

ภาคผนวก จ

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## สำเนาหนังสือรับรองห้องปฏิการวิเคราะห์เอกสาร







ลำดับที่	สารเคมี	วิธีวิเคราะห์
17	4,4'-DDT	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
18	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
19	Endosulfan I	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
20	Endosulfan II	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
21	Endosulfan Sulfate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
22	Endrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
23	Endrin Aldehyde	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
24	Formaldehyde	Distillation, Colorimetric Method <sup>[2]</sup>
25	Free Chlorine	DPD Colorimetric Method <sup>[3]</sup>
26	Hexavalent Chromium	Filtration, Colorimetric Method <sup>[3]</sup>
27	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
28	Heptachlor Epoxide	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
29	Lead	1) Digestion, Direct Air-Acetylene Flame Method 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method <sup>[3]</sup>
30	Manganese	Digestion, Direct Air-Acetylene Flame Method <sup>[3]</sup>
31	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[3]</sup>
32	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
33	Nickel	Digestion, Direct Air-Acetylene Flame Method <sup>[3]</sup>
34	Oil & Grease	Soxhlet Extraction Method <sup>[3]</sup>
35	pH	Electrometric Method <sup>[3]</sup>

ลำดับที่	สารเคมี	วิธีวิเคราะห์	วิธีวิเคราะห์
36	Phenol	Distillation, Direct Photometric Method <sup>[3]</sup>	Digestion, Hydride Generation/Atomic Absorption
37	Selenium	Spectrometric Method <sup>[3]</sup>	Precipitation, Iodometric Method <sup>[3]</sup>
38	Sulfide	Laboratory and Field Methods <sup>[3]</sup>	Dried at 180 °C <sup>[3]</sup> .
39	Temperature	Dried at 103-105 °C <sup>[3]</sup> .	Macro Kjeldahl, Titrimetric Method <sup>[3]</sup>
40	Total Dissolved Solids	Digestion, Direct Air-Acetylene Flame Method;	Filtration, Colorimetric Method; Calculation <sup>[3]</sup>
41	Total Kjeldahl Nitrogen	Digestion, Direct Air-Acetylene Flame Method <sup>[3]</sup>	Digestion, Direct Air-Acetylene Flame Method <sup>[3]</sup>
42	Total Suspended Solids		
43	Trivalent Chromium		
44	Zinc		

#### นำเข้าใน จำนวน 31 รายการ

ลำดับที่	สารเคมี	วิธีวิเคราะห์	วิธีวิเคราะห์
1	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>	Digestion, Direct Air-Acetylene Flame Method <sup>[3]</sup>
2	Antimony	Digestion, Hydride Generation/Atomic Absorption	Digestion, Direct Nitrous Oxide-Acetylene Flame Method <sup>[3]</sup>
3	Arsenic	Spectrometric Method <sup>[3]</sup>	Digestion, Direct Nitrous Oxide-Acetylene Flame Method <sup>[3]</sup>
4	Barium	1) Digestion, Direct Nitrous Oxide-Acetylene Flame Method <sup>[3]</sup>	1) Digestion, Direct Air-Acetylene Flame Method <sup>[3]</sup>
5	Beryllium	2) Digestion, Electrothermal Atomic Absorption	2) Digestion, Electrothermal Atomic Absorption
6	Cadmium	Spectrometric Method <sup>[3]</sup>	Spectrometric Method <sup>[3]</sup>
7	Chromium	Digestion, Direct Air-Acetylene Flame Method <sup>[3]</sup>	Digestion, Direct Air-Acetylene Flame Method <sup>[3]</sup>
8	Chromium (III)	Digestion, Colorimetric Method <sup>[3]</sup>	Filtration, Colorimetric Method <sup>[3]</sup>
9	Chromium (VI)	Distillation, Colorimetric Method <sup>[3]</sup>	Distillation, Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
10	Cyanide		
11	DDD		

ลำดับที่	สารเคมี	วิธีการตรวจ
12	DDE	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
13	DDT	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
14	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
15	Endrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
16	$\alpha$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
17	$\beta$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
18	$\gamma$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
19	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
20	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
21	Lead	1) Digestion, Direct Air-Acetylene Flame Method <sup>[3]</sup> 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method <sup>[3]</sup>
22	Manganese	Digestion, Direct Air-Acetylene Flame Method <sup>[3]</sup>
23	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[3]</sup>
24	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[3]</sup>
25	Nickel	Digestion, Direct Air-Acetylene Flame Method <sup>[3]</sup>
26	pH	Electrometric Method <sup>[3]</sup>
27	Phenols	Distillation, Direct Photometric Method <sup>[3]</sup>
28	Selenium	Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[3]</sup>
29	Silver	Digestion, Direct Air-Acetylene Flame Method <sup>[3]</sup> 2) Digestion, Colorimetric Method <sup>[7,10]</sup>

