

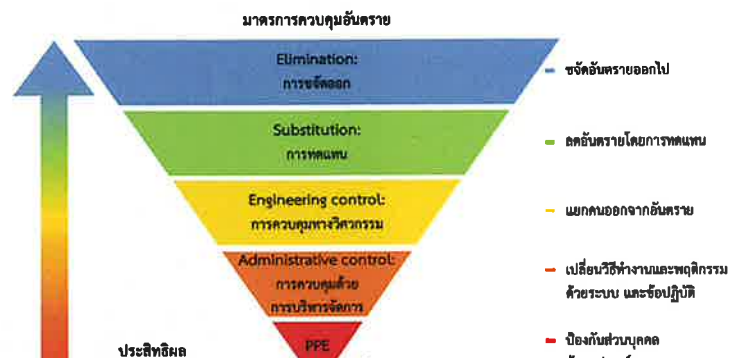
ภาคผนวก ค

เอกสารประกอบการปฏิบัติตาม
มาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

ภาคผนวก ค.1

เอกสารจัดทำ Noise Contour Map

ทางบริษัทฯ ได้จัดให้มีมาตรการในการป้องกันและลดผลกระทบที่อาจเกิดขึ้นเนื่องจากเสียงดัง โดยกำหนดให้พนักงานสวมใส่อุปกรณ์คุ้มครองความปลอดภัยส่วนบุคคลตลอดเวลาที่ทำงาน เพื่อลดระดับเสียงสัมผัสในหู นอกจากนี้ยังจัดให้มีโครงการอนุรักษ์การได้ยิน (Hearing Conservation Program) เพื่อลดโอกาสที่พนักงานจะสัมผัสเสียงดังจากการทำงานอย่างต่อเนื่อง โดยอ้างอิงจาก Hierarchy of Control (ลำดับขั้นของการควบคุมอันตราย) เป็นแนวทางในการแก้ไขปัญหาในการลดระดับเสียงให้มีประสิทธิภาพ



โดยทางบริษัทฯ ได้มีการดูแลบำรุงรักษา เครื่องจักร และอุปกรณ์อย่างเป็นประจำสม่ำเสมอ เพื่อลดความเสี่ยงที่จะทำให้เครื่องจักรเกิดการชำรุด เสียหาย จนอาจเกิดอันตรายหรือเสียงดังที่มากขึ้น และในมาตรการข้ออื่นๆ ได้รวมอยู่ในมาตรการที่ทางบริษัทฯ ใช้ในการป้องกันและลดผลกระทบที่อาจเกิดขึ้นดังต่อไปนี้

1. การตรวจวัดระดับเสียงในสถานที่ทำงาน 2 ครั้ง/ปี




ทางบริษัทฯ มีแผนงานในการตรวจวัดทั้งระดับเสียงในสถานที่ทำงาน และระดับเสียงสะสมติดตัวพนักงาน 2 ครั้ง/ปี ซึ่งทางบริษัทฯ ได้ทำการตรวจวัดตามแผนงาน และส่งเอกสารให้ทางสำนักงานสวัสดิการและคุ้มครองแรงงานเรียบร้อยแล้ว

Monitoring	Sampling point	Compus	Y	Prog	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Noise workplace	1. SBR Line 11 SBR 42 (1AB)	BSTE	2	Times/Year												
Noise workplace	2. C. processor	BSTE	2	Times/Year												
Noise workplace	3. Hot Extruder 4-6420	BSTE	2	Times/Year												
Noise Dose	2. BSTE day	BSTE	2	Times/Year												

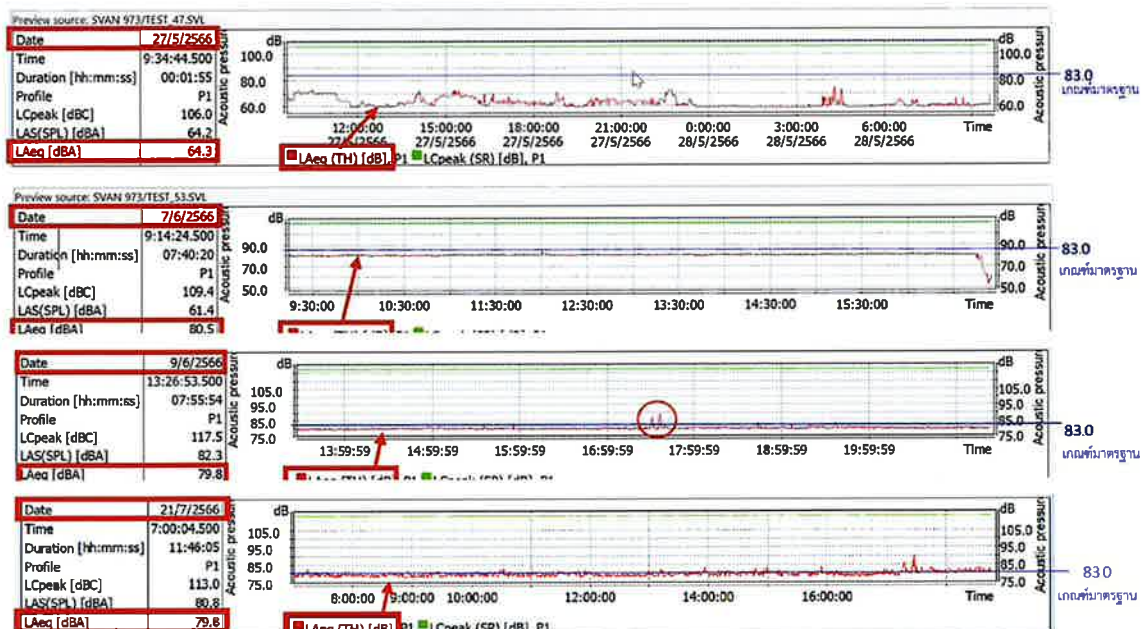
2. การควบคุมทางวิศวกรรม

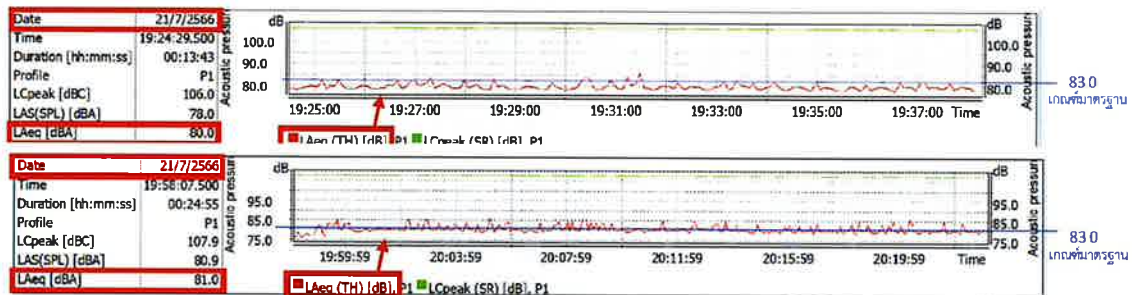
ทางบริษัทฯ ได้มีการดำเนินการ Noise reduction Project at SBR Finishing ในการควบคุมระดับเสียงจากอุปกรณ์เครื่องจักรภายในโรงงาน บริเวณห้อง Packing เนื่องจากเป็นบริเวณที่พนักงานใช้เวลาปฏิบัติงานนานที่สุด และใกล้ Baler (แหล่งกำเนิดเสียงสำคัญ) จึงพยายามลดระดับเสียงในกระบวนการผลิตให้อยู่ในเกณฑ์ตามที่มาตรฐานที่กำหนด

โดยทางส่วนความปลอดภัยและอาชีวอนามัย และทางส่วนงาน MF4 ได้มีการดำเนินการวิธีต่างๆ ในการลดระดับเสียง การส่งผ่านหรือสะท้อนเสียงโดยตรง ได้แก่ การติดตั้งแผ่นดูดซับเสียง/ ติดตั้ง Stopper/ ติดตั้งแผ่นยาง soft stopper baler AB ชั่วคราว และหลังปรับตัวทวน บริเวณ baler AB ให้ทวนที่สุด/ ติดตั้งฉาก Adsorptive material for noise reduction/ ติดตั้งแผ่นซับเสียงบริเวณ baler AB และหลัง control panel พบว่าค่าระดับเสียงเฉลี่ยตลอดระยะเวลาตรวจวัด ไม่เกินค่ามาตรฐาน (ค่ามาตรฐานการทำงาน 12 ชั่วโมง คือ 83 dB(A) ซึ่งระดับเสียงลดลงเล็กน้อย และยังคงอยู่ในเกณฑ์ค่ามาตรฐานกำหนด โดยทำการวัดไป 2 ช่วง คือ Plant Shutdown และ Plant Normal run ได้ผลตรวจวัดระดับเสียง ดังตารางนี้

Plant status	วัน/เวลา	จุดติดตั้งเครื่องวัด	ผลการตรวจวัดเสียง (dBA)		หมายเหตุ
			ก่อนติดตั้ง แผ่นซับเสียง	หลังติดตั้ง แผ่นซับเสียง	
Plant shut down	19 May'23 (9.23-16.06น; 6.43h)	หลังตู้ control panel บริเวณ stopper baler	67.2		
	27-28 May'23 (9.34-9.36น; 24h)	หัวโค้ง-1 รอบนอก ตรง ผนัง	64.3		
Plant normal run	7 Jun'23 กะเช้า (9.14-16.54น; 7.4h) at SBR1502 feed 9 T/H	หัวโค้ง-1 รอบนอก ตรง ผนัง	80.5		แอร์ Packing เสีย MF3B แจ้งรอ อะไหล่มาซ่อมเปลี่ยน ต้องเปิด blower (มีเสียงดัง และตั้งใกล้ เครื่องวัดเสียงพอดี) ระบายอากาศ 2 ตัวใน Packing (ที่นั่งหัวโค้ง และหน้า panel) 
	9 Jun'23 (13.26-21.22น.; 7.55h) at SBR1502 feed 9 T/H Improvement หลังติดตั้งแผ่นยาง soft stopper baler AB ชั่วคราว เมื่อวันที่ 8 Jun'23 กะดึก  baler AB ให้หน่วยงานที่สุด วันที่ 9 Jun'23 (11-12.00 น. Line A ครบ 4 ตัว, Line B ยัง 	หัวโค้ง-1 รอบนอก ตรง ผนัง	79.8		เคลื่อนย้าย blower จุดที่นั่งหัว โค้ง ใกล้เครื่องวัดเสียง ไปบริเวณ film wrapper

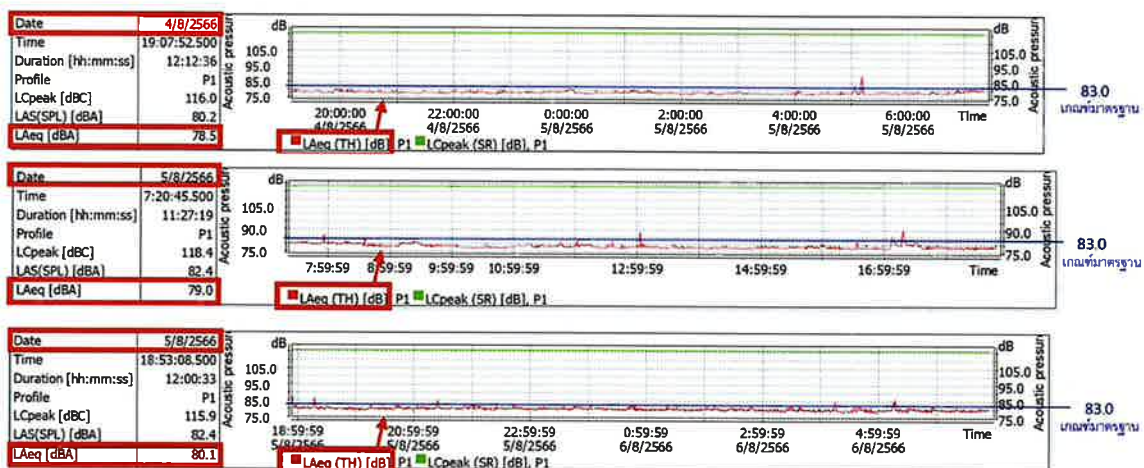
Plant status	วัน/เวลา	จุดติดตั้งเครื่องวัด	ผลการตรวจวัดเสียง (dBA)	หมายเหตุ
Plant normal run	21-Jul-23 กะเช้า (7.00-18.46น.; 11.46h) At SBR1723 feed rate 11.5 T/H Improvement MF4 ติดตั้งแผ่นซับเสียง บริเวณ baler AB และติด แผ่นบนหลัง control panel (since 3-Jul-23)	หัวโค้ง-1 รอบนอก ตรง ผสม น้	79.8	แอร์ ใช้งานได้ปกติ
	21-Jul-23 กะดึก (19.24-19.37น; 13 min) At SBR1723 feed rate 11.5 T/H	หัวโค้ง-1 รอบนอก ตรง ผสม น้	80.0	
	21-Jul-23 กะดึก (19.58-20.22น; 24 min) At SBR1723 feed rate 11.5 T/H	หัวโค้ง-1 รอบนอก ตรง ผสม น้	81.0	





ทดลองเดิน เติมน้ำแล้วขังน้ำระดับเสียงจะทรงๆ RUN SBR0122 ที่ SBR Filling เพื่อบันทึก Baseline โดยจะตั้งจุดเก็บตัวอย่าง 2 ตำแหน่ง เพื่อเปรียบเทียบกัน คือ บริเวณสายพานลำเลียงยาง (จุดเดิม) และ บริเวณ stopper ใกล้ทางลง baler line A (จุดใหม่) เพื่อเก็บค่าใกล้เคียงกำเนิดเสียงแต่ละจุด โดยผลเสียงเฉลี่ยตลอดระยะเวลาตรวจวัด ไม่เกินค่ามาตรฐาน (ทำงาน 12 ชั่วโมง Std. 83 dB(A) / ทำงาน 8 ชั่วโมง Std. 85 dB(A) ทำการวัดในช่วง Plant Normal run โดยมีผลตรวจวัดระดับเสียง ดังนี้

Plant status	วัน/เวลา	จุดติดตั้งเครื่องวัด	ผลการตรวจวัดเสียง (dBA)		หมายเหตุ
			ก่อนติดตั้งแผ่นซับเสียง	หลังติดตั้งแผ่นซับเสียง	
Plant normal run SBR0122 Feed rate 9.5 T/H (w/reprocess)	วันศุกร์ 4 Aug กะดึก เวลา 19:07-7:19น. (12.12h)	หัวโค้ง-1 รอบนอก ตรง พรม นั่ง (จุดเดิม)		78.5	
	วันเสาร์ 5 Aug กะเช้า เวลา 7:20-18:47น. (11.27h)	หัวโค้ง-1 รอบนอก ตรง พรม นั่ง (จุดเดิม)		79.0	
	วันเสาร์ 5 Aug กะดึก เวลา 18:53-6:53น. (12.00h)	stopper ทางลง baler line A (จุดใหม่)		80.1	
	วันอาทิตย์ 6 Aug กะเช้า เวลา 6:53-18:40น. (11.47h)	stopper ทางลง baler line A (จุดใหม่)		80.1	





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ขอเชิญเพื่อนพนักงาน

เข้าพบแพทย์ฟิงผลตรวจ Health Check-up 2566

โดยมีแพทย์และพยาบาลจาก รพ.กรุงเทพนคร ๖๐๖

Shift 1 พุธ-ศุกร์ และวันเสาร์-อาทิตย์
Shift 2 พุธ-วัน 102
เริ่มในเวลา 07.00 น. – 18.00 น.

วันพฤหัสบดีที่	12 ต.ค. 2566	(Shift D, Day)
วันจันทร์ที่	16 ต.ค. 2566	(Shift B, Day)
วันอังคารที่	17 ต.ค. 2566	(Shift C, Day)
วันพุธที่	18 ต.ค. 2566	(Shift C, Day)
วันพฤหัสบดีที่	19 ต.ค. 2566	(Shift A, Day)

หมายเหตุ :

- กรุณารับเอกสารผลการตรวจสุขภาพ ณ Location ที่แจ้งจากฝ่าย HR ภายในวันกำหนดการ
- เมื่อตรวจสุขภาพเสร็จเรียบร้อยแล้ว กรุณาแจ้งผลตรวจสุขภาพให้ฝ่าย HR ภายในวันกำหนดการ (กรณีไม่สะดวกในวันกำหนดการ กรุณาแจ้งผลตรวจสุขภาพให้ฝ่าย HR ภายในวันกำหนดการ)

แนวทางการพบแพทย์

(สำหรับพนักงานประจำ)

- พนักงานเข้าพบแพทย์ที่โรงพยาบาลตามวันกำหนดการ
- หากไม่สะดวกมาพบแพทย์ในวันกำหนดการ กรุณาไปพบแพทย์ (โดยระบุวันที่) **วันเสาร์-วันอาทิตย์** หรือ **วันจันทร์-วันพุธ** และแจ้งให้ฝ่าย HR รับทราบ โดยแพทย์จะแจ้งวันนัดกลับงาน

* กรุณาแจ้งผลการตรวจสุขภาพให้ฝ่าย HR รับทราบ (Shift 102) - Shift 101

กรณีพนักงานไม่พบแพทย์ในวันกำหนดการที่มอบหมาย

กลุ่มพนักงานทั่วไป

กลุ่มพนักงานที่ส่งเข้าทำงานในวันจันทร์-วันศุกร์

กลุ่มพนักงานที่ส่งเข้าทำงานในวันเสาร์-วันอาทิตย์

กลุ่มพนักงานที่ส่งเข้าทำงานในวันจันทร์-วันศุกร์

กลุ่มพนักงานที่ส่งเข้าทำงานในวันเสาร์-วันอาทิตย์

กลุ่มพนักงานที่ส่งเข้าทำงานในวันจันทร์-วันศุกร์



*****การพบแพทย์ของทุกคนจะสิ้นสุดวันที่ 27 ตุลาคม 2566*****

สอบถามข้อมูลเพิ่มเติม โทร 501 โทร 1106 หรือ ออไลน์-HRA3 โทร.3181

Occupational Health Awareness

อาชีพอนามัย ; สุขภาพกับการปฏิบัติงาน




Noise

แนวทางของเรตติ้ง

เราสามารถตรวจสอบการได้ป็นด้วยตัวเองอย่างง่าย



บอกคนอื่นให้พูดด้วย
หรือพูดซ้ำอีกครั้ง



บอกคนอื่นให้พุดตังๆ
หรือพุดซ้ำอีกครึ่ง

พูดหรือฟังคนที่อยู่ไกลๆไม่รู้เรื่อง



ไม่ได้ยินเสียง
โทรศัพท์ดัง



เปิดหัวเสียงดังจน
คนอื่นตก



รู้สึกว่าคุณได้ขังหนึ่ง
ได้ยืนยันดีกว่าอีกข้าง



เพื่อนหรือคนในครอบครัว
 ทักว่า
 "สงสัยจะถึง!"

