The following text is a summary and english translation of latest findings provided by Solvay of the Introduction and the Conclusion of the original Study *'MONITORAGGIO DELLO STATO DI SALUTE DELL'AMBIENTE MARINO NELL'AREA ANTISTANTE LO STABILIMENTO SOLVAY DI ROSIGNANO M.MO (LI)' - 'Monitoring of the status of the marine environment in the area in front of Solvay Site of Rosignano M.Mo (LI)', published in 2020.*

*****Text in blue is from Solvay****

Context:

The study "Monitoring of the status of the marine environment in the area in front of Solvay Site of Rosignano M.Mo (LI)" responds to the requirements formulated in the IPPC permit AIA No.0000177 (07/08/2015), in the name of Solvay Rosignano site, and reports the activities carried out by the Institute for the Study of Anthropogenic Impacts and Sustainability in the Marine Environment (IAS) of the National Research Center (CNR), over the period September 2018- February 2020.

This study was commissioned by Solvay to the third party Institute and it is part of the monitoring program to be carried out in the decade starting from 2018 to the year 2028 *[every 2 years]*, in order to monitor the "Environmental Status" of the affected area, through the evaluation of the "Ecological Status" and the "Chemical Status" of the sea area in front of Solvay's Rosignano site (Livorno).

This monitoring study represents a specific in-depth study and adds to the monitoring independently carried out by ARPAT (Tuscan regional agency for environmental protection) on three-year cycles on the "Ecological status" and on the "Chemical status of all 16 Tuscan water bodies, including that of Rosignano, with 19 stations, along the 442 km of coastline of the Tuscan region.

Scope:

The achievement of these objectives required the carrying out of different monitoring activities that included: chemical investigations in different matrices (water, sediments), study of phytoplankton and study of the bioaccumulation of heavy metals along the food chain.

The activities covered an area of over 100 km2 in front of Rosignano's coast within the polygon shown in the following map

Figure 1: Investigation area

Methodology:

The sampling activities as well as the choice of the sampling stations and the assessment of the environmental quality of the concerned area, were carried out taking into account the results of previous studies concerning the same area and, in particular, of the "Environmental study on the status of the marine environment in the area in front of Solvay Site of Rosignano M.Mo (LI)" carried out by the same institute IAS-CNR (former IAMC-CNR) and concluded in 2016. This latter study represents a detailed baseline of the environmental quality status of the concerned area carried out by the same Authors and with respect to which the study "Monitoring of the status of the marine environment in the area in front of Solvay Site of Rosignano M.Mo (LI)" (IAS-CNR-2020) constitutes a subsequent monitoring.

Other qualifying points of the technical structure of the study "Monitoring of the status of the marine environment in the area in front of Solvay Site of Rosignano M.Mo (LI)"(IAS-CNR-2020) are summarized here below

- All analytical methods used both for the sampling phase and for all chemical analyses refer to international legislation (EPA) and to the various ISPRA protocols (Italian Higher Institute for Environmental Protection and Research) for the assessment of the EQB (Elements of Biological Quality) provided for in DM 260/2010, in application of Legislative Decree 152/06.

- Physico-chemical analysis of the sea water column and phytoplankton and zooplankton were carried out over 3 sampling campaigns in 12 sampling stations.

- Along the sea water column they were measured continuously, from 0.5 (surface) and, with a step of 0.5 m, to the bottom, with a multiparametric and fluorimetric probe, the following parameters: dissolved Oxygen (DO), pH, Temperature, Salinity, Chlorophyll-a.

- Seawater samples were taken at two depths (surface and bottom) for the measurement of the following parameters: nitrates, nitrites, ammonia, total nitrogen, reactive phosphorus (orthophosphate) and total phosphorus.

- Chemical-physical analyzes were also carried out on the taken seawater samples to measure the concentrations of total mercury, methylmercury and total suspended solids, using the reference methods provided for by national and international technical regulations.

- The data obtained were also used to calculate the trophic level of the coastal marine environment through the trophic index TRIX calculated in the various examined stations.

- The qualitative and quantitative analysis of phytoplankton was achieved through the composition (genus and species or in any case to the highest possible degree of taxonomic determination) and abundance of each taxonomic unit (cell /liter), reporting in particular the density of Bacillariophyceae (or diatoms), Dinophyceae (or dinoflagellates) and "other phytoplankton" including the classes Chlorophyceae, Chrysophyceae, Cryptophyceae, Cyanophyceae, Dictyochophyceae, Euglenophyceae, Prasinophyceae, Prymnesiophyceae, Raphidophyceae and the Coccolithophorids.