ลำดับที่	สารเคมี	วิธีการตรวจ
30	Vanadium	Digestion, Direct Nitrous Oxide-Acetylene Flame Method <sup>[3]</sup>
31	Zinc	Digestion, Direct Air-Acetylene Flame Method <sup>[3]</sup>
<b>สิ่งมีอิทธิพลต่อการตรวจสารเคมีที่สำคัญที่สุด จำนวน 25 รายการ</b>		
ลำดับที่	สารเคมี	วิธีการตรวจ
1	Aldrin	1) Waste Extraction, Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4,6]</sup> 2) Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[6,14]</sup>
2	Antimony	1) Waste Extraction, Digestion, Direct Air-Acetylene Flame Method <sup>[1,8]</sup> 2) Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
3	Arsenic	1) Waste Extraction, Digestion, Hydride Generation/ Atomic Absorption Spectrometric Method <sup>[1,9]</sup> 2) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[4,9]</sup>
4	Barium	1) Waste Extraction, Digestion, Direct Nitrous Oxide- Acetylene Flame Method <sup>[1,8]</sup> 2) Digestion, Direct Nitrous Oxide-Acetylene Flame Method <sup>[4,8]</sup>
5	Beryllium	1) Waste Extraction, Digestion, Direct Nitrous Oxide- Acetylene Flame Method <sup>[1,8]</sup> 2) Digestion, Direct Nitrous Oxide-Acetylene Flame Method <sup>[4,8]</sup>
6	Cadmium	1) Waste Extraction, Digestion, Direct Air-Acetylene Flame Method <sup>[1,8]</sup> 2) Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
7	Chromium	1) Waste Extraction, Digestion, Direct Air-Acetylene Flame Method <sup>[1,8]</sup> 2) Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
8	Chromium (VI)	1) Waste Extraction, Colorimetric Method <sup>[7,10]</sup> 2) Digestion, Colorimetric Method <sup>[7,10]</sup>

ลำดับที่	สารเคมี	วิธีวิเคราะห์
9	Copper	1) Waste Extraction, Digestion, Direct Air-Acetylene Flame Method <sup>[1,8]</sup> 2) Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
10	DDD	1) Waste Extraction, Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,5,14]</sup> 2) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[6,14]</sup>
11	DDE	1) Waste Extraction, Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,5,14]</sup> 2) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[6,14]</sup>
12	DDT	1) Waste Extraction, Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,5,14]</sup> 2) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[6,14]</sup>
13	Dielein	1) Waste Extraction, Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,5,14]</sup> 2) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[6,14]</sup>
14	Endrin	1) Waste Extraction, Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,5,14]</sup> 2) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[6,14]</sup>
15	Heptachlor	1) Waste Extraction, Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,5,14]</sup> 2) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[6,14]</sup>
16	Lead	1) Waste Extraction, Digestion, Direct Air-Acetylene Flame Method <sup>[1,8]</sup> 2) Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>

ลำดับที่	สารเคมี	วิธีวิเคราะห์
17	Lindane	1) Waste Extraction, Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,5,14]</sup> 2) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[6,14]</sup>
18	Mercury	1) Waste Extraction, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[1,11]</sup> 2) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[1,12]</sup>
19	Methoxychlor	1) Waste Extraction, Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1,5,14]</sup> 2) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[6,14]</sup>
20	Nickel	1) Waste Extraction, Digestion, Direct Air-Acetylene Flame Method <sup>[1,8]</sup> 2) Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
21	pH	1) Waste Extraction, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[1,8]</sup> 2) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[1,8]</sup>
22	Selenium	1) Waste Extraction, Digestion, Direct Air-Acetylene Flame Method <sup>[1,8]</sup> 2) Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
23	Silver	1) Waste Extraction, Digestion, Direct Air-Acetylene Flame Method <sup>[1,8]</sup> 2) Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
24	Vanadium	1) Waste Extraction, Digestion, Direct Air-Acetylene Flame Method <sup>[1,8]</sup> 2) Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
25	Zinc	1) Waste Extraction, Digestion, Direct Air-Acetylene Flame Method <sup>[1,8]</sup> 2) Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>

## ต้นฉบับนั้น ๒๙ ราชกิจจานุเบกษา

ลำดับที่	สารเคมี	วิธีการตรวจ
1	Aldrin	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[6,14]</sup>
2	Antimony	Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
3	Arsenic	Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[4,9]</sup>
4	Barium	Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
5	Beryllium	Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
6	Cadmium	Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
7	Chromium	Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
8	Chromium (III)	Digestion, Direct Air-Acetylene Flame, Colorimetric Method; Calculation <sup>[4,5,7,10]</sup>
9	Chromium (VI)	Digestion, Colorimetric Method <sup>[7,10]</sup>
10	Cyanide	Cyanide Extraction Method <sup>[15]</sup>
11	DDD	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[4,14]</sup>
12	DDE	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[6,14]</sup>
13	DDT	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[6,14]</sup>
14	Dieldrin	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[6,14]</sup>
15	Endrin	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[6,14]</sup>
16	$\alpha$ -HCH	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[6,14]</sup>
17	$\beta$ -HCH	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[6,14]</sup>
18	$\gamma$ -HCH	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[6,14]</sup>

ลำดับที่	สารเคมี	วิธีการตรวจ
19	Heptachlor	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[6,14]</sup>
20	Heptachlor epoxide	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[6,14]</sup>
21	Lead	Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
22	Manganese	Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
23	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[4,12]</sup>
24	Methoxychlor	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method <sup>[6,14]</sup>
25	Nickel	Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
26	Selenium	Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[4,13]</sup>
27	Silver	Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
28	Vanadium	Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>
29	Zinc	Digestion, Direct Air-Acetylene Flame Method <sup>[4,8]</sup>

## เอกสารอ้างอิง

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