หากท่านมีอาการดังกล่าว ควรพบแพทย์ เพื่อตรวจการได้ยินอย่างละเอียด

ทุกท่านมีอำนาจการตั้งกล่าว ควรพบแพทย์ เพื่อตรวจการได้ยินอย่างละเอียด

อันตรายจากเสียงดัง

1. การสูญเสียการได้ยิน มี 2 ลักษณะ คือ

แบบชั่วคราว เกิดขึ้นเนื่องจากฟังเสียงดังมากๆ ในเวลาไม่นานทำให้หูอื้อ ถ้าหากหยุดรับฟังเสียงดัง การได้ยินจะคืนสู่สภาพปกติ

แบบถาวร เกิดขึ้นเนื่องจากรับฟังเสียงดังเป็นเวลานาน เซลล์ขนในหูชั้นในถูกทำลาย ทำให้รับฟังเสียงไม่ได้ เกิดหูตึง หูพิการ

2. ผลเสียต่อร่างกายและจิตใจ

เกิดโรคหัวใจ หนองหู หูอักเสบ กระทบการนอนหลับ ขาดสมาธิ ประสิทธิภาพการทำงานลดลง เกิดอุบัติเหตุได้

1. การสูญเสียการได้ยิน มี 2 ลักษณะ คือ

แบบชั่วคราว เกิดขึ้นเนื่องจากทรัพย์สินสิ่งใดบางอย่าง ในเวลานี้
นำมาทำให้ข้อ ถ้าหากเหตุการณ์เปลี่ยนแปลง การให้อำนาจผู้สละสภาพปกติ

แบบถาวร เกิดขึ้นเนื่องจากทรัพย์สินสิ่งใดเป็นเวลานาน เสร็จสิ้น
ในขั้นนี้ในทันทีเลย ทำให้ทรัพย์สินได้ เกิดขึ้น หลุดการ

2. ផលស្ដីបត់រ៉ាងកាយនេះជិតទេ

เกิดรำคาญ หูดหงิ๊ด เครียด ระบาย การนอนหลับ ขาดสมาธิ
ประสิทธิภาพการทำงานลดลง เกิดอุบัติเหตุได้

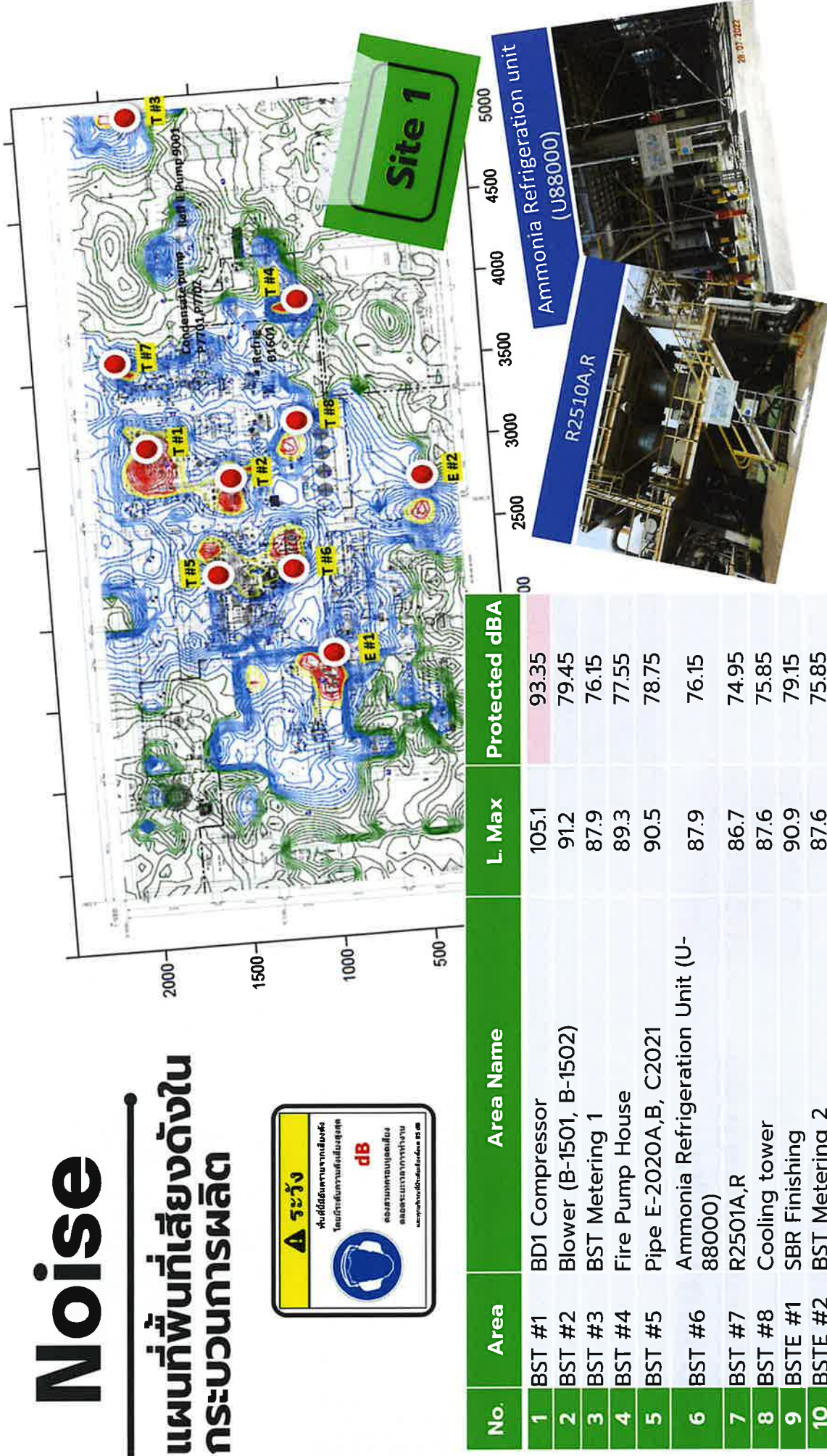
การป้องกัน

การปฏิบัติตนเพื่อป้องกันการสูญเสียการได้ยินในเบื้องต้น

1. **หลีกเลี่ยง** การทำกิจกรรม หรืออยู่บริเวณที่มีเสียงดัง หรือลดระยะเวลาที่ต้องสัมผัสเสียงดังต่างๆ
2. หากไม่สามารถหลีกเลี่ยงได้ ให้ใส่หูอุด ที่ครอบหูที่ได้มาตรฐาน อย่างสม่ำเสมอ หากสวมประสาท หูไปไม่ได้ ควรแว่นป้องกันภาพ หรือที่เรียกว่ากันเสียง หากสวมประสาท หูไปไม่ได้ ควรแว่นป้องกันภาพ หรือที่เรียกว่ากันเสียง

Noise

แผนที่พื้นที่เสียงดังใน กระบวนการผลิต

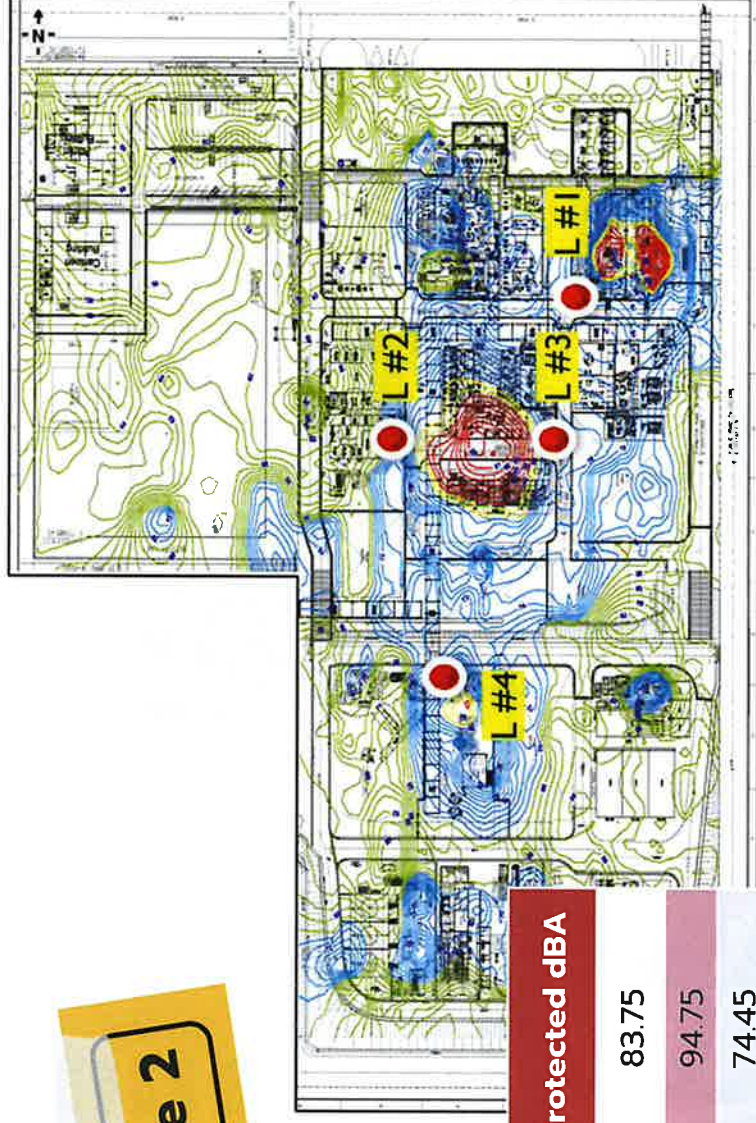


Noise contour as of 2021

Noise

แผนที่พื้นที่เสี่ยงดังใน
กระบวนการผลิต

Site 2



No.	Area	Area Name	L. Max	Protected dBA
1	NBL #1	Unit 600 Storage tank	95.5	83.75
2	NBL #2,3	Unit 300/400	106.5	94.75
3	NBL #4	Chilled water unit	86.2	74.45



Noise contour as of 2021

การควบคุมและป้องกันอันตรายจากเสียงดัง

2

ทางผ่าน

1. จัดทำห้องหรือฉากด้วยวัสดุดูดซับเสียง
2. เพิ่มระยะห่างระหว่างผู้ปฏิบัติงาน
3. สร้างกรอบหรือเส้นแบ่งพื้นที่เสียงดัง



3

ตัวบุคคล

1. จัดการเวลาที่ทำงานกับเสียงดัง
2. สวมใส่ PPE ลดเสียง ear muff

1

แหล่งกำเนิด

1. ออกแบบเครื่องจักรให้เสียงดังน้อยที่สุด
2. ติดตั้งตัวดูดซับเสียง
3. สร้างที่ครอบปิดเครื่องจักร

Noise

• การตรวจคัดกรองสมรรถภาพการได้ยิน

1. การตรวจก่อนจ้างงาน (Pre-Placement)

เพื่อใช้เป็นข้อมูลพื้นฐาน (baseline audiogram) แก่พนักงานที่รับเข้าทำงานใหม่ ในแผนกที่มีเสียงดัง ≥ 85 เดซิเบลเอ ซึ่งตามกฎหมายกำหนดไว้ว่าจ้างต้องจัดให้ลูกจ้างได้รับการตรวจคัดกรองสมรรถภาพการได้ยินภายใน 30 วัน

2. การตรวจระหว่างทำงาน (Periodic Audiometric Examinations)

เป็นการตรวจคัดกรองสมรรถภาพการได้ยินประจำปี เพื่อให้ได้ Annual Audiogram หรือการตรวจติดตามเพื่อเฝ้าระวัง เป็นการตรวจให้กับลูกจ้างเพื่อป้องกันไม่ให้เกิดการสูญเสียการได้ยินเนื่องจากเสียงดัง

ภาคผนวก ง

ใบรับรองผลการตรวจวิเคราะห์คุณภาพสิ่งแวดล้อม

ใบรับรองผลการตรวจวัดคุณภาพอากาศในบรรยากาศ



Meteorological Monitoring Results : Wind Rose

MTR-BSTE (Site 1)

Location : Soi Ruan Patana		Monitor period : 11-18 Jun 2024				
Wind Speed Model : Novalynx WS-25		Serial No : A5092				
Wind Direction Model : Novalynx WS-25		Serial No : A5092				
Time	15-16 Jun 2024		16-17 Jun 2024		17-18 Jun 2024	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
14:00 - 15:00	1.6	W	0.7	SW	0.8	SW
15:00 - 16:00	0.6	WSW	1.2	S	1.5	SE
16:00 - 17:00	1.9	SW	1.4	S	0.6	SSW
17:00 - 18:00	1.6	SSE	1.8	SSW	0.7	S
18:00 - 19:00	1.8	S	1.4	SSE	1.1	SSE
19:00 - 20:00	1.5	SW	1.7	SSE	1.6	S
20:00 - 21:00	1.4	W	0.9	SE	0.9	S
21:00 - 22:00	0.8	WSW	0.9	SSW	1.8	S
22:00 - 23:00	1.6	S	0.9	S	1.8	SW
23:00 - 24:00	1.8	W	0.7	SSW	1.1	S
00:00 - 01:00	0.7	WNW	1.5	SSW	1.1	SSW
01:00 - 02:00	1.1	WNW	0.8	ENE	1.5	SW
02:00 - 03:00	0.7	WNW	1.2	S	0.6	SW
03:00 - 04:00	0.8	W	1.2	S	1.7	SW
04:00 - 05:00	1.5	W	1.1	S	1.1	SW
05:00 - 06:00	0.8	WNW	1.0	N	0.5	SW
06:00 - 07:00	1.7	WNW	0.8	N	1.8	SW
07:00 - 08:00	0.7	WNW	0.6	N	0.8	SSW
08:00 - 09:00	1.0	SSW	0.6	N	0.8	SSW
09:00 - 10:00	1.8	S	0.9	SE	1.2	SW
10:00 - 11:00	1.1	S	1.7	SSE	0.7	SSW
11:00 - 12:00	0.8	SSW	1.6	SE	1.4	SSE
12:00 - 13:00	0.7	WNW	0.8	SSW	1.5	SSE
13:00 - 14:00	1.7	SE	1.8	SE	0.8	SSW

Wind Rose

15-16

16-17

17-18

File: Control\8\Shadon\Windrose\Site\Control\Win-224024-Sai Ruan Patana 11-18 Jun 2024



(Miss Katesarin Vorradevitlaya)
Environmental Scientist

Preda S.

(Miss Preda Sonjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram

Wind Speed Model : Novalynx WS-25

Wind Direction Model : Novalynx WS-25

Monitor period : 11-18 Jun 2024

Serial No : A5088

Serial No : A5088

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0060	0.0000	0.0000	0.0000	0.0000	0.0000	0.0060
NNE	0.0060	0.0060	0.0000	0.0000	0.0000	0.0000	0.0119
NE	0.0060	0.0000	0.0000	0.0000	0.0000	0.0000	0.0060
ENE	0.0000	0.0238	0.0000	0.0000	0.0000	0.0000	0.0238
E	0.0060	0.0298	0.0119	0.0000	0.0000	0.0000	0.0476
ESE	0.0060	0.0179	0.0119	0.0000	0.0000	0.0000	0.0357
SE	0.0238	0.0595	0.0119	0.0000	0.0000	0.0000	0.0952
SSE	0.0060	0.0238	0.0119	0.0000	0.0000	0.0000	0.0417
S	0.0060	0.0595	0.0298	0.0000	0.0000	0.0000	0.0952
SSW	0.0476	0.0952	0.0060	0.0000	0.0000	0.0000	0.1488
SW	0.0417	0.1310	0.0417	0.0000	0.0000	0.0000	0.2143
WSW	0.0179	0.1071	0.0119	0.0000	0.0000	0.0000	0.1369
W	0.0119	0.0655	0.0000	0.0000	0.0000	0.0000	0.0774
WNW	0.0060	0.0060	0.0119	0.0000	0.0000	0.0000	0.0238
NW	0.0060	0.0060	0.0000	0.0000	0.0000	0.0000	0.0119
NNW	0.0060	0.0179	0.0000	0.0000	0.0000	0.0000	0.0238
CALM				0.0000			

Application : WindPro Ver.1.0

Control : 18 Direction Calculation With

Calculated Wind < 0.5 m/s

Data Unit : Direction in Deg.