- Analyzes were carried out aimed at quantifying the content of heavy metals accumulated in the tissue of some species of edible marine vertebrates and invertebrates commonly fished by local fishermen.

- The "Chemical Status" of the water body in front of the Solvay plant was also assessed, with analysis of the sea water and sediment matrices in accordance with the provisions of Ministerial Decree 260/2010 supplemented by Legislative Decree 172/2015.

- Furthermore, for each of the investigated parameters, the data of this monitoring were compared with the values obtained in the previous baseline study "Environmental study on the status of the marine environment in the area in front of Solvay Site of Rosignano M.Mo (LI)" carried out by the IAMC-CNR in 2015-2016, which highlighted the progressive improvement of the environmental status of the area investigated (both for the abiotic and biotic sectors) compared to the industrial period prior to 1976.

Conclusions:

The comparison between the above described results of the baseline "Environmental study on the status of the marine environment in the area in front of Solvay Site of Rosignano M.Mo (LI)"(IAMC-CNR-2016) and the results of its subsequent monitoring study "Monitoring of the status of the marine environment in the area in front of Solvay Site of Rosignano M.Mo (LI)"(IAS-CNR-2020) allows to assess the evolution for all the fundamental elements of biological quality (EQB) over time (2016-2020) in the concerned area.

The results of the three monitoring survey campaigns conducted by IAS-CNR in the period between September 2018 and February 2020 and reported in " Monitoring of the status of the marine environment in the area in front of Solvay Site of Rosignano M.Mo (LI)"(IAs-CNR-2020)" are summarized below.

As regards the physical and chemical characteristics of the sea water, there is a prevalently seasonal variability of the parameters considered typical of Mediterranean coastal waters; however, the comparison with previous data shows a gradual change in the water column with

progressive acidification, average increase in temperatures and consequent reduction of DO (Oxygen Demand) levels, which seem mainly to reflect the effects of climatic changes that increasingly affect the coastal strip. Salinity remained slightly higher on average, although in line with the values measured in the previous baseline.

As also emerged in previous studies, a potential effect of seasonality and local conditions is also highlighted by the results of the total suspended solids measures, whose concentrations (lower in summer and autumn) showed no significant effects consequent to the production rate changes of the Solvay plant, but whose dispersion seemed rather linked to meteorological and climatic factors on small scale such as waves and wind.

As regards the presence of mercury in the sea water column, the concentrations of the dissolved fraction (DHg, µg/liter) were found in almost all the investigated sites in line with the EQS (Environmental quality standards) except in two sampling stations out of 12, both located south of the drain, where the concentrations in two samples out of 70, respectively recorded at the deep and superficial altitudes, were higher. The monitoring carried out has highlighted that the marine area facing the Solvay plant is characterized by the presence of methylmercury in the waters, in a rather extensive area. Concentrations in particular fluctuated between values below the detection limit (<dl) and 59.6 picog/liter, with values almost always higher at the bottom than the surface.

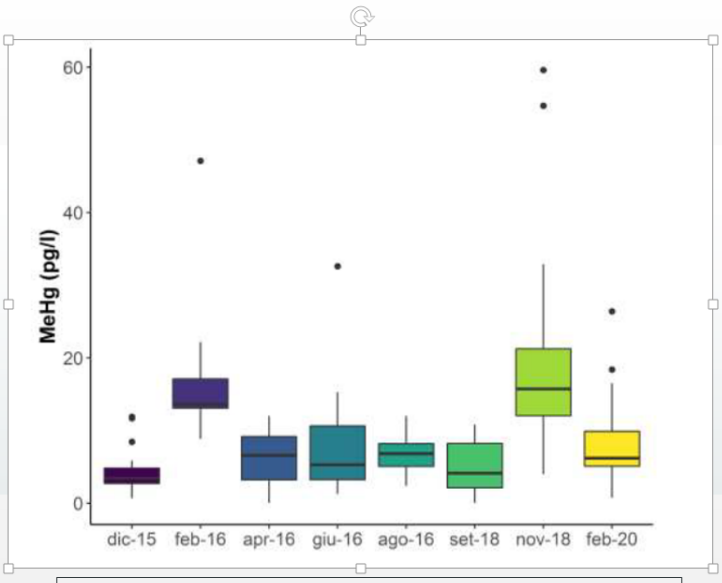
However, with particular exceptions, data obtained are similar to those reported in previous studies conducted in the concerned area (IAMC-CNR 2015-2017) and fall within the ranges of variation reported in the literature for other areas of the Mediterranean Sea.[1]

