff is presently undergoing GeoMAC CAT B course in Taunton, UK.

- c. SLRB staffs attended the online ENC technical conferences by IC ENC.

## 8. Oceanographic activities

- a. General – Bahrain has different government organisations and departments that deal with oceanographic activities and HSD is in close working relationship with these organisations.
- b. Tide Gauge Network – Bahrain has a total of 12 automatic radar type tide gauge systems that cover the entire coast of Bahrain. This project was completed in 2014 and the 12 stations are continuously monitoring tide at every 10 minutes interval. Tide Gauges in these stations are fully automated, highly precise and with GPRS connectivity

## 9. Other activities

- a. Participation in IHO Working Groups: Bahrain is actively involved in the IHO Programs as well as Regional Hydrographic Commissions (RSAHC) programs.
- b. Meteorological data collection: Presently the meteorological data is collected by the meteorological department and it is shared with HSD. Studies are underway to have different meteorological sensors integrated to the existing tide gauge network for collection of data.
- c. Geospatial studies: HSD is in close working relationship with other government agencies in Bahrain for geospatial data management and studies.
- d. Magnetic/Gravity surveys: HSD is progressing with discussions with Oil and Gas authorities for magnetic and gravitational surveys of the Bahraini waters.
- e. International: Bahrain has bilateral cooperation agreement with UK and USA, and they are renewed periodically.

## 10. Conclusion

Bahrain Hydrographic Survey Directorate is committed towards fulfilling its mandate of having adequately surveyed safe navigational routes for the waters of Bahrain. HSD also had a successful year and maintains good cooperation with various government agencies and contribute towards the economic and strategic growth of Bahrain.