Wind Speed in m/s

NOTE : Frequencies indicate direction from which the wind is blowing

File Name : H:\Database\WindPro\Calc\2024\06\11-18 Jun 2024

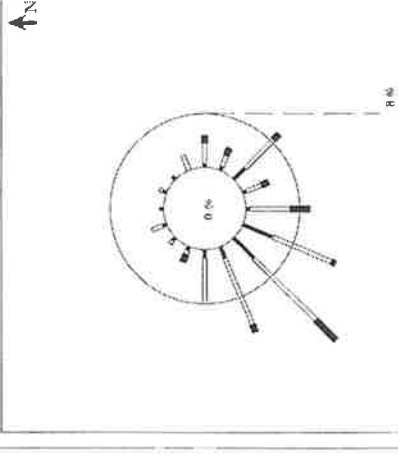
Application : WindPro Ver.1.0

Control : 16 Direction Calculation With

Calm Wind < 0.5 m/s

Data Unit : Direction in Deg.

Wind Speed in m/s



(Miss Katesarin Vorradevitlaya)
Environmental Scientist

Preda S.

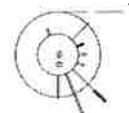
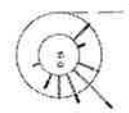
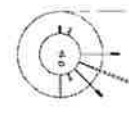
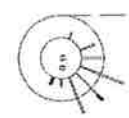
(Miss Preda Sonjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location :	Wat Takuan Kongkaram	Monitor period :	11 - 18 Jun 2024
Wind Speed Model :	Novalynx WS-25	Serial No :	A5088
Wind Direction Model :	Novalynx WS-25	Serial No :	A5088

Time	11-12 Jun 2024		12-13 Jun 2024		13-14 Jun 2024		14-15 Jun 2024	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
14:00 - 15:00	0.8	SSE	1.5	SSW	1.6	W	1.4	W
15:00 - 16:00	1.6	S	1.5	W	1.7	WSW	1.6	SSW
16:00 - 17:00	1.6	WSW	1.4	S	2.0	SE	1.1	S
17:00 - 18:00	1.8	W	1.4	ESE	0.9	SW	2.1	SSE
18:00 - 19:00	0.9	SSW	1.2	SW	1.1	SE	2.1	SW
19:00 - 20:00	1.7	S	1.8	S	1.2	SW	1.1	SW
20:00 - 21:00	0.9	SW	1.9	S	0.9	SSW	2.0	SW
21:00 - 22:00	1.5	SW	0.7	SSW	0.9	NNW	1.5	SE
22:00 - 23:00	1.2	SW	0.9	SW	1.2	SSW	1.2	ENE
23:00 - 24:00	1.1	WSW	1.9	S	0.6	SW	1.6	WSW
00:00 - 01:00	1.3	SSW	1.4	W	1.8	W	1.6	SW
01:00 - 02:00	0.9	ESE	1.1	WSW	2.0	NNW	1.2	W
02:00 - 03:00	1.5	S	2.1	SW	1.1	WSW	1.0	WSW
03:00 - 04:00	1.2	SSW	0.9	SW	0.7	NNW	1.7	WSW
04:00 - 05:00	1.5	SSE	1.5	W	1.3	SW	1.7	W
05:00 - 06:00	2.1	NNW	1.5	SSW	1.5	SW	1.9	WSW
06:00 - 07:00	1.2	WSW	2.1	S	2.1	SW	1.9	WSW
07:00 - 08:00	0.9	SSW	0.9	SW	1.3	SSW	1.3	WSW
08:00 - 09:00	1.5	WSW	2.1	E	2.1	SSE	1.6	SW
09:00 - 10:00	1.7	WSW	1.3	SSW	1.6	WSW	1.8	WSW
10:00 - 11:00	2.0	SW	1.5	SSW	1.5	SW	1.4	SE
11:00 - 12:00	1.1	SSW	1.5	SSW	1.2	W	1.0	SE
12:00 - 13:00	1.9	SSW	1.0	SSW	2.0	WSW	1.1	WSW
13:00 - 14:00	1.6	SW	0.9	SSW	0.9	SE	1.7	SW



File: C:\data\KSD\Revisi\Windrose\Windrose\11-18 Jun 2024

(Miss Katesarin Vorraderwitaya)
Environmental Scientist

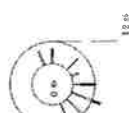
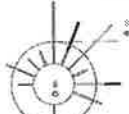
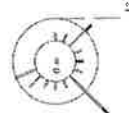
(Miss Preeda Sonjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location :	Wat Takuan Kongkaram	Monitor period :	11 - 18 Jun 2024
Wind Speed Model :	Novalynx WS-25	Serial No :	A5088
Wind Direction Model :	Novalynx WS-25	Serial No :	A5088

Time	15-16 Jun 2024		16-17 Jun 2024		17-18 Jun 2024	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
14:00 - 15:00	1.7	W	1.7	S	0.9	S
15:00 - 16:00	1.0	NNW	1.8	SSE	1.8	ENE
16:00 - 17:00	1.7	E	1.2	SE	1.4	SW
17:00 - 18:00	1.1	SSE	1.6	ESE	1.0	SSE
18:00 - 19:00	1.9	ESE	1.0	SE	2.1	S
19:00 - 20:00	1.5	SW	0.8	SE	0.8	SE
20:00 - 21:00	1.2	SW	0.8	W	2.1	E
21:00 - 22:00	1.0	SE	1.0	SE	0.9	SE
22:00 - 23:00	1.7	SW	1.4	SSW	0.8	SW
23:00 - 24:00	1.1	SE	2.0	S	1.0	SW
00:00 - 01:00	1.6	NW	2.0	ESE	0.8	WSW
01:00 - 02:00	1.0	WSW	1.1	NNE	1.9	WSW
02:00 - 03:00	0.8	NW	1.5	S	2.1	SW
03:00 - 04:00	1.9	NNW	0.7	W	1.9	SW
04:00 - 05:00	2.0	SW	0.8	N	2.0	SSW
05:00 - 06:00	1.0	WNW	1.0	ENE	1.4	E
06:00 - 07:00	1.1	SW	1.8	E	1.3	ENE
07:00 - 08:00	1.6	NNW	0.8	NNE	0.7	SSW
08:00 - 09:00	1.4	SSW	0.7	NIE	2.0	S
09:00 - 10:00	0.9	SW	1.4	E	0.8	WSW
10:00 - 11:00	2.1	S	1.4	E	2.0	WSW
11:00 - 12:00	1.7	SE	0.7	E	1.4	SSW
12:00 - 13:00	2.0	SE	2.0	ESE	1.0	SW
13:00 - 14:00	1.3	SW	1.8	SSW	0.8	SSW



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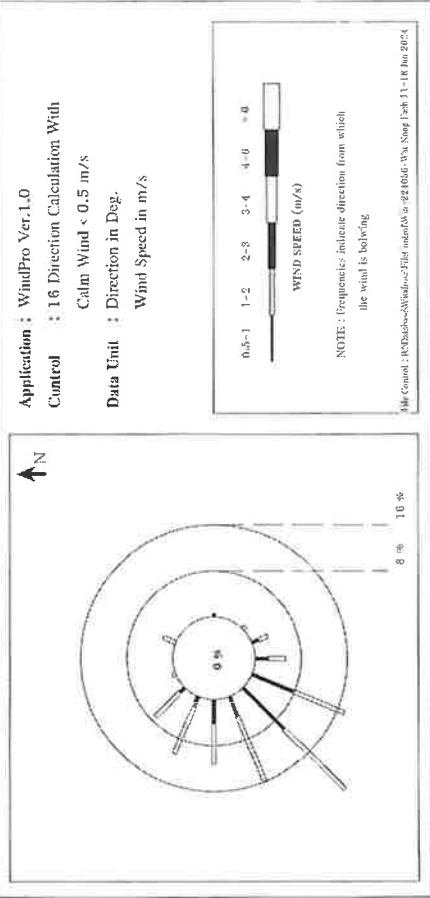
(Miss Katesarin Vorraderwitaya)
Environmental Scientist

(Miss Preeda Sonjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose
MTR-BSTE (Site 1)

Location : Wai Nong Faeb		Monitor period : 11-18 Jun 2024				
Wind Speed Model : Novalynx WS-25		Serial No : A4907				
Wind Direction Model : Novalynx WS-25		Serial No : A4907				
Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed					Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0238	0.0000	0.0000	0.0000	0.0238
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0060	0.0000	0.0000	0.0000	0.0000	0.0060
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0060	0.0000	0.0000	0.0000	0.0060
SSE	0.0119	0.0179	0.0000	0.0000	0.0000	0.0298
S	0.0238	0.0298	0.0000	0.0000	0.0000	0.0536
SSW	0.0774	0.0952	0.0000	0.0000	0.0000	0.1726
SW	0.1012	0.1488	0.0000	0.0000	0.0000	0.2500
WSW	0.0957	0.1250	0.0000	0.0000	0.0000	0.1607
W	0.0417	0.0714	0.0000	0.0000	0.0000	0.1131
WNW	0.0179	0.0893	0.0000	0.0000	0.0000	0.1071
NW	0.0119	0.0595	0.0000	0.0000	0.0000	0.0714
NNW	0.0000	0.0060	0.0000	0.0000	0.0000	0.0060
CALM						0.0000



(Miss Katesarin Vorradevitaya)
Environmental Scientist

Preeda S.

(Miss Preeda Simjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose
MTR-BSTE (Site 1)

Location : Wat Nong Faeb		Monitor period : 11 - 18 Jun 2024							
Wind Speed Model : Novalynx WS-25		Serial No : A4907							
Wind Direction Model : Novalynx WS-25		Serial No : A4907							
Time	11-12 Jun 2024		12-13 Jun 2024		13-14 Jun 2024		14-15 Jun 2024		
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	
11:00 - 12:00	1.2	SW	1.2	SW	1.1	SW	1.1	SW	
12:00 - 13:00	1.1	SW	1.4	SW	1.0	WSW	1.0	WSW	
13:00 - 14:00	1.0	WSW	1.1	WSW	0.6	SSW	1.0	SW	
14:00 - 15:00	1.2	W	1.3	SSW	0.6	SSW	0.6	SSW	
15:00 - 16:00	1.0	WSW	0.7	SSW	1.2	WSW	1.2	SSW	
16:00 - 17:00	1.3	NNW	0.7	SW	1.4	SSW	1.1	S	
17:00 - 18:00	1.2	NW	1.3	SW	1.4	S	1.0	SW	
18:00 - 19:00	0.7	WNW	1.2	WNW	1.2	SSW	1.2	SW	
19:00 - 20:00	1.3	WSW	1.4	SW	0.8	SSW	1.4	SW	
20:00 - 21:00	1.4	SW	0.9	SW	1.4	S	0.8	WNW	
21:00 - 22:00	1.3	WNW	1.2	W	1.3	SW	0.6	SW	
22:00 - 23:00	1.3	WNW	1.5	WNW	0.7	SW	0.9	SW	
23:00 - 24:00	1.2	WNW	1.2	W	0.8	SW	0.9	W	
00:00 - 01:00	1.3	WNW	0.8	WNW	0.8	SW	0.7	W	
01:00 - 02:00	1.4	WNW	1.4	W	0.9	SW	1.3	W	
02:00 - 03:00	0.7	WSW	1.4	WNW	0.9	SW	1.1	W	
03:00 - 04:00	0.8	SW	1.3	WNW	1.1	SW	0.6	W	
04:00 - 05:00	1.0	WNW	1.0	W	1.4	SW	1.1	W	
05:00 - 06:00	0.6	W	1.0	WNW	1.4	SW	0.7	W	
06:00 - 07:00	1.2	WSW	1.1	W	0.9	SW	0.7	W	
07:00 - 08:00	1.2	W	1.4	NW	1.3	NW	0.9	W	
08:00 - 09:00	1.0	WSW	0.8	SSW	0.9	SW	1.4	SSW	
09:00 - 10:00	1.0	SW	0.7	WSW	1.2	W	1.1	SSW	
10:00 - 11:00	0.9	SSW	1.1	WSW	0.7	NW	0.7	WSW	

Wind Rose

12 m/s

20 m/s

12 m/s

12 m/s



(Miss Katesarin Vorradevitaya)
Environmental Scientist

Preeda S.

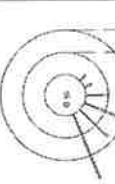
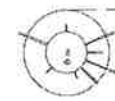
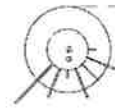
(Miss Preeda Simjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Nong Fuch
Wind Speed Model : Novalynx WS-25
Wind Direction Model : Novalynx WS-25
Monitor period : 11-18 Jun 2024
Serial No : A4907
Serial No : A4907

Time	15-16 Jun 2024		16-17 Jun 2024		17-18 Jun 2024	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
11:00 - 12:00	1.1	WSW	1.3	SW	1.3	SSE
12:00 - 13:00	1.0	SW	0.7	NW	0.7	SW
13:00 - 14:00	1.2	SW	1.4	SSE	1.2	SE
14:00 - 15:00	1.3	WNW	0.6	WSW	0.6	WSW
15:00 - 16:00	1.4	WSW	1.2	SSW	0.6	S
16:00 - 17:00	1.2	WSW	0.6	SSW	1.1	SW
17:00 - 18:00	0.8	S	1.3	SW	1.3	S
18:00 - 19:00	1.3	SSW	0.6	S	0.8	S
19:00 - 20:00	1.3	WSW	1.2	S	1.3	SSW
20:00 - 21:00	1.2	WNW	0.9	SSE	1.0	SSW
21:00 - 22:00	1.1	W	0.7	SW	1.2	SSW
22:00 - 23:00	1.0	SSW	1.4	SSW	1.0	WSW
23:00 - 24:00	1.2	WNW	1.2	SSW	0.6	SSW
00:00 - 01:00	1.1	NW	1.4	SSW	1.0	SW
01:00 - 02:00	1.0	WNW	0.9	E	1.1	WSW
02:00 - 03:00	1.0	NW	0.9	SSW	1.2	WSW
03:00 - 04:00	1.3	NW	1.1	SSW	0.8	WSW
04:00 - 05:00	1.4	NW	0.8	SSW	1.1	WSW
05:00 - 06:00	1.3	NW	1.4	NNE	1.4	WSW
06:00 - 07:00	1.2	NW	1.4	NNE	1.0	WSW
07:00 - 08:00	1.2	NW	1.0	NNE	0.7	SW
08:00 - 09:00	0.7	SW	1.3	NNE	1.1	SW
09:00 - 10:00	0.8	SSW	0.6	SSE	1.0	WSW
10:00 - 11:00	0.8	SSW	1.3	SSE	0.6	SSW



File Name: 8270Database\WindRose-224004-Wat Nong Fuch-11-18-Jun-2024

(Miss Katesarin Vorradetwityaya)
Environmental Scientist

Preeda S.

(Miss Preeda Somjai)
Technical Management Team



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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (NSTE) REQUEST SERVICE No. : 1202/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Subambient Pressure Sampling
SAMPLING DATE : 11-12/06/2024 ANALYTICAL DATE : 20/06/2024
SAMPLING TIME : 15:30-14:30 SAMPLE CONDITION : Normal
RECEIVED DATE : 13/06/2024 FILE CODE : 254056_10-15 June
REPORT DATE : 24/06/2024

Compound	Non Detection		Wet Nong Fuch		STANDARD* (µg/m ³)
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3
Styrene	0.02	0.09	0.02	0.09	-

Method: Gas Chromatography/Mass Spectrometry (GC/MS) EPA Method 821-0, EPA Method 821-1, EPA Method 821-2

Sinthon Chinnasaga
(Miss Sirwan Chinnasaga)
Analyst

(Mrs. Araya Tipatukul)
Technical Management Team

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4. - Not available.



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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 1213167
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 12-13/06/2024	ANALYTICAL DATE	: 20/06/2024
SAMPLING TIME	: 13:45-14:38	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 14/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 24/06/2024		

Compound	Non Detection		Wet Nung Fach		STANDARD* (µg/m ³)
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3
Styrene	0.02	0.09	ND	ND	-

Method for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Method TO-15.1999

Sirivan Chimsaeng
(Miss Sirivan Chimsaeng)
Analyst

(Mrs. Anya Tipparak)
Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 1225167
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 13-14/06/2024	ANALYTICAL DATE	: 20-21/06/2024
SAMPLING TIME	: 14:40-14:55	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 15/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 24/06/2024		

Compound	Non Detection		Wet Nung Fach		STANDARD* (µg/m ³)
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3
Styrene	0.02	0.09	0.06	0.26	-

Method for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Method TO-15.1999

Sirivan Chimsaeng
(Miss Sirivan Chimsaeng)
Analyst

(Mrs. Anya Tipparak)
Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 121467
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 14/10/62024	ANALYTICAL DATE	: 21/06/2024
SAMPLING TIME	: 14:35-14:04	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 16/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 24/06/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Wat Nong Faeb		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3
Styrene	0.02	0.09	0.04	0.17	0.17

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd EPA Method, TO-15, 1999

Sirwan Chimsa-nga
(Miss Sirwan Chimsa-nga)

Analyst

(Mrs. Anya Tipparuk)

Technical Management Team

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4. - Not available.