Table on Dissolved mercury and Methylmercury measured during the monitoring campaigns run by IAS- CNR
Source: " Monitoring of the status of the marine environment in the area in front of Solvay Site of Rosignano M.Mo (LI)"(IAS-CNR-2020)"

[1]Original text in the conclusion: "In particular, the concentrations ranged between values below the detection limit (<dl) and 59.6 pg l-1, with values almost always higher at the bottom than at the surface. In general, there was an average increase in concentrations compared to previous monitoring, especially in the campaigns conducted in 2018. However, with particular exceptions, the values fall within the range of concentrations recorded in the Rosignano Solvay area during previous studies (IAMC-CNR, 2015-2017)." - Replaced by the conclusion contained in the core of the study.

Stazione	set-18				nov-18				feb-20			
	MeHg, pg l^{-1}		DHg, µg l^{-1}		MeHg, pg l^{-1}		DHg, µg l^{-1}		MeHg, pg l^{-1}		DHg, µg l^{-1}	
	Sup	Fondo	Sup	Fondo	Sup	Fondo	Sup	Fondo	Sup	Fondo	Sup	Fondo
A1	0.76	8.18	0.03	0.02	7.91	19.2	0.02	0.02	5.23	3.48	0.01	0.01
A4	1.77	0.88	0.02	0.01	27.2	32.9	0.02	0.03	11.69	0.76	0.03	0.02
C2	8.83	9.68	<dl	<dl	3.98	16.9	0.03	0.07	6.44	5.06	0.03	0.05
B2	4.08	10.8	0.02	0.02	15.4	11.9	<dl	0.02	10.4		0.01	0.02
F2	4.48	8.63	0.02	0.02	5.25	13.3	0.01	0.03	9.60	26.4	<dl	<dl
F1	2.38	2.79	0.03	0.04	12.1	12.03	0.02	0.04	10.0	5.34	<dl	<dl
A3	<dl	8.59	0.02	0.01	54.7	23.3	0.02	0.04	18.4	3.90	<dl	0.00
B1	4.57	3.93	0.02	0.03	10.4	59.6	0.02	0.03	16.5	6.01	0.01	0.02
C1	0.9	2.42	0.03	0.02	18.6	14.4	0.03	0.03	3.50	5.97	0.01	0.02
B3	1.88		0.02		13.1		0.02		6.86		0.03	0.00
D1	8.18	8.28	0.02	0.01	16.1	20.8	0.02	0.02	7.84	7.00	0.01	<dl
N1	7.48	4.13	0.03	0.02	21.4	nd	0.14	0.02	3.29	5.27	<dl	<dl
SQA			***0.07***				***0.07***				***0.07***	
dl	*0.1*		*0.01*		*0. 1*		*0.01*		*0.1*		*0.01*	

Table on methylmercury values measured during all the campaigns run by IAS- CNR
Source: "Environmental study on the status of the marine environment in the area in front of Solvay Site of Rosignano M.Mo (LI)"(IAMC-CNR-2016) and " Monitoring of the status of the marine environment in the area in front of Solvay Site of Rosignano M.Mo (LI)"(IAS-CNR-2020)"



Box plot of methylmercury concentrations analyzed over the various experimental campaigns

Methylmercury concentrations reported from previous studies for the study area and other areas of the Mediterranean Sea

Area	MeHg *(pg l^{-1})*	Riferimento
Rosignano-Solvay	<d.l.-47.1	*IAMC-CNR (2015-2017)*
Mar Mediterraneo	4.01-58.2	*Cossa et al., 1997*
	38.1-78.2	*Horvat et al., 2003*
	20.1-92.3	*Tessier et. al., 2004*

Chemical analyses of nitrite, nitrate, phosphate, silicate and ammonia, carried out on sea water samples taken both at the surface and at the bottom, showed a strong oligotrophy of the marine system in the study area, in relation to sampling periods September 2018 and November 2018. In February 2020, once again probably due to weather and climatic

conditions, the lowest concentrations of nutrients were recorded, among which a moderate variability in the total nitrogen and phosphorus levels emerged, essentially linked to the seasonality of the sampling periods and the absence of specific distribution patterns. In general, however, both the availability of nutrients as well as the concentrations of chlorophyll-a, which have slightly increased on average compared to previous campaigns, show values in line with the oligotrophic conditions typical of the waters of the western sector of the Mediterranean.

