The aim of this study is to determine the Aluminum concentration in groundwater resources of Sistan and Baluchestan province, Iran. See the data in this article. For the purpose of this study, a total of 871 water samples were collected and values of quality parameters including pH, turbidity, total dissolved solids (TDS) and Aluminum concentration were measured (with two-time repetitions) according to Standard Methods for the Examination of Water and Wastewater, during the year 2016. The mean, maximum, minimum of Aluminum concentrations in all groundwater resources of Sistan and Baluchestan province, were: 0.015, 0.059, 0.0004 mg/l, respectively and also, the standard deviation was 0.012. Moreover, employing GIS software, the geo-statistical distribution of Aluminum concentration in groundwater aquifer in Sistan and Baluchestan was mapped.

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## Specifications table

| Subject area                  | Environmental Sciences                  |
|-------------------------------|----------------------------------------|
| More specific subject area    | Heavy metal (Aluminum)                 |
| Type of data                  | Tables, Figures                        |
| How data was acquired         | The pH and temperature parameters were measured by pH meter and turbidity meter, respectively. Also the measurement of the Aluminum concentration levels in the water samples was carried out using Atomic Absorption device (Analytic Jena AA6 vario 6). |
| Data format                   | Raw, Analyzed                           |
| Experimental factors          | Determine the concentration levels of Aluminum |
| Experimental features         | Water samples were carried out using Atomic Absorption device (Analytic Jena AA6 vario 6). |
| Data source location          | Sistan and Baluchistan, Iran            |
| Related research article      | M. Radfard, M. Yunesian, R. Nabizadeh Nodehi, H. Biglari, M. Hadi, N. Yosefi, M. Yousefi, A. Abbasnia, AH. Mahvi. Drinking water quality and Arsenic health risk assessment in Sistan-and-Baluchestan, Southeastern province Iran. Human and Ecological Risk Assessment: An International Journal (2018) (DOI:10.1080/10807039.2018.1458210). |

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## Value of the data

- Determination of the water parameters including Al, pH, TDS, Turbidity in ground water resources was conducted in Sistan and Baluchistan province, Iran.
- Data with Arc Gis zoning can help to better understanding the quality of ground water in this area.
- According to national standards, the concentration levels of Aluminum were within the standard range during the studied period. Therefore, consumption of water resources of this area likely will not cause any health problems associated with Aluminum metal.

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1. **Data**

Tables 1 and 2 shows the minimum, mean, maximum and standard deviation of studied parameters including Al, pH, TDS, and Turbidity in the groundwater of the different cities (8 cities) of the Sistan and Baluchestan province. Also Fig. 1 illustrates the geo-statistical.

Distribution of Al concentration. In addition to, the mean of the total parameters in the studied area presented in Table 3.

2. **Experimental design, materials and methods**

2.1. **Study area description**

Sistan and Baluchistan province one of the large province of Iran, located province between 58°55’- 63°20’ eastern longitude and 25°4’- 31°25’ northern latitude, south of Iran [1] (Fig. 2).

2.2. **Sample collection and analytical procedures**

This study was conducted in Iranshahr, Chabahar, Khash, Zahedan, Zabol, Saravan, Sarbaz, Konarak, Zehak and Nik Shahr counties in Sistan and Baluchestan province. In the year 2017. Sampling was
Table 1
Minimum, mean, maximum and standard deviation of Al and pH in different cities of the province.

| City    | Number | Al (mg L\(^{-1}\)) | pH            |
|---------|--------|---------------------|---------------|
|         |        | Min     Average | Max    STDEV  | Min     Average | Max    STDEV  |
|         |        | 0.001   0.016 | 0.059 0.018 | 6.85    7.88   | 8.58 0.346  |
| Iranshahr | 124    | 0.004   0.012 | 0.021 0.005 | 7.37    7.805  | 8.27 0.236  |
| Chabahar  | 23     | 0.001   0.014 | 0.041 0.009 | 7.04    7.373  | 8.35 0.267  |
| Khash    | 69     | 0.001   0.016 | 0.042 0.013 | 4.21    7.894  | 8.3 0.247   |
| Zahedan  | 54     | 0.001   0.015 | 0.036 0.014 | 7.14    7.892  | 8.15 0.234  |
| Zabol    | 16     | 0.001   0.014 | 0.059 0.013 | 6.81    7.816  | 8.3 0.285   |
| Saravan  | 247    | 0.001   0.013 | 0.038 0.011 | 7.22    7.706  | 8.2 0.3     |
| Sarbaz   | 23     | 0.001   0.013 | 0.042 0.01  | 7.34    7.772  | 8.25 0.197  |
| Konarak  | 113    | 0.001   0.014 | 0.048 0.014 | 7.09    8      | 8.37 0.227  |