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 121467
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 15/16/62024	ANALYTICAL DATE	: 22/06/2024
SAMPLING TIME	: 14:05-13:55	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 17/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 25/06/2024		

Compound	Non Detection			SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Wat Nong Faeb			
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$		
1,3-butadiene	0.003	0.007	ND	ND		5.3
Styrene	0.02	0.09	ND	ND		0.17

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd EPA Method, TO-15, 1999

Sirwan Chimsa-nga
(Miss Sirwan Chimsa-nga)

Analyst

(Mrs. Anya Tipparuk)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : BSI Elastomers Co., Ltd. (BSTE) : 1244/67
SAMPLING BY : SECOT Co., Ltd. : Subatmospheric Pressure Sampling
SAMPLING DATE : 16-17/06/2024 : 22:06/2024
SAMPLING TIME : 15:12-14:57 : Normal
RECEIVED DATE : 18/06/2024 : 22:06/2024
REPORT DATE : 25/06/2024 : 22:06/2024

Compound	Non Detection		SAMPLING LOCATION		STANDARD* (µg/m ³)
	ppbv	µg/m ³	Wat Nong Fieb		
			ppbv	µg/m ³	

1,3-butadiene	0.003	0.007	0.77	1.70		5.3
Styrene	0.02	0.09	0.08	0.34		*

Method for the Determination of Toxic Organic Compound in Ambient Air, 2nd Edition, 1992

Sirhan Chirsa-nga
(Miss Sirwan Chirsa-nga)

Analyst

Sirhan Chirsa-nga
(Mrs. Anya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : BSI Elastomers Co., Ltd. (BSTE) : 1250/67
SAMPLING BY : SECOT Co., Ltd. : Subatmospheric Pressure Sampling
SAMPLING DATE : 17-18/06/2024 : 21-22/06/2024
SAMPLING TIME : 14:59-14:40 : Normal
RECEIVED DATE : 19/06/2024 : 22:06/2024
REPORT DATE : 27/06/2024 : 22:06/2024

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	Wat Nong Fieb		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	

1,3-butadiene	0.003	0.007	ND	ND		5.3
Styrene	0.02	0.09	0.13	0.55		*

Method for the Determination of Toxic Organic Compound in Ambient Air, 2nd Edition, 1992

Sirhan Chirsa-nga
(Miss Sirwan Chirsa-nga)

Analyst

Sirhan Chirsa-nga
(Mrs. Anya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 1202/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 11-12/06/2024	ANALYTICAL DATE	: 20/06/2024
SAMPLING TIME	: 14:38-15:44	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 13/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 24/06/2024		

Compound	Non Detection			SAMPLING LOCATION			STANDARD* (µg/m ³)
	ppbv	µg/m ³		ppbv	µg/m ³		
1,3-butadiene	0.003	0.007		2.13	4.71		5.3
Styrene	0.02	0.09		0.35	1.49		-

Method for the Determination of Toxic Organic Compounds in Ambient Air, EPA Method TO-15, 1999

Sirhan Chimsang
(Miss Sirwan Chimsang)

Analyst

(Mrs. Anya Tipparak)

Technical Management Team

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4. - Not available.

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 1213/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 12-13/06/2024	ANALYTICAL DATE	: 20/06/2024
SAMPLING TIME	: 13:45-14:10	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 14/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 24/06/2024		

Compound	Non Detection			SAMPLING LOCATION			STANDARD* (µg/m ³)
	ppbv	µg/m ³		ppbv	µg/m ³		
1,3-butadiene	0.003	0.007		1.43	3.16		5.3
Styrene	0.02	0.09		0.13	0.55		-

Method for the Determination of Toxic Organic Compounds in Ambient Air, EPA Method TO-15, 1999

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Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 123567
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 13-14/06/2024	ANALYTICAL DATE	: 20-21/06/2024
SAMPLING TIME	: 14:12-15:48	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 15/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 24/06/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	Sol Ruam Pattana		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	

1,3-butadiene	0.003	0.007	ND	ND	5.3
Styrene	0.02	0.09	0.13	0.55	-

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, EPA Method-TO-15, 1999

Sinhan Chinsanga
(Miss Sirivan Chinsanga)
Analyst

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Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 123467
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 14-15/06/2024	ANALYTICAL DATE	: 21/06/2024
SAMPLING TIME	: 11:48-13:30	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 16/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 24/06/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	Sol Ruam Pattana		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	

1,3-butadiene	0.003	0.007	ND	ND	5.3
Styrene	0.02	0.09	0.13	0.55	-

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, EPA Method-TO-15, 1999

Sinhan Chinsanga
(Miss Sirivan Chinsanga)
Analyst

(Mrs. Anya Tipparak)
Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 123667
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subamospheric Pressure Sampling
SAMPLING DATE	: 15/16/06/2024	ANALYTICAL DATE	: 22/06/2024
SAMPLING TIME	: 13:31-13:25	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 17/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 25/06/2024		

Compound	Non Detection			SAMPLING LOCATION			STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007		0.75	1.66		5.3
Styrene	0.02	0.09		0.06	0.26		*

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd ed., EPA Methods TO-15, 1999

Sittwan Chinsanya
(Miss Sittwan Chinsanya)

Analyst

(Mrs. Anya Tippasuk)

Technical Management Team

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4. - Not available.

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 124467
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subamospheric Pressure Sampling
SAMPLING DATE	: 16/17/06/2024	ANALYTICAL DATE	: 22/06/2024
SAMPLING TIME	: 14:37-14:17	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 18/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 25/06/2024		

Compound	Non Detection			SAMPLING LOCATION			STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007		ND	ND		5.3
Styrene	0.02	0.09		0.11	0.47		*

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd ed., EPA Methods TO-15, 1999

Sittwan Chinsanya
(Miss Sittwan Chinsanya)

Analyst

(Mrs. Anya Tippasuk)

Technical Management Team

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4. - Not available.



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TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 125057
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 17-18/06/2024	ANALYTICAL DATE	: 21-22/06/2024
SAMPLING TIME	: 14:20-14:37	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 19/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 27/06/2024		

Compound	Non Detection			STANDARD* (µg/m ³)
	ppbv	µg/m ³	µg/m ³	

1,3-butadiene	0.003	0.007	2.70	5.3
Styrene	0.02	0.09	0.47	-

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, EPA Methods TO-15, 1998

Sirivan Chirasinga
(Miss Sirivan Chirasinga)
Analyst

(Mrs. Anya Tippaak)
Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 125057
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 11-12/06/2024	ANALYTICAL DATE	: 20/06/2024
SAMPLING TIME	: 14:57-15:57	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 13/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 24/06/2024		

Compound	Non Detection			STANDARD* (µg/m ³)
	ppbv	µg/m ³	µg/m ³	

1,3-butadiene	0.003	0.007	ND	5.3
Styrene	0.02	0.09	0.06	0.26

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, EPA Methods TO-15, 1998

Sirivan Chirasinga
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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 1213/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 12-13/06/2024	ANALYTICAL DATE	: 20/06/2024
SAMPLING TIME	: 13:59-14:30	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 14/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 24/06/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* (µg/m ³)
			Wat Takuan Kongkaram		
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3
Styrene	0.02	0.09	0.02	0.09	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Method TO-15, 1992

Simhan Chimsa-ng
(Miss Sirivan Chimsa-ng)

Analyst

Simhan Chimsa-ng
(Mrs. Anya Tipparak)

Technical Management Team

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4. - Not available.

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 1225/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 13-14/06/2024	ANALYTICAL DATE	: 20-21/06/2024
SAMPLING TIME	: 13:51-14:05	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 15/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 24/06/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* (µg/m ³)
			Wat Takuan Kongkaram		
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3
Styrene	0.02	0.09	0.02	0.09	*

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Method TO-15, 1992

Simhan Chimsa-ng
(Miss Sirivan Chimsa-ng)

Analyst

Simhan Chimsa-ng
(Mrs. Anya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 123467
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 14-15/06/2024	ANALYTICAL DATE	: 21/06/2024
SAMPLING TIME	: 14:06-13:45	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 16/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 24/06/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD ^a ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	Wat Takuan Kongkaram		
		\pm	ppbv	$\mu\text{g}/\text{m}^3$	

1,3-butadiene	0.003	0.007	ND			5.3
Styrene	0.02	0.09	0.34			-

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, EPA Method 821-15, 1992.

Sirwan Chinsiranya
(Miss Sirwan Chinsiranya)
Analyst

(Mrs. Anya Tipparak)
Technical Management Team

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4. - Not available.

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 123467
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 15-16/06/2024	ANALYTICAL DATE	: 22/06/2024
SAMPLING TIME	: 13:45-13:33	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 17/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 25/06/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	Wat Takuan Kongkaram		
			ppbv	$\mu\text{g}/\text{m}^3$	

1,3-butadiene	0.003	0.007	0.71			5.3
Styrene	0.02	0.09	0.02			-

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, EPA Method 821-15, 1992.

Sirwan Chinsiranya
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Analyst

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Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 1244/07
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 16/10/62024	ANALYTICAL DATE	: 22/06/2024
SAMPLING TIME	: 14:32-14:34	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 18/06/2024	FILE CODE	: 224056 TD-15 June
REPORT DATE	: 25/06/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Wat Tukuan Kongkarn		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3
Styrene	0.02	0.09	0.08	0.34	-

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, EPA Method TO-15, 1999

Shirwan Chirsasng
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Analyst

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Technical Management Team

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4. - Not available.

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 1250/07
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 17-18/06/2024	ANALYTICAL DATE	: 21-22/06/2024
SAMPLING TIME	: 14:35-14:21	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 19/06/2024	FILE CODE	: 224056 TD-15 June
REPORT DATE	: 27/06/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Wat Tukuan Kongkarn		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3
Styrene	0.02	0.09	0.04	0.17	0.17

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, EPA Method TO-15, 1999

Shirwan Chirsasng
(Miss Shirwan Chirsasng)

Analyst

Shirwan Chirsasng
(Mrs. Anya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BSI Elastomers Co., Ltd. (BSI E)	REQUEST SERVICE No.	: 012467
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 22/30/2024	ANALYTICAL DATE	: 29/01/2024
SAMPLING TIME	: 11:00-10:58	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 24/01/2024	FILE CODE	: 224056_TD-15_January
REPORT DATE	: 30/01/2024		

Completed	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	Var Nong Path	$\mu\text{g}/\text{m}^3$	
1,3-bisulfone	0.003	0.007	1.93	4.27	5.3

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, Methods TD-15.1999

Signature Chinnasa-ngai
(Miss Sirwan Chinnasa-ngai)

Analyst

Signature Chinnasa-ngai
(Mrs. Anya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BSI Elastomers Co., Ltd. (BSI E)	REQUEST SERVICE No.	: 012467
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 22/23/01/2024	ANALYTICAL DATE	: 29/01/2024
SAMPLING TIME	: 12:09-11:45	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 24/01/2024	FILE CODE	: 224056_TD-15_January
REPORT DATE	: 30/01/2024		

Completed	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	Sai Kham Paloma	$\mu\text{g}/\text{m}^3$	
1,3-bisulfone	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, Methods TD-15.1999

Signature Chinnasa-ngai
(Miss Sirwan Chinnasa-ngai)

Analyst

Signature Chinnasa-ngai
(Mrs. Anya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 012467
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 22-23/01/2024	ANALYTICAL DATE	: 29/01/2024
SAMPLING TIME	: 11:48-11:58	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 24/01/2024	FILE CODE	: 224056 TO-15 January
REPORT DATE	: 30/01/2024		

Compound	Non Detection		Sampling Location		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	Wai Tukum Kongsaram (Ban Ta Kum-Aun Pui Do)	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Criteria Compounds in Ambient Air, EPA Method TO-15, 1998

Shivan Chinnang
(Miss Sirwan Chinnang-ua)

Analyst

Shivan Chinnang
(Miss Anya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0198.0199.0201.67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 01-02/2024	ANALYTICAL DATE	: 21-22/02/2024
SAMPLING TIME	: 11:15-11:10	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 03/02/2024	FILE CODE	: 224056 TO-15 February
REPORT DATE	: 25/02/2024		

Compound	Non Detection		Sampling Location		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	Wai Nong Faeb	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Criteria Compounds in Ambient Air, EPA Method TO-15, 1998

Shivan Chinnang
(Miss Sirwan Chinnang-ua)

Analyst

Shivan Chinnang
(Miss Anya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 019K 0199 0201/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 01-02-2024	ANALYTICAL DATE	: 21-02-2024
SAMPLING TIME	: 13:07-13:16	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 03-02-2024	FILE CODE	: 224036_TO-15_February
REPORT DATE	: 23-02-2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD ^a ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	Sol Ruam Pattana	ppbv	
1,2-hmdione	0.003	0.007	ND	ND	5.3

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, EPA Method 821-1, 1998

Sirwan Chinsirapong
(Miss Sirwan Chinsirapong)

Analyst

Sirwan Chinsirapong
(Mrs. Araya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 019K 0199 0201/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 01-02-2024	ANALYTICAL DATE	: 21-02-2024
SAMPLING TIME	: 10:40-10:43	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 03-02-2024	FILE CODE	: 224036_TO-15_February
REPORT DATE	: 23-02-2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD ^a ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	Wat Taluan Kongkram (Hin Ta Kuan-Au Pra Du)	ppbv	
1,2-hmdione	0.003	0.007	ND	ND	5.3

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, EPA Method 821-1, 1998

Sirwan Chinsirapong
(Miss Sirwan Chinsirapong)

Analyst

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: HST Elastomers Co., Ltd (HSTE)	REQUEST SERVICE No.	: 0405/0405/0407/67
SAMPLING BY	: SECOT Co., Ltd	SAMPLING METHOD	: Submersion Pressure Sampling
SAMPLING DATE	: 04-05/03/2024	ANALYTICAL DATE	: 07/03/2024
SAMPLING TIME	: 11:13-11:17	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 06/03/2024	FILE CODE	: 234056 TO-15 March
REPORT DATE	: 20/03/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* (µg/m ³)
	ppbv	µg/m ³	Wai Nong Eneb		
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd EPA Methods TO-15, 1999

Silwan Chimsara
(Miss Sirwan Chimsara)
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Silwan Chimsara
(Mrs. Anya Tiparak)
Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: HST Elastomers Co., Ltd (HSTE)	REQUEST SERVICE No.	: 0405/0405/0407/67
SAMPLING BY	: SECOT Co., Ltd	SAMPLING METHOD	: Submersion Pressure Sampling
SAMPLING DATE	: 04-05/03/2024	ANALYTICAL DATE	: 07/03/2024
SAMPLING TIME	: 13:50-14:00	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 06/03/2024	FILE CODE	: 224056 TO-15 March
REPORT DATE	: 20/03/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD*
	ppbv	µg/m ³	Sol Rumi Patana		
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd EPA Methods TO-15, 1999

Silwan Chimsara
(Miss Sirwan Chimsara)
Analyst

Silwan Chimsara
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Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: HST Elastomers Co., Ltd (HSTEL)	REQUEST SERVICE No.	: 0405/0405/0407/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 04-03-2024	ANALYTICAL DATE	: 07-03-2024
SAMPLING TIME	: 10:28-10:28	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 06-03-2024	FILE CODE	: 224056_TO-15_March
REPORT DATE	: 30-03-2024		

Compound	Non Detection			SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	Wm Takuan Kongkarn	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND		ND	5.3

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd JIS S. 326.6, March 15, 1999

Sirivan Chinsanga
(Miss Sirivan Chinsanga)

Analyst

Sirivan Chinsanga
(Mrs. Araya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: HST Elastomers Co., Ltd (HSTEL)	REQUEST SERVICE No.	: 0755/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 22-23-04-2024	ANALYTICAL DATE	: 25-04-2024
SAMPLING TIME	: 13:30-13:40	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 24-04-2024	FILE CODE	: 224056_TO-15_April
REPORT DATE	: 30-04-2024		

Compound	Non Detection			SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	Wm Nong Faeh	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND		ND	5.3

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd JIS S. 326.6, March 15, 1999

Sirivan Chinsanga
(Miss Sirivan Chinsanga)

Analyst

Sirivan Chinsanga
(Mrs. Araya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : BST Electronics Co., Ltd. (BSTE) REQUEST SERVICE No. : 078567
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Subambient Pressure Sampling
SAMPLING DATE : 22-04-2024 ANALYTICAL DATE : 25-04-2024
SAMPLING TIME : 12:46-1:10 SAMPLE CONDITION : Normal
RECEIVED DATE : 24-04-2024 FILE CODE : 224056 TO-15 April
REPORT DATE : 30-04-2024

Compound	Non Detection			SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	Sol Room Platform		
1,3-butadiene	0.003	0.007	ND			5.3

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd EPA Standard, US-15, 1999

Sitikan Chinsanga
(Miss Sirivan Chinsanga)