The trophic index TRIX values denote a worsening of the water immediately facing the site drain, but in almost all cases, the changes in the index did not cause a change in the classification status of the water, which, similarly to previous monitoring, fell into the "Good" quality class.

TRIX situation in all 16 waterbodies along the entire Tuscan coasts
Source : " Marine coastal water monitoring of Tuscany-Monitoring activities 2018- Classification proposal of the three-year period 2016-2018" ARPAT 2019
"Marine- coastal water monitoring of Tuscany- Monitoring activities 2019" ARPAT 2020

TRIX INDEX: a combination of saturated oxygen, chlorophyll-a and nutrients that measures the trophic level of coastal marine environments

ARPAT REPORT 2019:

The values of the trophic index indicate, in general, for the coastal marine regions of Tuscany, a condition of oligotrophy characterized by high levels of oxygen and low concentrations of nutrients, often equal to the limit of instrumental quantification.

Annual average TRIX index (4 is the reference value-the lower the better)

Corpo idrico	Stazioni	TRIX per stazioni	TRIX per corpo idrico
Costa Versilia	Marina di Carrara	3.4	3.4
Costa del Serchio	Nettuno	4.2	4.2
Costa Pisana	Fiume Morto	3.9	3.9
Costa Livornese	Antignano	2.7	2.7
Costa Rosignano	Rosignano Lillatro	3.3	3.3
Costa del Cecina	Marina di Castagneto	3.3	3.3
Costa Piombino	Salivoli	2.8	2.8
Costa Follonica	Carbonifera	2.9	2.9
Costa Punta Ala	Foce Bruna	2.1	2.1
Costa Ombrone	Foce Ombrone	2.9	2.9
Costa Uccellina	Cala di Forno	2.7	2.7
Costa Albegna	Foce Albegna	2.7	2.7
Costa dell'Argentario	Porto S.Stefano	2.4	2.4
Costa Burano	Ansedonia	2.9	2.9
Arcipelago Isola d'Elba	Elba Nord	2.9	3.00
	Elba Sud	3.0	
Arcipelago Isole Minori	Giglio	2.5	2,3
	Capraia	2.3	
	Montecristo	1.7	

ARPAT REPORT 2018:

TRIX's average figures for the period 2016-2018 are reported in the table: no water body exceeds the threshold value (4)

Annual average TRIX index (4 is the reference value-the lower the better

Corpo Idrico	TRIX 2016	TRIX 2017	TRIX 2018	TRIX 2016-2018
Costa Versilia	3,6	3,8	3,7	**3,7**
Costa del Serchio	4,0	3,8	3,6	**3,8**
Costa Pisana	4.4	3,7	3,5	**3,9**
Costa Livornese	2,8	2,8	2,6	**2,7**
Costa Rosignano	2,8	2,4	2,6	**2,6**
Costa del Cecina	2,5	2,6	3	**2,7**
Costa Piombino	2,6	2,6	2,4	**2,5**
Costa Follonica	3,4	2,0	3,1	**2,9**
Costa Punta Ala	2,7	3,0	2,5	**2,8**
Costa Ombrone	2,9	2,4	2,5	**2,6**
Costa Uccellina	2,5	2,5	2,7	**2,6**
Costa Albegna	3,0	2,5	2,5	**2,6**
Costa Argentario	2,0	2,8	2,6	**2,4**
Costa Burano	2,8	3,1	2,7	**2,9**
Arcipelago Isola d'Elba	2,4	2,5	2,4	**2,5**
Arcipelago Isole Minori	2,7	2,6	2,4	**2,6**

As regards the qualitative and quantitative analyses of phytoplankton, the results highlighted a greater abundance both in time and space of the groups classified as "Other phytoplankton" following a growth trend already underway in 2015 (IAMC-CNR, 2015 -2017). From the analyses conducted on the abundances and diversity indices, it is possible to describe phytoplanktonic seasonal fluctuations related to the environmental conditions detected during the sampling, suggesting that there is no related to human activities influence on the biodiversity of the phytoplankton component. With the progressive increase in chlorophyll-a concentrations, there was a general variation in the EQB values in the area studied, resulting in a "SUFFICIENT" quality judgment in 10 of the 12 sampled stations.