Table 2
Minimum, mean, maximum and standard deviation of TDS and Turbidity in different cities of the province.

| City    | Number | TDS (mg L\(^{-1}\)) | Turbidity (NTU) |
|---------|--------|----------------------|---------------|
|         |        | Min  Mean  Max  STDEV | Min Average  Max STDEV |
| Iranshahr | 124    | 241 1049.47 3130 570.82 | 0.19 0.638 4.28 0.589 |
| Chabahar  | 23     | 452 1313.61 2426 682.61 | 0.32 0.638 3.02 0.559 |
| Khash    | 69     | 439 1091.04 2573 524.09 | 0.19 0.684 4.67 0.878 |
| Zahedan  | 54     | 306 1870.28 9001 1178.74 | 0.2 0.699 5.7 0.991 |
| Zabol    | 16     | 425.6 546.4 702.72 388.19 | 0.23 0.917 1.6 0.451 |
| Saravan  | 247    | 114 934.5 2413 453.87 | 0.18 0.904 5.45 0.844 |
| Sarbaz   | 23     | 274 548.35 1965 226.43 | 0.16 0.913 7.5 1.348 |
| Konarak  | 113    | 956 1314.78 2035 329.61 | 0.23 0.842 4.46 0.957 |
| Nikshahr | 202    | 312 708.46 1542 273.84 | 0.2 0.637 3.65 0.557 |

Fig. 1. Dispersion of Al concentration (mg L\(^{-1}\)) by GIS software.
done from the water wells directly and also, in the lack of the direct access to the wells, samples were taken from the closest water distribution network that fed from wells. The GIS software and IDW interpolation method were used to determine the latitude and longitude of well locations. The location of the counties, the sampling sites and the dispersion of the Aluminum is shown in the Fig. 1. After surveying the studied area, 871 major water resources that were used for bathing, washing, and mainly for drinking, were selected within the 1-year-monitoring period and then mapped using the GIS software. Samples were collected using a plastic sampling containers, which were washed with 20% Nitric acid solution. Also, in order to protect samples containers from secondary pollution, they were preserved with plastic bags on the transportation to sampling sites. Finally, to

| Parameter           | Al (mg L\(^{-1}\)) | pH  | Turbidity (NTU) | TDS (mg L\(^{-1}\)) |
|---------------------|--------------------|-----|-----------------|----------------------|
| Max                 | 0.059              | 8.31| 4.5             | 2485.3               |
| Min                 | 0.0004             | 7.11| 0.211           | 391.07               |
| Average             | 0.015              | 7.8 | 0.763           | 1033.88              |
| STDEV               | 0.012              | 0.271| 0.774           | 514.02               |
| More than the permissible | 0%                  | 0% | 11%             | 79%                  |
| Number              | 871                | 871 | 871             | 871                  |

Fig. 2. Location map of the studied area and sampling site.
prevent microbial activity, the samples were stored in a Polystyrene box at 4°C and also, 2 ml Nitric acid was added to each one liter of samples to increase the stability of the them [12]. The pH and Turbidity parameters were measured at sampling site and measurement of TDS and Aluminum samples were performed according to Standard Methods for the Examination of Water and Wastewater in the laboratory [13]. To ensure the accuracy of the data, experiments were repeated after one week and also, it should be noted that sampling for repetition of the experiments, was done from the same sampling site. Finally, the data was analyzed using independent t-test and also, Excel 2007 software. GIS was used to plot the geostatistical distribution of Aluminum, and additionally, to identify the areas with maximum level of pollutants [2–5]. The pH and temperature were measured by pH meter and turbidity meter, respectively. Also, the measurement of the Aluminum concentration levels in the water samples was carried out using Atomic Absorption device (Analytic Jena AA6 vario 6) [14].

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Transparency document. Supporting information

Transparency data associated with this article can be found in the online version at https://dx.doi.org/10.1016/j.dib.2018.08.180.

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