Analyst

Sitikan Chinsanga
(Miss Anya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : BST Electronics Co., Ltd. (BSTE) REQUEST SERVICE No. : 078567
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Subambient Pressure Sampling
SAMPLING DATE : 22-04-2024 ANALYTICAL DATE : 25-04-2024
SAMPLING TIME : 13:15-13:20 SAMPLE CONDITION : Normal
RECEIVED DATE : 24-04-2024 FILE CODE : 224056 TO-15 April
REPORT DATE : 30-04-2024

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	Wat Takum Kongkaran	
1,3-butadiene	0.003	0.007	ND		5.7

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd EPA Standard, TO-15, 1999

Sitikan Chinsanga
(Miss Sirivan Chinsanga)

Analyst

Sitikan Chinsanga
(Miss Anya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: HST Elastomers Co., Ltd. (HSTE)	REQUEST SERVICE No.	: 1061/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 27-28/05/2024	ANALYTICAL DATE	: 30/05/2024
SAMPLING TIME	: 15:30-16:00	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 29/05/2024	FILE CODE	: 22-056_TO-15 May
REPORT DATE	: 31/05/2024		

Compound	SAMPLING LOCATION			STANDARD* ($\mu\text{g}/\text{m}^3$)
	Non Detection	Wat Nong Faeh		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	
1,3-butadiene	0.003	0.007	ND	5.3

Method for the Determination of Toxic Organic Compound in Ambient Air, 2nd Edition, Method TO-15, 1992

Shirion Chiravong
(Miss Sirivan Chiravong)

Analyst

Shirion Chiravong
(Mrs. Anya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: DST Elastomers Co., Ltd. (DSTE)	REQUEST SERVICE No.	: 1061/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 27-28/05/2024	ANALYTICAL DATE	: 30/05/2024
SAMPLING TIME	: 17:44-18:40	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 29/05/2024	FILE CODE	: 22-056_TO-15 May
REPORT DATE	: 31/05/2024		

Compound	SAMPLING LOCATION				STANDARD ^a ($\mu\text{g}/\text{m}^3$)
	Non Detection		Sol Ruam Pattana		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
I,3-butadiene	0.003	0.007	0.46	1.02	5.3

Method for the Determination of Toxic Organic Compound in Ambient Air, 2nd Edition, Method TO-15, 1992

Shirion Chiravong
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Analyst

Shirion Chiravong
(Mrs. Anya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE)
REQUEST SERVICE No. : 106167
SAMPLING BY : SECOT Co., Ltd.
SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING DATE : 17-28/05/2024
ANALYTICAL DATE : 30/05/2024
SAMPLING TIME : 16:00-17:15
SAMPLE CONDITION : Normal
RECEIVED DATE : 29/05/2024
FILE CODE : 224056 TO-15 May
REPORT DATE : 31/05/2024

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	Wat Takuan Kongsakun		
1,3-butadiene	0.003	0.007	ppbv	$\mu\text{g}/\text{m}^3$	5.3

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd EPA Method TO-15 (1999)

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(Mrs. Araya Tipparak)

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE)
REQUEST SERVICE No. : 159967
SAMPLING BY : SECOT Co., Ltd.
SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING DATE : 24-25/06/2024
ANALYTICAL DATE : 27-28/06/2024
SAMPLING TIME : 15:30-16:50
SAMPLE CONDITION : Normal
RECEIVED DATE : 26/06/2024
FILE CODE : 224056 TO-15 June
REPORT DATE : 05/07/2024

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	Wat Nong Faeb		
			ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd EPA Method TO-15 (1999)

Shirwan Chimsanga
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Analyst

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(Mrs. Araya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 1299/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 24-25/06/2024	ANALYTICAL DATE	: 27-28/06/2024
SAMPLING TIME	: 14:25-14:25	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 26/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 05/07/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Sol Ruan Pattana		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,2-butadiene	0.003	0.007	1.77	3.92	5.3

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd EPA Method TO-15.1999

Sirwan Chinsiranya
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Analyst

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Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 1299/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subambient Pressure Sampling
SAMPLING DATE	: 24-25/06/2024	ANALYTICAL DATE	: 27-28/06/2024
SAMPLING TIME	: 14:40-14:40	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 26/06/2024	FILE CODE	: 224056 TO-15 June
REPORT DATE	: 05/07/2024		

Compound	Non Detection		SAMPLING LOCATION		STANDARD- ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	Wat Takuan Kongkaram		
				ppbv	$\mu\text{g}/\text{m}^3$
1,2-butadiene	0.003	0.007	ND	ND	5.3

Method for the Determination of Toxic Organic Compounds in Ambient Air, 2nd EPA Method TO-15.1999

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Analyst

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Technical Management Team

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 224056 Sik (Cert)/SBR Dryer (ST)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 11/06/2024
RECEIVED DATE	: 14/06/2024	ANALYTICAL DATE	: 15/06/2024
REPORT DATE	: 02/07/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: SBR Dryer (Outlet)	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Process	FUEL TYPE	: *

STACK DESCRIPTION

Height	: 30.0	m	Gas Velocity	: 10.80	m/s
Diameter	: 0.92 x 0.63	m	Flow Rate*	: 351.40	Ncu.m ³ /min
Temperature	: 33.0	°C	Moisture	: 3.6	%
Excess Oxygen	: 20.9	%			

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
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Syrene	ppm	3.07		US EPA Method 18
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Sudaporn S.
(Miss Sudaporn Soonthorn)
Analyst
Main Paowasanperch
(Miss Narisa Paowasanperch)
Technical Management Team

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3. * At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.
4. Production grade during the measurement period is SBR 17XX

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 224056 Sik (Cert)/SBR Dryer (ST)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 12/06/2024
RECEIVED DATE	: 14/06/2024	ANALYTICAL DATE	: 15/06/2024
REPORT DATE	: 02/07/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: SBR Dryer (Outlet)	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Process	FUEL TYPE	: *

STACK DESCRIPTION

Height	: 30.0	m	Gas Velocity	: 12.80	m/s
Diameter	: 0.92 x 0.63	m	Flow Rate*	: 403.30	Ncu.m ³ /min
Temperature	: 40.0	°C	Moisture	: 4.4	%
Excess Oxygen	: 20.9	%			

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
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Syrene	ppm	4.62		US EPA Method 18
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(Miss Sudaporn Soonthorn)
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Main Paowasanperch
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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 224056 Sik (Cer)/SBR Dryer (ST)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/06/2024
RECEIVED DATE	: 15/06/2024	ANALYTICAL DATE	: 18/06/2024
REPORT DATE	: 02/07/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: SBR Dryer (Outlet)	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Process	FUEL TYPE	: -

STACK DESCRIPTION

Height	: 30.0	m	Gas Velocity	: 10.30	m/s
Diameter	: 0.92 x 0.63	m	Flow Rate*	: 330.50	Ncu.m/min
Temperature	: 35.0	°C	Moisture	: 3.9	%
Excess Oxygen	: 20.6	%			

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
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Styrene	ppm	0.95	-	US EPA Method 18
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Sudaporn S.

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poovasanpetch

(Miss Narisa Poovasanpetch)

Technical Management Team

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4. Production grade during the measurement period is SBR 17XX

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 224056 Sik (Cer)/SBR Dryer (ST)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 15/06/2024
RECEIVED DATE	: 18/06/2024	ANALYTICAL DATE	: 19/06/2024
REPORT DATE	: 02/07/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: SBR Dryer (Outlet)	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Process	FUEL TYPE	: -

STACK DESCRIPTION

Height	: 30.0	m	Gas Velocity	: 11.00	m/s
Diameter	: 0.92 x 0.63	m	Flow Rate*	: 334.20	Ncu.m/min
Temperature	: 45.0	°C	Moisture	: 6.0	%
Excess Oxygen	: 20.6	%			

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
-----------	-------	----------	----------	------------------

Styrene	ppm	2.01	-	US EPA Method 18
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Narisa Poovasanpetch

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4. Production grade during the measurement period is SBR 17XX



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 224056 Sik (Cert)/SBR Dryer (ST)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 16/06/2024
RECEIVED DATE	: 18/06/2024	ANALYTICAL DATE	: 19/06/2024
REPORT DATE	: 02/07/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: SBR Dryer (Outlet)	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Process	FUEL TYPE	: -

STACK DESCRIPTION

Height	: 30.0 m	Gas Velocity	: 10.40 m/s
Diameter	: 0.92 x 0.63 m	Flow Rate*	: 321.00 Nm ³ /min
Temperature	: 43.0 °C	Moisture	: 5.2 %
Excess Oxygen	: 20.8 %		

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
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Styrene	ppm	1.25	-	US EPA Method 18
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Miss Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

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4. Production grade during the measurement period is SBR 17XX



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 224056 Sik (Cert)/SBR Dryer (ST)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 17/06/2024
RECEIVED DATE	: 18/06/2024	ANALYTICAL DATE	: 20/06/2024
REPORT DATE	: 02/07/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: SBR Dryer (Outlet)	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Process	FUEL TYPE	: -

STACK DESCRIPTION

Height	: 30.0 m	Gas Velocity	: 11.10 m/s
Diameter	: 0.92 x 0.63 m	Flow Rate*	: 341.50 Nm ³ /min
Temperature	: 44.0 °C	Moisture	: 5.1 %
Excess Oxygen	: 20.6 %		

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
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Styrene	ppm	1.16	-	US EPA Method 18
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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 234056 Ssk (Cer)/SBR Dryer (ST)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 18/06/2024
RECEIVED DATE	: 19/06/2024	ANALYTICAL DATE	: 21/06/2024
REPORT DATE	: 02/07/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: SBR Dryer (Outlet)	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Process	FUEL TYPE	: -

STACK DESCRIPTION			
Height	: 30.0	m	Gas Velocity : 11.30 m/s
Diameter	: 0.92 x 0.63	m	Flow Rate* : 348.20 Nm ³ /min
Temperature	: 45.0	°C	Moisture : 5.1 %
Excess Oxygen	: 20.7	%	

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
Styrene	ppm	2.18	-	US EPA Method 18

Sudaporn S.

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poovasanpetch

(Miss Narisa Poovasanpetch)

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4. Production grade during the measurement period is SBR 17XX

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 224056 Ssk (Cer)/AC Unit -1,3 BD
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 11/06/2024
RECEIVED DATE	: 14/06/2024	ANALYTICAL DATE	: 15/06/2024
REPORT DATE	: 02/07/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: A/C Unit of Surge II (Outlet)	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Process	FUEL TYPE	: -

STACK DESCRIPTION			
Height	: 6.0	m	Gas Velocity : 0.60 m/s
Diameter	: 0.30	m	Flow Rate* : 2.20 Nm ³ /min
Temperature	: 35.0	°C	Moisture : 3.9 %
Excess Oxygen	: 20.7	%	

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
1,3-Butadiene	ppm	ND (<0.01)	§17	US EPA Method 18

Sudaporn S.

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poovasanpetch

(Miss Narisa Poovasanpetch)

Technical Management Team

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3. * At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. Emission standard according to EIA report.

5. Production grade during the measurement period is SBR 17XX

6. ND = non-detectable



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 224056 SIK (Cert)/AC Unit (1,3 BD)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 12/06/2024
RECEIVED DATE	: 14/06/2024	ANALYTICAL DATE	: 15/06/2024
REPORT DATE	: 02/07/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: A/C Unit of Surge II (Outlet)	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Process	FUEL TYPE	: *

STACK DESCRIPTION

Height	: 6.0	m	Gas Velocity	: 1.70	m/s
Diameter	: 0.30	m	Flow Rate*	: 6.50	Nm ³ /min
Temperature	: 36.0	°C	Moisture	: 4.0	%
Excess Oxygen	: 20.6	%			

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
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1,3-Butadiene ppm ND (<0.01) 5^{1/2} US EPA Method 18

Sudaporn S.

(Miss Sudaporn Soonthorn)

Analyst

Maiw Pansasapetch

(Miss Narisa Poowasametch)

Technical Management Team

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4. ^{1/2} Emission standard according to EIA report.

5. Production grade during the measurement period is SBR 17XX

6. ND = non-detectable

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 224056 SIK (Cert)/AC Unit (1,3 BD)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 13/06/2024
RECEIVED DATE	: 14/06/2024	ANALYTICAL DATE	: 15/06/2024
REPORT DATE	: 02/07/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: A/C Unit of Surge II (Outlet)	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Process	FUEL TYPE	: *

STACK DESCRIPTION

Height	: 6.0	m	Gas Velocity	: 0.60	m/s
Diameter	: 0.30	m	Flow Rate*	: 2.20	Nm ³ /min
Temperature	: 38.0	°C	Moisture	: 4.6	%
Excess Oxygen	: 20.5	%			

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
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1,3-Butadiene ppm ND (<0.01) 5^{1/2} US EPA Method 18

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Analyst

Maiw Pansasapetch

(Miss Narisa Poowasametch)

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4. ^{1/2} Emission standard according to EIA report.

5. Production grade during the measurement period is SBR 17XX

6. ND = non-detectable



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STACK EMISSION ANALYSIS REPORT

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SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 14/06/2024
RECEIVED DATE	: 15/06/2024	ANALYTICAL DATE	: 18/06/2024
REPORT DATE	: 02/07/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: A/C Unit of Surge II (Outlet)	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Process	FUEL TYPE	: *
STACK DESCRIPTION			
Height	: 6.0 m	Gas Velocity	: 1.80 m/s
Diameter	: 0.30 m	Flow Rate*	: 6.80 Nm ³ /min
Temperature	: 36.0 °C	Moisture	: 4.3 %
Excess Oxygen	: 20.8 %		

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
1,3-Butadiene	ppm	ND (<0.01)	5 ^{IV}	US EPA Method 18

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4. ^{IV} Emission standard according to EIA report.

5. Production grade during the measurement period is SBR 17XX

6. ND = non-detectable

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(Miss Sudaporn Soonthorn)

Analyst

Naiva Poowasupetch
(Miss Narisa Poowasupetch)

Technical Management Team

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 224056 SIK (Cert)/AC Unit (1,3 BD)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 15/06/2024
RECEIVED DATE	: 18/06/2024	ANALYTICAL DATE	: 19/06/2024
REPORT DATE	: 02/07/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: A/C Unit of Surge II (Outlet)	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Process	FUEL TYPE	: *
STACK DESCRIPTION			
Height	: 6.0 m	Gas Velocity	: 1.80 m/s
Diameter	: 0.30 m	Flow Rate*	: 7.00 Nm ³ /min
Temperature	: 40.0 °C	Moisture	: 4.9 %
Excess Oxygen	: 20.5 %		

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
1,3-Butadiene	ppm	ND (<0.01)	5 ^{IV}	US EPA Method 18

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4. ^{IV} Emission standard according to EIA report.

5. Production grade during the measurement period is SBR 17XX

6. ND = non-detectable

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Analyst

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 224056 Sik (Cer)/AC Unit (1.3 BD)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 16/06/2024
RECEIVED DATE	: 18/06/2024	ANALYTICAL DATE	: 19/06/2024
REPORT DATE	: 02/07/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: A/C Unit of Surge II (Outlet)	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Process	FUEL TYPE	: *

STACK DESCRIPTION

Height	: 6.0	m	Gas Velocity	: 0.60	m/s
Diameter	: 0.30	m	Flow Rate*	: 2.20	Ncu.m/min
Temperature	: 41.0	°C	Moisture	: 5.1	%
Excess Oxygen	: 20.6	%			

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
1,3-Butadiene	ppm	ND (<0.01)	5 ^{1/}	US EPA Method 18

Sudaporn S.

(Miss Sudaporn Soonthorn)

Analyst

Naim Pansamphol

(Miss Narisa Poowasamphet)

Technical Management Team

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4.^{1/} Emission standard according to EIA report.

5. Production grade during the measurement period is SBR 17XX

6. ND = non-detectable

STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 224056 Sik (Cer)/AC Unit (1.3 BD)
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 17/06/2024
RECEIVED DATE	: 18/06/2024	ANALYTICAL DATE	: 19/06/2024
REPORT DATE	: 02/07/2024	SAMPLE CONDITION	: Normal
STACK LOCATION	: A/C Unit of Surge II (Outlet)	OPERATOR	: Mr. Supakit Tamooka
SOURCE DESCRIPTION	: Process	FUEL TYPE	: *

STACK DESCRIPTION

Height	: 6.0	m	Gas Velocity	: 2.00	m/s
Diameter	: 0.30	m	Flow Rate*	: 7.60	Ncu.m/min
Temperature	: 37.0	°C	Moisture	: 4.3	%
Excess Oxygen	: 20.6	%			

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
1,3-Butadiene	ppm	ND (<0.01)	5 ^{1/}	US EPA Method 18

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2. This report shall not be reproduced, except in full, without official approval.

3.* At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4.^{1/} Emission standard according to EIA report.