The investigations relating to the concentrations of metals (arsenic, cadmium, chromium, copper, mercury, nickel, lead, vanadium and zinc) found in the tissues of the species sampled in the campaigns of September and November 2018 in general did not show values above the limits set by Regulation (EC) 1881/2006 and on average lower than those reported in the previous baseline campaigns conducted on the same species (IAMC-CNR, 2015-2017).

Table relating to the concentrations of metals (arsenic, cadmium, chromium, copper, mercury, nickel, lead, vanadium and zinc) found in the tissues of the species sampled.
Source: " Monitoring of the status of the marine environment in the area in front of Solvay Site of Rosignano M.Mo (LI)"(IAS-CNR-2020)"

Campione		As	Cd		Cr	Cu	Hg		Ni	Pb		V	Zn
n.	Specie	Misurato	Misurato	Limite	Misurato	Misurato	Misurato	Limite	Misurato	Misurato	Limite	Misurato	Misurato
1	*S. porcus*	2.94	0.001		0.07	0.36	0.39		0.06	0.02		0.02	2.67
2	*S. porcus*	0.52	0.001		0.04	0.31	0.20		0.06	0.01		0.02	2.06
3	*S. porcus*	2.20	0.001		0.08	0.34	0.31		0.03	0.37		0.02	2.54
4	*S. porcus*	6.63	0.002		0.07	0.18	0.62		0.07	0.17		0.04	2.29
5	*S. porcus*	3.59	0.001		0.30	0.60	0.34		0.14	0.22		0.07	2.55
6	*S. porcus*	2.24	0.001		0.09	0.28	0.33		0.05	0.03		0.01	2.46
7	*S. porcus*	2.28	0.001	0.05	0.09	0.18	0.26		0.06	0.21		0.02	2.30
8	*S. porcus*	3.59	0.001		0.09	0.21	0.33	0.50	0.07	0.17	0.30	0.03	2.47
9	*S. porcus*	4.21	0.001		0.10	0.52	0.34		0.05	0.05		0.02	2.21
10	*S. porcus*	2.03	0.001		0.07	0.32	0.22		0.08	0.19		0.02	2.75
11	*S. porcus*	2.32	0.002		0.11	0.48	0.35		0.06	0.06		0.03	2.48
12	*S. porcus*	5.61	0.000		0.01	0.06	0.37		<dL	0.00		0.01	0.91
13	*S. porcus*	6.2	0.001		0.01	0.08	0.32		0.00	0.00		0.01	2.89
14	*S. porcus*	3.21	0.001		0.01	0.15	0.44		<dL	0.00		0.01	4.71
15	*S. porcus*	8.31	0.001		0.01	0.10	0.50		<dL	0.00		0.01	3.12
	media±dev.st	3.73±2.10	0.001±0.000		0.08±0.07	0.28±0.16	0.35±0.11		0.06±0.03	0.10±0.11		0.02±0.02	2.56±0.77
1	*S. salpa*	1.49	0.001		0.03	0.24	0.00		0.02	0.01		0.02	6.50
2	*S. salpa*	1.76	0.001		0.01	0.17	0.01		0.02	0.01		0.004	5.57
3	*S. salpa*	0.16	0.003		0.28	0.39	0.002		0.16	0.02		0.02	3.13
4	*S. salpa*	0.12	0.005		0.28	0.41	0.001		0.16	0.07		0.02	3.20
5	*S. salpa*	0.10	0.004		0.22	0.20	0.003		0.13	0.03		0.01	3.15
6	*S. salpa*	0.15	0.004	0.05	0.19	0.16	0.003	0.50	0.10	0.01	0.30	0.01	2.17
7	*S. salpa*	0.10	0.003		0.29	0.30	0.002		0.16	0.01		0.01	3.12
8	*S. salpa*	0.12	0.004		0.18	0.12	0.002		0.11	0.01		0.00	2.69
9	*S. salpa*	0.11	0.003		0.19	0.19	0.000		0.11	0.03		0.01	2.33
10	*S. salpa*	0.10	0.004		0.20	0.15	0.002		0.11	0.01		0.00	2.48
11	*S. salpa*	0.25	0.005		0.19	0.14	0.013		0.11	0.03		0.00	2.20
	media±dev.st	0.40±0.61	0.003±0.001		0.19±0.09	0.22±0.10	0.004±0.004		0.11±0.05	0.02±0.02		0.01±0.01	3.32±1.41

(continua)

Campione		As	Cd		Cr	Cu	Hg		Ni	Pb		V	Zn
n.	Specie	Misurato	Misurato	Limite	Misurato	Misurato	Misurato	Limite	Misurato	Misurato	Limite	Misurato	Misurato
1	*M. barbatus*	8.35	0.001		0.01	0.18	0.05		0.01	0.01		0.02	4.42
2	*M. barbatus*	13.7	0.001		0.02	0.18	0.12		0.01	0.01		0.02	4.53
3	*M. barbatus*	8.87	0.001		0.01	0.20	0.05		0.02	0.01		0.02	3.02
4	*M. barbatus*	10.9	0.001		0.01	0.23	0.12		0.01	0.01		0.01	4.26
5	*M. barbatus*	10.6	0.001	0.05	0.02	0.35	0.13	1.0	0.01	0.03	0.30	0.01	2.82
6	*M. barbatus*	8.96	0.002		0.01	0.27	0.10		0.02	0.01		0.01	3.01
7	*M. barbatus*	9.28	0.001		0.02	0.19	0.11		0.01	0.02		0.01	4.60
8	*M. barbatus*	11.3	0.002		0.01	0.31	0.23		0.02	0.02		0.02	2.95
9	*M. barbatus*	15.3	0.001		0.01	0.23	0.21		0.02	0.01		0.02	3.73
10	*M. barbatus*	8.22	0.001		0.02	0.15	0.05		0.02	0.01		0.03	3.17
	media±dev.st	10.6±2.36	0.00±0.00		0.01±0.00	0.23±0.06	0.12±0.06		0.02±0.00	0.01±0.00		0.02±0.00	3.65±0.73
1	*S. mantis*	6.76	0.40		0.01	14.82	0.07		0.12	0.01		0.02	17.6
2	*S. mantis*	14.9	0.28		0.01	9.32	0.05		0.11	0.01		0.02	21.6
3	*S. mantis*	6.68	0.27		0.01	8.12	0.05		0.09	0.01		0.02	28.4
4	*S. mantis*	7.49	0.21		0.01	8.83	0.06		0.09	0.01		0.01	16.4
5	*S. mantis*	13.5	0.28	0.50	0.02	10.42	0.04	0.50	0.15	0.01	0.50	0.02	22.4
6	*S. mantis*	8.64	0.26		0.02	8.30	0.04		0.16	0.00		0.06	19.4
7	*S. mantis*	9.43	0.29		0.02	8.84	0.04		0.17	0.00		0.06	20.9
8	*S. mantis*	8.06	0.23		0.02	6.25	0.04		0.20	0.01		0.02	19.3
9	*S. mantis*	8.70	0.30		0.02	7.96	0.03		0.39	0.00		0.02	16.6
10	*S. mantis*	10.1	0.19		0.01	5.22	0.04		0.07	0.01		0.05	17.6
	media±dev.st	9.44±2.78	0.27±0.05		0.02±0.00	8.81±2.57	0.05 ± 0.01		0.15±0.09	0.01±0.00		0.03±0.02	20.0±3.60
1	*S. officinalis*	29.9	0.0		0.01	1.27	0.20		0.0	0.01		0.01	9.78
2	*S. officinalis*	36.9	0.0		0.02	1.66	0.10		0.0	0.01		0.01	10.7
3	*S. officinalis*	25.9	0.0		0.02	3.87	0.13		0.0	0.01		0.01	8.29
4	*S. officinalis*	16.8	0.0		0.02	3.35	0.05		0.0	0.01		0.01	8.76
5	*S. officinalis*	14.3	0.0	1.0	0.01	2.53	0.06	0.50	0.0	0.05	1.0	0.00	10.5
6	*S. officinalis*	28.0	0.0		0.01	2.84	0.12		0.0	0.01		0.01	8.33
7	*S. officinalis*	17.8	0.0		0.01	6.39	0.04		0.0	0.05		0.00	15.4
8	*S. officinalis*	33.4	0.0		0.02	3.58	0.20		0.0	0.01		0.01	9.06
9	*S. officinalis*	35.9	0.0		0.02	3.89	0.14		0.0	0.02		0.01	10.7
10	*S. officinalis*	32.8	0.0		0.02	2.84	0.12		0.0	0.01		0.02	10.5
	media±dev.st	27.2±8.24	–		0.02±0.00	3.22±1.42	0.11 ± 0.06		0.01±0.00	0.02±0.01		0.01±0.00	10.2±2.08