5. Production grade during the measurement period is SBR 17XX

6. ND = non-detectable

ใบรับรองผลการตรวจวัดระดับเสียงทั่วไป

**Noise Monitoring Result : Community Noise
MTR-BSTE (Site 1)**



Location : Boundary -N		Monitor Period : 18-25 May 2024	
SLM Model : Cirrus CR162R		Serial No : G301014	
Site Operator : Mr. Siwanon Kulawong			
Calibrator Model : Cirrus CR-515		Serial No : 97097	
Calibration Ref dB(A) : 94.0		Certified Date : 04 Sep 2023	
SLM Reading / Adjust dB(A) : 93.7/0.0		Expire Date : 03 Sep 2024	
Cal Sheet No.: CR-515-2024-156			
Time		Equivalent Sound Pressure Level (dB(A))	
18-19 May 2024		20-21 May 2024	
08:00 - 09:00	64.6	65.4	64.3
09:00 - 10:00	64.1	64.8	64.1
10:00 - 11:00	63.6	64.0	64.6
11:00 - 12:00	64.5	63.9	64.3
12:00 - 13:00	63.9	66.1	64.2
13:00 - 14:00	64.3	67.9	65.2
14:00 - 15:00	64.2	68.9	65.3
15:00 - 16:00	64.5	64.4	65.4
16:00 - 17:00	64.4	64.3	65.3
17:00 - 18:00	64.6	64.2	65.1
18:00 - 19:00	64.4	64.3	64.9
19:00 - 20:00	65.3	64.5	64.6
20:00 - 21:00	64.5	64.7	64.3
21:00 - 22:00	64.4	64.6	64.3
22:00 - 23:00	64.4	64.5	64.2
23:00 - 00:00	64.5	64.6	64.4
00:00 - 01:00	64.7	64.7	64.6
01:00 - 02:00	64.8	64.7	64.6
02:00 - 03:00	65.0	64.5	64.5
03:00 - 04:00	64.9	64.5	64.7
04:00 - 05:00	64.8	64.4	64.7
05:00 - 06:00	64.6	64.5	64.8
06:00 - 07:00	64.6	64.5	65.1
07:00 - 08:00	64.7	64.6	67.5
Leq(24) *	64.5	65.1	64.9
L _{dn}	71.1	71.1	71.9
L _{max} **	83.6	80.4	84.8
Standard-24Hr	70 dB(A)		
Standard-Max	115 dB(A)		

Remark : * Average time between 08:00-08:00

.. Maximum Sound Pressure Level between 06:00-08:00

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(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Feedings:

(Miss Preeda Somjai)
Technical Management Team

Noise Monitoring Result : Background Noise
MTR-BSTE (Site 1)



Location : Boundary-N		Monitor Period : 18-25 May 2024					
SLM Model : Cirrus CR162B		Serial No : G301014					
Site Operator : Mr. Siwanon Kulawong							
Calibrator Model : Cirrus CR-515		Serial No : 97097					
Calibration Ref dB(A) : 94.0		Certified Date : 04 Sep 2023					
SLM Reading / Adjust dB(A) : 93.7/0.0		Expire Date : 03 Sep 2024					
Cal Sheet No.: CR-515-2024-156							
		L90 (dB(A))					
Time	18-19 May 2024	19-20 May 2024	20-21 May 2024	21-22 May 2024	22-23 May 2024	23-24 May 2024	24-25 May 2024
08:00 - 09:00	63.4	63.9	63.7	65.6	64.4	65.3	65.6
09:00 - 10:00	63.6	63.9	63.6	64.6	64.2	64.7	65.2
10:00 - 11:00	63.2	63.6	63.6	64.6	64.4	64.2	64.8
11:00 - 12:00	63.4	63.4	63.7	64.1	64.4	63.6	64.2
12:00 - 13:00	63.4	63.5	63.4	63.5	64.5	63.7	64.1
13:00 - 14:00	63.6	64.2	64.2	63.5	64.2	63.6	62.4
14:00 - 15:00	63.7	66.7	64.6	63.6	64.1	64.0	63.4
15:00 - 16:00	64.0	63.8	64.8	63.7	64.0	64.4	63.5
16:00 - 17:00	64.1	63.8	64.5	63.8	63.9	64.0	63.5
17:00 - 18:00	64.1	63.8	64.1	63.8	64.0	64.2	63.8
18:00 - 19:00	64.1	63.8	64.2	63.9	64.1	64.1	63.9
19:00 - 20:00	63.9	64.1	64.2	64.0	64.1	64.1	64.1
20:00 - 21:00	64.1	64.2	64.3	64.1	64.1	64.1	64.1
21:00 - 22:00	64.0	64.2	63.9	64.6	64.1	64.2	64.3
22:00 - 23:00	64.0	64.2	63.8	65.2	64.4	64.3	64.3
23:00 - 00:00	64.2	64.3	63.8	65.1	64.5	64.7	64.4
00:00 - 01:00	64.4	64.4	64.2	65.2	64.5	64.9	64.3
01:00 - 02:00	64.4	64.4	64.2	65.0	64.2	64.8	64.2
02:00 - 03:00	64.7	64.2	64.2	64.9	64.4	64.7	64.3
03:00 - 04:00	64.7	64.2	64.4	65.5	64.7	64.7	64.2
04:00 - 05:00	64.5	64.1	64.2	65.2	64.8	65.0	64.4
05:00 - 06:00	64.2	64.2	64.3	65.1	65.3	64.7	64.3
06:00 - 07:00	64.2	64.2	64.4	65.1	65.3	64.8	64.5
07:00 - 08:00	64.1	64.2	65.7	64.7	65.3	64.9	64.8
L90(avg)*	64.0	64.4	64.2	64.6	64.4	64.4	64.3

Remark : * Average time between 08:00-08:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Freda S.

(Miss Preeda Sonjai)
Technical Management Team

Noise Monitoring Result : Community Noise
MTR-BSTE (Site 1)



Location : Boundary-S	Monitor Period : 18-25 May 2024
SLM Model : Cirrus CR162C	Serial No : G300841
Site Operator : Mr. Sivanon Kulawong	
Calibrator Model : Cirrus CR515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-156	

Time	Equivalent Sound Pressure Level (dB(A))											
	18-19 May 2024	19-20 May 2024	20-21 May 2024	21-22 May 2024	22-23 May 2024	23-24 May 2024	24-25 May 2024	25 May 2024				
08:00 - 09:00	74.6	71.5	72.2	70.6	53.8	73.6	72.8					
09:00 - 10:00	72.4	71.5	72.2	69.7	53.1	69.7	69.2					
10:00 - 11:00	70.7	71.3	71.8	69.9	43.5	82.3	69.1					
11:00 - 12:00	74.0	71.3	71.3	69.8	37.8	79.4	69.4					
12:00 - 13:00	74.7	71.3	71.5	70.3	86.0	75.3	70.3					
13:00 - 14:00	73.9	71.2	71.5	70.3	81.2	75.1	70.5					
14:00 - 15:00	73.0	71.6	71.9	70.7	72.3	71.3	70.6					
15:00 - 16:00	72.0	72.0	71.7	70.4	76.7	69.7	70.8					
16:00 - 17:00	71.2	71.2	71.6	70.6	58.8	70.1	70.8					
17:00 - 18:00	71.4	71.4	71.5	70.8	56.0	70.4	70.6					
18:00 - 19:00	71.6	71.6	71.6	70.5	79.6	70.9	70.7					
19:00 - 20:00	71.5	71.5	71.8	70.5	83.4	70.5	70.8					
20:00 - 21:00	69.9	71.4	71.5	70.7	77.0	74.4	70.7					
21:00 - 22:00	69.9	71.3	71.7	74.8	70.5	70.6	70.8					
22:00 - 23:00	69.7	71.3	71.6	69.9	77.8	69.9	70.9					
23:00 - 00:00	69.9	71.3	71.3	69.9	75.7	70.0	71.0					
00:00 - 01:00	70.3	71.2	71.3	69.7	77.5	70.4	70.9					
01:00 - 02:00	70.2	71.5	71.3	69.9	70.6	70.4	71.0					
02:00 - 03:00	65.8	71.5	71.4	70.3	72.1	70.4	71.0					
03:00 - 04:00	70.3	71.6	71.3	70.2	70.5	70.4	71.0					
04:00 - 05:00	71.0	71.7	71.5	65.8	76.8	70.6	70.9					
05:00 - 06:00	72.8	71.5	71.7	39.4	77.1	70.4	71.5					
06:00 - 07:00	69.2	71.5	72.1	35.3	69.7	70.3	71.3					
07:00 - 08:00	69.1	71.5	73.3	40.5	72.4	71.0	71.3					
L _{eq} (24) *	71.7	71.5	71.7	69.9	77.3	73.8	70.8					
L _{dn}	77.0	77.9	78.0	75.3	82.2	77.8	77.4					
L _{max} **	105.8	99.3	94.6	104.9	108.2	108.2	105.8					
Standard-24hr	70 dB(A)											
Standard-Max	115 dB(A)											

Remark : * Average time between 08:00-08:00

** Maximum Sound Pressure Level between 06:00-06:00

(Miss Katesarin Vorradevitwitya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

Noise Monitoring Result : Background Noise
MTR-BSTE (Site 1)



Location : Boundary-S	Monitor Period : 18-25 May 2024
SLM Model : Cirrus CR162C	Serial No : G300841
Site Operator : Mr. Sivanon Kulawong	
Calibrator Model : Cirrus CR515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-156	

Time	L90 (dB(A))											
	18-19 May 2024	19-20 May 2024	20-21 May 2024	21-22 May 2024	22-23 May 2024	23-24 May 2024	24-25 May 2024	25 May 2024				
08:00 - 09:00	70.3	71.1	70.8	69.7	35.1	69.1	69.1					
09:00 - 10:00	70.3	71.0	70.8	69.3	35.2	69.3	68.7					
10:00 - 11:00	70.1	70.9	70.9	69.6	35.2	69.0	68.7					
11:00 - 12:00	70.2	70.8	70.8	69.4	35.2	69.6	69.0					
12:00 - 13:00	70.4	70.7	71.0	69.8	35.2	70.1	69.8					
13:00 - 14:00	70.3	70.7	71.1	69.9	35.3	70.0	70.0					
14:00 - 15:00	70.6	70.8	71.3	70.1	35.3	69.9	70.2					
15:00 - 16:00	70.8	70.8	71.3	70.2	35.5	69.0	70.2					
16:00 - 17:00	70.8	70.8	71.2	70.2	35.4	69.4	70.2					
17:00 - 18:00	71.0	71.0	71.2	70.4	35.5	69.7	70.1					
18:00 - 19:00	71.2	71.2	71.2	70.0	35.5	69.9	70.5					
19:00 - 20:00	71.1	71.1	71.3	70.3	35.4	69.9	70.4					
20:00 - 21:00	69.5	70.9	71.1	69.8	35.4	70.0	70.4					
21:00 - 22:00	69.5	70.8	71.2	69.6	35.4	69.6	70.4					
22:00 - 23:00	69.5	71.0	71.1	69.5	35.5	69.4	70.5					
23:00 - 00:00	69.5	70.9	70.7	69.5	70.5	69.4	70.5					
00:00 - 01:00	70.0	70.9	70.9	69.5	70.2	69.9	70.3					
01:00 - 02:00	69.6	71.2	70.9	69.5	35.3	70.0	70.6					
02:00 - 03:00	35.1	71.2	71.1	70.0	70.8	69.9	70.7					
03:00 - 04:00	69.9	71.2	70.9	69.6	69.3	70.0	70.7					
04:00 - 05:00	69.6	71.3	70.9	35.1	69.6	69.9	70.6					
05:00 - 06:00	69.1	71.2	71.3	35.1	69.5	70.0	71.2					
06:00 - 07:00	68.7	71.2	71.0	35.1	69.3	69.9	70.8					
07:00 - 08:00	68.7	71.0	70.8	35.1	69.2	69.6	70.9					
L90(avg) *	69.9	71.0	71.0	69.0	65.0	69.7	70.2					

Remark : * Average time between 08:00-08:00

(Miss Katesarin Vorradevitwitya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Community Noise
MTR-BSTE (Site 1)

Location : Boundary-W	Monitor Period : 18-25 May 2024
SLM Model : Cirrus CR162B	Serial No : G302737
Site Operator : Mr. Sivanon Kulawong	
Calibrator Model : Cirrus CR515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-156	

Time	Equivalent Sound Pressure Level (dB(A))															
	18-19 May 2024	19-20 May 2024	20-21 May 2024	21-22 May 2024	22-23 May 2024	23-24 May 2024	24-25 May 2024	25 May 2024								
10:00 - 11:00	62.9	61.1	66.2	65.8	64.1	63.6	64.6		62.6	58.9	52.9	53.1	53.1	53.1	53.1	53.1
11:00 - 12:00	66.0	60.7	63.6	64.7	64.4	64.9	64.9		54.3	53.2	53.2	55.2	55.2	55.2	55.2	55.2
12:00 - 13:00	65.1	60.9	61.9	64.0	62.0	58.5	63.9		53.4	54.1	53.8	53.0	53.0	53.0	53.0	53.0
13:00 - 14:00	63.5	61.9	65.1	64.3	65.8	63.3	63.0		59.1	54.6	59.1	54.9	54.9	54.9	54.9	54.9
14:00 - 15:00	64.9	62.0	65.2	65.0	63.9	64.4	66.3		57.7	54.6	59.0	57.7	57.7	57.7	57.7	57.7
15:00 - 16:00	66.8	65.5	66.4	65.8	67.7	66.8	70.7		59.0	58.0	59.0	59.0	59.0	59.0	59.0	59.0
16:00 - 17:00	63.0	64.8	66.7	65.6	65.1	59.2	66.8		59.1	59.9	59.1	60.5	60.5	60.5	60.5	60.5
17:00 - 18:00	63.4	61.7	64.6	67.4	66.0	65.0	65.8		54.9	53.2	54.9	60.8	60.8	60.8	60.8	60.8
18:00 - 19:00	62.4	62.5	63.3	64.9	63.1	65.1	64.8		54.2	53.9	54.2	56.7	56.7	56.7	56.7	56.7
19:00 - 20:00	57.2	61.6	66.6	64.0	62.6	66.7	67.1		55.3	55.1	55.3	56.2	56.2	56.2	56.2	56.2
20:00 - 21:00	57.3	59.2	61.8	71.5	64.5	64.7	65.3		54.4	54.4	55.8	59.6	59.6	59.6	59.6	59.6
21:00 - 22:00	56.5	59.3	61.0	74.8	61.7	60.6	61.3		54.3	54.3	54.3	57.7	57.7	57.7	57.7	57.7
22:00 - 23:00	57.9	58.2	67.4	59.8	60.7	58.8	60.2		55.0	53.8	54.6	57.5	57.5	57.5	57.5	57.5
23:00 - 00:00	58.6	60.6	60.8	62.3	64.7	60.4	58.8		54.1	54.1	54.8	58.2	58.2	58.2	58.2	58.2
00:00 - 01:00	58.9	58.5	59.2	61.8	60.3	59.2	58.1		56.6	54.7	56.6	56.6	56.6	56.6	56.6	56.6
01:00 - 02:00	58.8	59.4	60.9	59.0	65.7	58.3	58.5		54.4	54.8	56.2	58.3	58.3	58.3	58.3	58.3
02:00 - 03:00	56.3	59.4	60.0	58.5	64.3	62.6	56.4		54.9	53.8	54.6	58.0	58.0	58.0	58.0	58.0
03:00 - 04:00	59.3	57.1	60.4	58.5	68.4	60.2	57.3		54.1	54.1	54.8	67.2	67.2	67.2	67.2	67.2
04:00 - 05:00	66.1	60.6	60.6	61.6	61.8	57.9	56.2		53.8	54.2	53.6	56.7	56.7	56.7	56.7	56.7
05:00 - 06:00	65.5	63.3	60.9	60.0	58.2	65.4	59.6		53.3	53.8	53.3	56.0	56.0	56.0	56.0	56.0
06:00 - 07:00	62.5	67.6	67.4	61.8	64.6	64.2	60.8		56.0	56.0	54.9	56.4	56.4	56.4	56.4	56.4
07:00 - 08:00	61.6	65.4	73.5	65.5	66.3	66.8	56.8		55.1	56.0	56.0	56.9	56.9	56.9	56.9	56.9
08:00 - 09:00	59.2	64.6	66.5	64.1	65.5	66.9	65.6		54.4	58.3	58.3	58.5	58.5	58.5	58.5	58.5
09:00 - 10:00	62.5	65.1	66.9	65.9	63.5	65.1	64.8		57.8	58.4	54.9	59.3	59.3	59.3	59.3	59.3
Leq(24) *	62.7	62.6	65.4	66.1	64.6	64.7	64.3									
Ldn	66.4	66.4	70.2	68.1	70.7	65.9	67.2									
Lmax **	90.2	91.5	95.1	108.7	91.2	95.2	97.0									
Standard-24Hr	70 dB(A)															
Standard-Max	115 dB(A)															

Remark : * Average time between 10:00-10:00

** Maximum Sound Pressure Level between 10:00 - 10:00

(Miss Katesarin Vorradevitayaya)
Environmental Scientist

(Miss Katesarin Vorradevitayaya)
Technical Management Team

(Miss Preeda Sunjai)
Technical Management Team



Noise Monitoring Result : Background Noise
MTR-BSTE (Site 1)

Location : Boundary-W	Monitor Period : 18-25 May 2024
SLM Model : Cirrus CR162B	Serial No : G302737
Site Operator : Mr. Sivanon Kulawong	
Calibrator Model : Cirrus CR515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-156	

Time	L90 (dB(A))															
	18-19 May 2024	19-20 May 2024	20-21 May 2024	21-22 May 2024	22-23 May 2024	23-24 May 2024	24-25 May 2024	25 May 2024								
10:00 - 11:00	53.1	52.9	58.9	52.6	58.9	54.3	55.7		52.6	58.9	52.6	58.9	54.3	55.7	55.7	55.7
11:00 - 12:00	55.2	53.2	53.4	54.3	53.4	55.6	53.7		54.3	58.0	54.3	58.0	55.6	53.7	53.7	53.7
12:00 - 13:00	60.7	54.1	53.8	53.0	53.8	54.5	54.8		53.0	57.9	53.0	57.9	54.5	54.8	54.8	54.8
13:00 - 14:00	58.1	54.6	59.1	54.9	59.1	54.5	54.2		59.1	58.9	54.9	58.9	54.5	54.2	54.2	54.2
14:00 - 15:00	57.7	54.6	59.0	57.7	59.0	56.3	57.9		57.7	60.8	57.7	60.8	56.3	57.9	57.9	57.9
15:00 - 16:00	56.8	58.0	59.0	59.0	59.0	61.3	61.0		59.0	61.3	59.0	61.3	55.6	61.0	61.0	61.0
16:00 - 17:00	52.6	53.9	59.1	60.5	59.1	56.8	59.7		60.5	60.2	60.5	60.2	56.8	59.7	59.7	59.7
17:00 - 18:00	52.8	53.2	54.9	60.8	54.9	54.3	59.7		54.9	58.4	60.8	58.4	54.3	59.7	59.7	59.7
18:00 - 19:00	53.3	53.9	54.2	56.7	54.2	53.9	57.6		54.2	57.9	54.2	57.9	53.9	57.6	57.6	57.6
19:00 - 20:00	53.3	55.1	55.3	56.2	55.3	54.4	56.7		55.3	58.0	56.2	58.0	54.4	56.7	56.7	56.7
20:00 - 21:00	53.7	54.4	55.8	59.6	54.4	57.0	54.9		54.4	58.2	59.6	58.2	57.0	54.9	54.9	54.9
21:00 - 22:00	54.3	54.3	54.3	58.3	54.3	55.7	53.4		54.3	57.7	55.7	57.7	55.7	53.4	53.4	53.4
22:00 - 23:00	55.0	53.8	54.6	57.5	54.6	58.4	53.2		54.6	57.5	54.6	58.4	58.4	53.2	53.2	53.2
23:00 - 00:00	55.5	54.1	54.8	58.2	54.8	56.2	53.2		54.1	57.5	54.8	56.2	56.2	53.2	53.2	53.2
00:00 - 01:00	55.9	54.7	56.6	58.6	54.7	55.8	53.2		56.6	57.3	56.6	57.3	55.8	53.2	53.2	53.2
01:00 - 02:00	54.8	54.4	56.2	58.3	54.4	55.1	53.1		54.4	58.9	56.2	58.9	55.1	53.1	53.1	53.1
02:00 - 03:00	54.9	53.8	54.6	58.0	54.6	55.7	53.1		54.9	58.6	54.6	58.6	55.7	53.1	53.1	53.1
03:00 - 04:00	56.1	54.1	54.8	67.2	54.8	56.0	53.4		54.1	56.7	54.8	56.7	56.0	53.4	53.4	53.4
04:00 - 05:00	56.4	54.2	53.6	56.7	53.6	55.5	53.7		54.2	56.0	53.6	56.7	55.5	53.7	53.7	53.7
05:00 - 06:00	53.8	53.8	53.3	56.0	53.3	54.5	55.6		53.8	55.5	53.3	56.0	54.5	55.6	55.6	55.6
06:00 - 07:00	53.9	56.0	54.9	56.4	54.9	56.9	56.4		56.0	56.6	54.9	56.4	56.9	56.4	56.4	56.4
07:00 - 08:00	55.1	56.0	56.0	56.9	56.0	59.7	59.7		56.0	59.3	56.0	59.3	59.7	59.7	59.7	59.7
08:00 - 09:00	54.4	58.3	58.3	58.5	58.3	56.8	59.7		54.4	56.0	58.3	58.5	56.8	59.7	59.7	59.7
09:00 - 10:00	57.8	58.4	54.9	59.3	54.9	57.4	57.6		57.8	54.9	59.3	57.4	57.4	57.6	57.6	57.6
L90(avg) *	55.8	55.4	57.6	57.6	57.6	58.2	58.7									

Remark : * Average time between 10:00-10:00

Noise Monitoring Result : Community Noise
MTR-BSTE (Site 1)



Location : Wat Takuan Kongkaram	Monitor Period : 18-25 May 2024
SLM Model : Cirrus CR162B	Serial No : G302741
Site Operator : Mr. Siwanon Kulawong	

Calibrator Model : Cirrus CR:515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-156	

Time	Equivalent Sound Pressure Level (dB(A))															
	18-19 May 2024	19-20 May 2024	20-21 May 2024	21-22 May 2024	22-23 May 2024	23-24 May 2024	24-25 May 2024									
10:00 - 11:00	46.7	46.3	57.1	54.6	54.6	43.3	56.1									
11:00 - 12:00	49.1	47.6	66.0	57.1	53.8	44.0	52.8									
12:00 - 13:00	45.1	55.1	64.9	52.5	57.5	45.0	52.2									
13:00 - 14:00	51.1	52.5	52.9	67.4	54.7	56.1	51.1									
14:00 - 15:00	49.0	48.9	48.4	61.7	47.9	54.7	46.4									
15:00 - 16:00	46.6	46.3	48.0	60.3	42.8	66.0	52.9									
16:00 - 17:00	51.8	48.1	45.7	60.6	48.2	64.9	47.0									
17:00 - 18:00	46.3	56.8	53.0	71.2	48.2	52.9	50.3									
18:00 - 19:00	41.0	43.4	53.8	63.5	51.4	48.4	55.2									
19:00 - 20:00	41.7	44.4	48.0	56.9	52.8	48.0	45.9									
20:00 - 21:00	41.8	43.0	46.0	76.0	48.0	45.7	46.0									
21:00 - 22:00	41.5	42.3	46.2	89.8	46.0	53.0	49.8									
22:00 - 23:00	41.7	40.7	47.4	81.8	46.2	56.5	45.9									
23:00 - 00:00	42.7	40.8	51.4	59.3	51.4	56.1	49.4									
00:00 - 01:00	41.9	40.3	54.7	57.9	47.4	54.2	48.5									
01:00 - 02:00	59.4	40.9	54.0	57.4	54.7	52.4	47.1									
02:00 - 03:00	43.1	42.4	54.7	57.5	54.0	54.7	47.4									
03:00 - 04:00	54.0	41.5	47.6	56.4	54.7	55.6	51.4									
04:00 - 05:00	50.8	54.1	56.3	58.0	47.6	66.3	54.7									
05:00 - 06:00	50.4	54.6	49.9	56.5	56.3	63.8	54.0									
06:00 - 07:00	49.0	54.5	56.1	56.1	49.9	56.8	54.7									
07:00 - 08:00	50.0	51.5	52.8	54.7	49.9	54.8	47.8									
08:00 - 09:00	48.5	52.5	52.2	55.0	48.3	66.8	56.3									
09:00 - 10:00	50.4	52.1	54.4	54.4	48.6	59.4	49.9									
Lec(24) *	50.1	50.7	56.7	65.5	52.1	59.9	51.9									
L _{dn}	56.2	56.6	60.9	67.6	58.9	66.4	58.2									
L _{max} **	80.4	84.5	81.4	105.5	81.7	96.3	81.4									
Standard-24hr								70 dB(A)								
Standard-Max								115 dB(A)								

Remark : * Average time between 10:00-10:00

** Maximum Sound Pressure Level between 10:00-10:00

(Miss Katesarin Vorradevitayaya)
Environmental Scientist

(Miss Preeda Sonjai)
Technical Management Team

Noise Monitoring Result : Background Noise
MTR-BSTE (Site 1)



Location : Wat Takuan Kongkaram	Monitor Period : 18-25 May 2024
SLM Model : Cirrus CR162B	Serial No : G302741
Site Operator : Mr. Siwanon Kulawong	

Calibrator Model : Cirrus CR:515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-156	

Time	L90 (dB(A))															
	18-19 May 2024	19-20 May 2024	20-21 May 2024	21-22 May 2024	22-23 May 2024	23-24 May 2024	24-25 May 2024									
10:00 - 11:00	42.1	41.3	53.6	52.2	52.2	38.3	49.0									
11:00 - 12:00	41.7	41.9	49.2	53.6	51.1	38.4	44.8									
12:00 - 13:00	40.7	42.6	49.7	57.2	53.3	38.3	44.9									
13:00 - 14:00	42.4	41.3	46.7	56.3	37.6	49.0	43.8									
14:00 - 15:00	41.2	42.2	41.1	58.2	37.5	46.2	39.3									
15:00 - 16:00	39.2	42.5	41.2	58.0	36.9	49.2	44.8									
16:00 - 17:00	38.0	41.9	40.1	57.5	38.7	49.7	41.7									
17:00 - 18:00	37.8	39.8	41.0	59.2	38.4	46.7	42.9									
18:00 - 19:00	38.9	40.4	38.7	57.6	39.1	41.1	44.4									
19:00 - 20:00	39.7	41.3	41.0	58.0	38.7	41.2	39.9									
20:00 - 21:00	40.3	40.6	41.6	61.4	41.0	40.1	39.2									
21:00 - 22:00	39.5	40.3	42.2	58.1	41.6	41.0	40.2									
22:00 - 23:00	39.2	38.4	44.8	64.7	42.3	46.5	44.6									
23:00 - 00:00	40.5	38.4	46.5	57.3	44.8	53.0	46.6									
00:00 - 01:00	39.1	37.6	52.1	55.9	46.8	51.8	45.3									
01:00 - 02:00	41.2	38.5	51.2	55.9	52.1	50.2	44.4									
02:00 - 03:00	37.4	38.6	48.2	56.0	51.2	51.6	44.8									
03:00 - 04:00	37.1	38.9	43.1	56.2	48.2	54.4	46.8									
04:00 - 05:00	42.1	42.5	42.5	57.4	43.1	52.3	52.1									
05:00 - 06:00	42.6	43.4	41.1	54.8	42.5	56.6	51.2									
06:00 - 07:00	42.9	43.0	49.0	54.0	41.1	53.2	48.2									
07:00 - 08:00	43.4	45.7	44.6	52.0	41.1	49.8	43.1									
08:00 - 09:00	44.9	46.5	44.9	48.5	40.2	49.1	42.5									
09:00 - 10:00	43.5	46.8	50.1	50.1	36.4	54.6	41.1									
L90(avg) *	41.1	42.2	47.3	56.7	46.7	50.4	45.8									

Remark : * Average time between 10:00-10:00

(Miss Katesarin Vorradevitayaya)
Environmental Scientist

(Miss Preeda Sonjai)
Technical Management Team



Noise Monitoring Result : Community Noise
MTR-BSTE (Site 1)

Location : Soi Ruam Pattana	Monitor Period : 18-25 May 2024
SLM Model : Cirrus CR162B	Serial No : G302742
Site Operator : Mr. Siwanon Kulawong	
Calibrator Model : Cirrus CR-515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-156	

Time	Equivalent Sound Pressure Level (dB(A))											
	18-19 May 2024	19-20 May 2024	20-21 May 2024	21-22 May 2024	22-23 May 2024	23-24 May 2024	24-25 May 2024	25 May 2024				
13:00 - 14:00	64.4	60.3	59.9	59.4	63.1	56.5	60.1					
14:00 - 15:00	60.6	58.7	58.8	62.2	56.6	62.2	57.8					
15:00 - 16:00	61.6	60.1	58.0	58.1	57.3	64.2	59.7					
16:00 - 17:00	60.8	60.4	59.1	58.3	56.6	56.7	56.8					
17:00 - 18:00	61.6	59.5	59.6	58.0	59.1	57.1	58.7					
18:00 - 19:00	60.1	59.1	60.2	58.0	54.1	56.8	57.8					
19:00 - 20:00	59.5	58.2	60.9	57.0	58.2	56.4	57.6					
20:00 - 21:00	59.0	58.1	60.8	57.8	62.8	56.2	57.7					
21:00 - 22:00	58.9	58.6	61.1	61.9	59.0	56.3	55.1					
22:00 - 23:00	58.9	58.5	60.3	55.3	52.4	56.3	55.0					
23:00 - 00:00	58.8	57.2	58.7	57.5	54.1	56.4	56.2					
00:00 - 01:00	59.6	57.4	59.2	55.3	54.2	56.4	56.8					
01:00 - 02:00	59.8	57.8	59.1	56.5	50.2	56.8	56.9					
02:00 - 03:00	58.5	57.5	57.7	55.9	52.2	56.8	53.3					
03:00 - 04:00	57.9	57.6	59.0	57.4	53.5	56.6	56.6					
04:00 - 05:00	59.2	57.6	63.1	56.9	54.5	57.5	57.0					
05:00 - 06:00	59.1	57.9	58.9	59.5	56.7	58.7	56.7					
06:00 - 07:00	58.6	57.4	58.1	73.7	54.3	57.7	56.2					
07:00 - 08:00	56.3	58.0	59.5	68.1	55.4	56.5	54.1					
08:00 - 09:00	59.3	58.3	58.1	60.6	54.7	56.3	57.5					
09:00 - 10:00	57.4	58.7	58.6	60.5	52.7	57.4	57.4					
10:00 - 11:00	57.6	58.5	58.3	58.1	55.2	57.0	58.4					
11:00 - 12:00	57.8	58.8	58.6	57.8	60.1	60.2	56.5					
12:00 - 13:00	59.3	58.7	58.8	60.2	57.9	57.3	56.0					
Leq(24)*	58.8	58.6	59.5	62.8	57.3	56.4	57.3					
Ldn	65.6	64.3	66.0	70.9	61.4	64.2	63.1					
Lmax**	80.0	84.5	88.9	104.6	85.9	86.6	81.9					
Standard-24Hr	70 dB(A)											
Standard-Max	115 dB(A)											

Remark : * Average time between 13:00-13:00

** Maximum Sound Pressure Level between 13:00-13:00

(Miss Katesarin Vorradevitayaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise
MTR-BSTE (Site 1)

Location : Soi Ruam Pattana	Monitor Period : 18-25 May 2024
SLM Model : Cirrus CR162B	Serial No : G302742
Site Operator : Mr. Siwanon Kulawong	
Calibrator Model : Cirrus CR-515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : 04 Sep 2023
SLM Reading / Adjust dB(A) : 93.7/0.0	Expire Date : 03 Sep 2024
Cal Sheet No.: CR-515-2024-156	

Time	L90 (dB(A))											
	18-19 May 2024	19-20 May 2024	20-21 May 2024	21-22 May 2024	22-23 May 2024	23-24 May 2024	24-25 May 2024	25 May 2024				
13:00 - 14:00	60.6	56.5	57.6	57.6	57.6	53.8	54.6	47.0				
14:00 - 15:00	59.0	57.1	57.5	57.5	57.5	52.5	58.4	46.4				
15:00 - 16:00	60.0	57.4	57.1	56.8	54.2	57.5	57.5	46.8				
16:00 - 17:00	59.5	56.3	57.3	56.3	56.2	55.4	55.4	49.3				
17:00 - 18:00	59.8	57.2	57.6	56.7	56.4	55.4	55.4	50.0				
18:00 - 19:00	58.9	56.4	56.5	56.6	52.1	55.0	51.3	51.3				
19:00 - 20:00	58.5	56.4	58.8	58.0	53.3	54.6	46.9	46.9				
20:00 - 21:00	58.1	56.8	59.4	56.4	54.6	54.6	49.1	49.1				
21:00 - 22:00	57.9	56.3	59.1	55.0	53.5	51.6	47.0	47.0				
22:00 - 23:00	58.1	56.2	57.4	52.6	50.8	51.6	48.9	48.9				
23:00 - 00:00	58.1	56.2	57.3	53.1	51.6	54.8	48.5	48.5				
00:00 - 01:00	59.1	56.4	57.3	52.6	50.8	55.3	50.5	50.5				
01:00 - 02:00	59.1	56.4	56.8	52.7	49.3	55.1	45.8	45.8				
02:00 - 03:00	57.9	56.6	56.5	53.3	50.6	55.2	44.9	44.9				
03:00 - 04:00	56.8	56.6	57.2	54.0	51.9	55.0	48.0	48.0				
04:00 - 05:00	57.7	56.6	58.2	54.7	52.4	55.5	46.5	46.5				
05:00 - 06:00	57.8	56.7	56.7	54.7	52.3	57.3	45.1	45.1				
06:00 - 07:00	57.2	56.6	56.8	56.3	51.3	56.5	48.5	48.5				
07:00 - 08:00	56.6	56.8	56.9	60.4	53.0	56.8	46.8	46.8				
08:00 - 09:00	57.0	56.7	55.7	55.7	51.3	56.2	48.6	48.6				
09:00 - 10:00	56.9	57.6	56.6	57.0	50.7	55.4	48.6	48.6				
10:00 - 11:00	58.4	57.3	57.0	55.9	52.9	55.4	48.4	48.4				
11:00 - 12:00	58.4	57.3	56.6	55.3	56.4	56.7	48.7	48.7				
12:00 - 13:00	56.6	57.2	57.6	57.9	54.4	47.3	48.6	48.6				
L90(avg)*	58.3	56.7	57.5	56.1	53.0	55.6	48.2	48.2				

Remark : * Average time between 12:00-13:00

(Miss Katesarin Vorradevitayaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

ใบรับรองผลการตรวจวัดคุณภาพดิน



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนมิตรภาพ แขวงเมือง เขตปทุมธานี กรุงเทพมหานคร 10800
239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND
TEL. (662) 959-3600 FAX (662) 959-3535 Website: secot.co.th E-mail: envserv@secot.co.th

SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : BSI Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 14:22-14:34
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-20/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Anwar Pinwanna
SAMPLE CONDITION : Normal FILE CODE : 224056 SOIL April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MWI	STANDARD ^u
1,3-Budlene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	*
Sylene	mg/kg	SW 846 5035A /8260D	< 0.0025	ND	≤ 1,700

REFERENCE: USE EPA SW 846 TEST METHOD FOR EVALUATING WATER AND SOLID WASTE L 2nd Ed. 2004

Nilnol Jaemnuen
(Miss Juana Jaemnuen)

Analyst

REG. NO. 7-239-8-0022

(Mrs. Anya Tipparak)
Technical Management Team

REG. NO. 7-239-8-0004

Remark : 1. Reported analysis refers to submitted sample only.