(continua)

Campione		As	Cd		Cr	Cu	Hg		Ni	Pb		V	Zn
n.	Specie	Misurato	Misurato	Limite	Misurato	Misurato	Misurato	Limite	Misurato	Misurato	Limite	Misurato	Misurato
1	*P. lividus*	0.16	0.04		0.10	0.12	0.02		0.06	0.17	–	0.08	0.37
2	*P. lividus*	*	*		*	*	0.01		*	*		*	*
3	*P. lividus*	0.15	0.03		0.14	0.16	0.01		0.08	0.20	–	0.09	0.22
4	*P. lividus*	0.17	0.06		0.10	0.14	0.02		0.06	0.23	–	0.09	2.73
5	*P. lividus*	*	*		*	*	0.01		*	*		*	*
6	*P. lividus*	0.11	0.12	–	0.27	0.09	0.02	0.50	0.07	0.34	–	0.09	0.52
7	*P. lividus*	*	*		*	*	0.02		*	*		*	*
8	*P. lividus*	0.07	0.02		0.13	0.09	0.01		0.05	0.44	–	0.08	0.11
9	*P. lividus*	*	*		*	*	0.00		*	*		*	*
10	*P. lividus*	*	*		*	*	0.01		*	*		*	*
11	*P. lividus*	0.24	0.02		0.15	0.21	0.01		0.09	0.12	–	0.10	0.56
12	*P. lividus*	*	*		*	*	0.01		*	*		*	*
	media±dev.st	0.15 ± 0.06	0.05 ± 0.04		0.15± 0.06	0.14 ± 0.05	0.01±0.00		0.07 ± 0.01	0.25 ± 0.12		0.09 ± 0.01	0.75 ± 0.98

As for the assessment of the "Chemical status" of the area, the analyses of the sea water matrix did not show any exceedances of the EQS for any of the analyzed parameters, indicating an improvement in the chemical state of the sea water column compared to the 2015-2016 period. Instead, with reference to sediments, the analyses showed that the EQS for mercury, total chromium, arsenic and hexachlorobenzene were exceeded, although the values are confident with those reported in previous studies (ARPAT 2010-2012, 2013-2015; IAMC-CNR, 2015-2017) and with the natural background values (VFN) related to the sediments of the Rosignano area (ARPAT, 2015).

However, in accordance with the list of priority substances shown in Tables 1/A and 2/A of Legislative Decree 172/2015, failure to comply with the environmental quality standard set for mercury in the matrix sediment, has led to the classification of the marine-coastal area of Rosignano as a body of water which is not recognized as having "good" chemical status.

Comparison between the "No GOOD" Chemical status measured by IAS-CNR in the two studies - Even if the evaluation is the same, the improvement in water quality is evident
Source: "Environmental study on the status of the marine environment in the area in front of Solvay Site of Rosignano M.Mo (LI)"(IAMC-CNR-2016) and " Monitoring of the status of the marine environment in the area in front of Solvay Site of Rosignano M.Mo (LI)"(IAS-CNR-2020)"

Matrice	Stazione	*IAS 2018* Parametri >SQA	*IAMC 2016* Parametri >SQA
Sedimento	B3	Cr	**Hg**
	B4	Cr, **Hg,** esaclorobenzene	Cr, **Hg,** esaclorobenzene
	R014	As, **Hg,** Cr, esaclorobenzene	As, **Hg**, Cr
Acqua	A1		**Cd, Pb**
	A4		**Ni, Pb**
	C2		**Cd, Ni, Pb**
Valutazione dello stato chimico		**NB**	**NB**