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3. ^u Notification of the Ministry of Industry, B.E.2559 (2016).



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SECOT CO., LTD.

239 ถนนมิตรภาพ แขวงเมือง เขตปทุมธานี กรุงเทพมหานคร 10800
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TEL. (662) 959-3600 FAX (662) 959-3535 Website: secot.co.th E-mail: envserv@secot.co.th

SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : BSI Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 11/04/2024 SAMPLING TIME : 11:13-11:24
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-20/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Anwar Pinwanna
SAMPLE CONDITION : Normal FILE CODE : 224056 SOIL April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW2	STANDARD ^u
1,3-Budlene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	*
Sylene	mg/kg	SW 846 5035A /8260D	< 0.0025	ND	≤ 1,700

REFERENCE: USE EPA SW 846 TEST METHOD FOR EVALUATING WATER AND SOLID WASTE L 2nd Ed. 2004

Nilnol Jaemnuen
(Miss Juana Jaemnuen)

Analyst

REG. NO. 7-239-8-0022

(Mrs. Anya Tipparak)
Technical Management Team

REG. NO. 7-239-8-0004

Remark : 1. Reported analysis refers to submitted sample only.

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239 ถนนวิภาวดีรังสิต แขวงบางซื่อ กรุงเทพมหานคร 10800
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TEL. (662) 959-3600 FAX (662) 959-3535 Website: secot.co.th E-mail: envserv@secot.co.th

SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)			REQUEST SERVICE No.:	0731/67
SAMPLING BY	: SECOT Co., Ltd.			SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 11/04/2024			SAMPLING TIME	: 10:37-10:47
RECEIVED DATE	: 12/04/2024			ANALYTICAL DATE	: 19-20/04/2024
REPORT DATE	: 24/04/2024			SITE OPERATOR	: Mr. Anawat Pimwanna
SAMPLE CONDITION	: Normal			FILE CODE	: 22-056_SOIL_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW3	STANDARD ^v
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	
Styrene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 1,700

REFERENCE: USE EPA SW 846/8260/8261/8262/8263/8264/8265/8266/8267/8268/8269/8270/8271/8272/8273/8274/8275/8276/8277/8278/8279/8280/8281/8282/8283/8284/8285/8286/8287/8288/8289/8290/8291/8292/8293/8294/8295/8296/8297/8298/8299/8300/8301/8302/8303/8304/8305/8306/8307/8308/8309/8310/8311/8312/8313/8314/8315/8316/8317/8318/8319/8320/8321/8322/8323/8324/8325/8326/8327/8328/8329/8330/8331/8332/8333/8334/8335/8336/8337/8338/8339/8340/8341/8342/8343/8344/8345/8346/8347/8348/8349/8350/8351/8352/8353/8354/8355/8356/8357/8358/8359/8360/8361/8362/8363/8364/8365/8366/8367/8368/8369/8370/8371/8372/8373/8374/8375/8376/8377/8378/8379/8380/8381/8382/8383/8384/8385/8386/8387/8388/8389/8390/8391/8392/8393/8394/8395/8396/8397/8398/8399/8400/8401/8402/8403/8404/8405/8406/8407/8408/8409/8410/8411/8412/8413/8414/8415/8416/8417/8418/8419/8420/8421/8422/8423/8424/8425/8426/8427/8428/8429/8430/8431/8432/8433/8434/8435/8436/8437/8438/8439/8440/8441/8442/8443/8444/8445/8446/8447/8448/8449/8450/8451/8452/8453/8454/8455/8456/8457/8458/8459/8460/8461/8462/8463/8464/8465/8466/8467/8468/8469/8470/8471/8472/8473/8474/8475/8476/8477/8478/8479/8480/8481/8482/8483/8484/8485/8486/8487/8488/8489/8490/8491/8492/8493/8494/8495/8496/8497/8498/8499/8500/8501/8502/8503/8504/8505/8506/8507/8508/8509/8510/8511/8512/8513/8514/8515/8516/8517/8518/8519/8520/8521/8522/8523/8524/8525/8526/8527/8528/8529/8530/8531/8532/8533/8534/8535/8536/8537/8538/8539/8540/8541/8542/8543/8544/8545/8546/8547/8548/8549/8550/8551/8552/8553/8554/8555/8556/8557/8558/8559/8560/8561/8562/8563/8564/8565/8566/8567/8568/8569/8570/8571/8572/8573/8574/8575/8576/8577/8578/8579/8580/8581/8582/8583/8584/8585/8586/8587/8588/8589/8590/8591/8592/8593/8594/8595/8596/8597/8598/8599/8600/8601/8602/8603/8604/8605/8606/8607/8608/8609/8610/8611/8612/8613/8614/8615/8616/8617/8618/8619/8620/8621/8622/8623/8624/8625/8626/8627/8628/8629/8630/8631/8632/8633/8634/8635/8636/8637/8638/8639/8640/8641/8642/8643/8644/8645/8646/8647/8648/8649/8650/8651/8652/8653/8654/8655/8656/8657/8658/8659/8660/8661/8662/8663/8664/8665/8666/8667/8668/8669/8670/8671/8672/8673/8674/8675/8676/8677/8678/8679/8680/8681/8682/8683/8684/8685/8686/8687/8688/8689/8690/8691/8692/8693/8694/8695/8696/8697/8698/8699/8700/8701/8702/8703/8704/8705/8706/8707/8708/8709/8710/8711/8712/8713/8714/8715/8716/8717/8718/8719/8720/8721/8722/8723/8724/8725/8726/8727/8728/8729/8730/8731/8732/8733/8734/8735/8736/8737/8738/8739/8740/8741/8742/8743/8744/8745/8746/8747/8748/8749/8750/8751/8752/8753/8754/8755/8756/8757/8758/8759/8760/8761/8762/8763/8764/8765/8766/8767/8768/8769/8770/8771/8772/8773/8774/8775/8776/8777/8778/8779/8780/8781/8782/8783/8784/8785/8786/8787/8788/8789/8790/8791/8792/8793/8794/8795/8796/8797/8798/8799/8800/8801/8802/8803/8804/8805/8806/8807/8808/8809/8810/8811/8812/8813/8814/8815/8816/8817/8818/8819/8820/8821/8822/8823/8824/8825/8826/8827/8828/8829/8830/8831/8832/8833/8834/8835/8836/8837/8838/8839/8840/8841/8842/8843/8844/8845/8846/8847/8848/8849/8850/8851/8852/8853/8854/8855/8856/8857/8858/8859/8860/8861/8862/8863/8864/8865/8866/8867/8868/8869/8870/8871/8872/8873/8874/8875/8876/8877/8878/8879/8880/8881/8882/8883/8884/8885/8886/8887/8888/8889/8890/8891/8892/8893/8894/8895/8896/8897/8898/8899/8900/8901/8902/8903/8904/8905/8906/8907/8908/8909/8910/8911/8912/8913/8914/8915/8916/8917/8918/8919/8920/8921/8922/8923/8924/8925/8926/8927/8928/8929/8930/8931/8932/8933/8934/8935/8936/8937/8938/8939/8940/8941/8942/8943/8944/8945/8946/8947/8948/8949/8950/8951/8952/8953/8954/8955/8956/8957/8958/8959/8960/8961/8962/8963/8964/8965/8966/8967/8968/8969/8970/8971/8972/8973/8974/8975/8976/8977/8978/8979/8980/8981/8982/8983/8984/8985/8986/8987/8988/8989/8990/8991/8992/8993/8994/8995/8996/8997/8998/8999/9000/9001/9002/9003/9004/9005/9006/9007/9008/9009/9010/9011/9012/9013/9014/9015/9016/9017/9018/9019/9020/9021/9022/9023/9024/9025/9026/9027/9028/9029/9030/9031/9032/9033/9034/9035/9036/9037/9038/9039/9040/9041/9042/9043/9044/9045/9046/9047/9048/9049/9050/9051/9052/9053/9054/9055/9056/9057/9058/9059/9060/9061/9062/9063/9064/9065/9066/9067/9068/9069/9070/9071/9072/9073/9074/9075/9076/9077/9078/9079/9080/9081/9082/9083/9084/9085/9086/9087/9088/9089/9090/9091/9092/9093/9094/9095/9096/9097/9098/9099/9100/9101/9102/9103/9104/9105/9106/9107/9108/9109/9110/9111/9112/9113/9114/9115/9116/9117/9118/9119/9120/9121/9122/9123/9124/9125/9126/9127/9128/9129/9130/9131/9132/9133/9134/9135/9136/9137/9138/9139/9140/9141/9142/9143/9144/9145/9146/9147/9148/9149/9150/9151/9152/9153/9154/9155/9156/9157/9158/9159/9160/9161/9162/9163/9164/9165/9166/9167/9168/9169/9170/9171/9172/9173/9174/9175/9176/9177/9178/9179/9180/9181/9182/9183/9184/9185/9186/9187/9188/9189/9190/9191/9192/9193/9194/9195/9196/9197/9198/9199/9200/9201/9202/9203/9204/9205/9206/9207/9208/9209/9210/9211/9212/9213/9214/9215/9216/9217/9218/9219/9220/9221/9222/9223/9224/9225/9226/9227/9228/9229/9230/9231/9232/9233/9234/9235/9236/9237/9238/9239/9240/9241/9242/9243/9244/9245/9246/9247/9248/9249/9250/9251/9252/9253/9254/9255/9256/9257/9258/9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TEL. (662) 959-3600 FAX (662) 959-3535 Website: secot.co.th E-mail: envserv@secot.co.th



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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME	: BSI Elastomers Co., Ltd. (BSIE)	REQUEST SERVICE No.:	0731/67
SAMPLE BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 10/04/2024	SAMPLING TIME	: 14:54-15:01
RECEIVED DATE	: 12/04/2024	ANALYTICAL DATE	: 19-20/04/2024
REPORT DATE	: 24/04/2024	SITE OPERATOR	: Mr. Arinai Pinnasana
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_SOIL_April
PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable) STATION MW5 STANDARD ^{1/}
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	<0.001 ND
Styrene	mg/kg	SW 846 5035A /8260D	<0.0025 ND

REFERENCE: USE EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 1st ED. 2024

Arinai Pinnasana
(Miss Arinai Pinnasana)

Analyst

REG. NO. 7-239-0-0022

Arinai Pinnasana
(Mrs. Arinai Pinnasana)

Technical Management Team

REG. NO. 7-239-0-0004

Remark : 1. Reported analysis refers to submitted sample only.
2. This report shall not be reproduced, except in full, without official approval.
3. ^{1/} Notification of the Ministry of Industry, B.E.2559 (2016).

SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME	: BSI Elastomers Co., Ltd. (BSIE)	REQUEST SERVICE No.:	0731/67
SAMPLE BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 10/04/2024	SAMPLING TIME	: 16:29-16:37
RECEIVED DATE	: 12/04/2024	ANALYTICAL DATE	: 19-20/04/2024
REPORT DATE	: 24/04/2024	SITE OPERATOR	: Mr. Arinai Pinnasana
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_SOIL_April
PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable) STATION MW6 STANDARD ^{1/}
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	<0.001 ND
Styrene	mg/kg	SW 846 5035A /8260D	<0.0025 ND

REFERENCE: USE EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 1st ED. 2024

Arinai Pinnasana
(Miss Arinai Pinnasana)

Analyst

REG. NO. 7-239-0-0022

Arinai Pinnasana
(Mrs. Arinai Pinnasana)

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TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 15:57-16:05
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-20/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Anivat Pimwanma
SAMPLE CONDITION : Normal FILE CODE : 224056_SOIL_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW7	STANDARD ^v
1,3-Butadiene	mg/kg	SW 846 5035A 8260D	<0.001	ND	≤ 1.700
Styrene	mg/kg	SW 846 5035A 8260D	<0.0025	ND	

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 1st ED., 2004.

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(Miss Jutana Jaerman)

Analyst

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REG. NO. 7-239-4-0004

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3. ^v Notification of the Ministry of Industry, B.E.2559 (2016).

SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 15:24-15:34
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-20/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Anivat Pimwanma
SAMPLE CONDITION : Normal FILE CODE : 224056_SOIL_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW8	STANDARD ^v
1,3-Butadiene	mg/kg	SW 846 5035A 8260D	<0.001	ND	≤ 1.700
Styrene	mg/kg	SW 846 5035A 8260D	<0.0025	ND	

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 1st ED., 2004.

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GROUND WATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd (BSTE) REQUEST SERVICE No : 0728/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 14:23-14:34
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 12, 17-18/04/2024
REPORT DATE : 19/04/2024 SITE OPERATOR : Mr. Anirudh Pinwanna
SAMPLE CONDITION : Normal FILE CODE : 224056 GW April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW1	STANDARD ¹⁾
1,3-Bandlene	mg/l	SW 846 5030C/8260D	< 0.0005	ND	*
Sylene	mg/l	6200 B	< 0.0002	ND	≤ 24

REFERENCE: STANDARD METHOD FOR EXAMINATION OF WATER AND WASTEWATER²⁾ 1993, APHA, AWWA, WEF
REFERENCE: USES SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE³⁾ 1991, EPA

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3. ¹⁾ Notification of the Ministry of Industry, B.E.2559 (2016).
4. - Not available.

GROUND WATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd (BSTE) REQUEST SERVICE No : 0728/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 11/04/2024 SAMPLING TIME : 11:13-11:24
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 12, 17-18/04/2024
REPORT DATE : 19/04/2024 SITE OPERATOR : Mr. Anirudh Pinwanna
SAMPLE CONDITION : Normal FILE CODE : 224056 GW April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW2	STANDARD ¹⁾
1,3-Bandlene	mg/l	SW 846 5030C/8260D	< 0.0005	ND	*
Sylene	mg/l	6200 B	< 0.0002	ND	≤ 24

REFERENCE: STANDARD METHOD FOR EXAMINATION OF WATER AND WASTEWATER²⁾ 1993, APHA, AWWA, WEF
REFERENCE: USES SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE³⁾ 1991, EPA

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4. - Not available.



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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)			
SAMPLING BY	: SECOT Co., Ltd.			
SAMPLING DATE	: 11/04/2024	SAMPLING METHOD	: Pneumatic Bladder Pump	
RECEIVED DATE	: 12/04/2024	SAMPLING TIME	: 10:17-10:47	
REPORT DATE	: 19/04/2024	ANALYTICAL DATE	: 12, 17-18/04/2024	
SAMPLE CONDITION	: Normal	SITE OPERATOR	: Mr. Aniwat Timwanra	
		FILE CODE	: 2240356 GW April	
PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW3 STANDARD ^v
1,3-Butadiene	mg/l	SW 846 3030C/8260D	< 0.0005	ND
Styrene	mg/l	6200 B	< 0.0002	ND

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 21st ED. 2012, A.P.H.A. 8223
REFERENCE: USE EPA SW 846 TEST METHODS FOR EXAMINATING WATER AND SOLID WASTE, 1st ED. 2021

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4. - Not available.



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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)			
SAMPLING BY	: SECOT Co., Ltd.			
SAMPLING DATE	: 10/04/2024	SAMPLING METHOD	: Pneumatic Bladder Pump	
RECEIVED DATE	: 12/04/2024	SAMPLING TIME	: 17:02-17:11	
REPORT DATE	: 19/04/2024	ANALYTICAL DATE	: 12, 17-18/04/2024	
SAMPLE CONDITION	: Normal	SITE OPERATOR	: Mr. Aniwat Timwanra	
		FILE CODE	: 2240356 GW April	
PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW4 STANDARD ^v
1,3-Butadiene	mg/l	SW 846 3030C/8260D	< 0.0005	ND
Styrene	mg/l	6200 B	< 0.0002	ND

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 21st ED. 2012, A.P.H.A. 8223
REFERENCE: USE EPA SW 846 TEST METHODS FOR EXAMINATING WATER AND SOLID WASTE, 1st ED. 2021

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GROUND WATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE)
REQUEST SERVICE No : 072867
SAMPLING BY : SECOT Co., Ltd.
SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024
SAMPLING TIME : 14:54-15:01
RECEIVED DATE : 12/04/2024
ANALYTICAL DATE : 12-17-18/04/2024
REPORT DATE : 19/04/2024
SITE OPERATOR : Mr. Anuwat Pinwanna
SAMPLE CONDITION : Normal
FILE CODE : 224056_GW_April

PARAMETER	UNIT	ANALYSIS METHODS	STATION		STANDARD ^{iv}
			ND (non-detectable)	MVS	
1,3-Butadiene	mg/l	SW 846 5030C/8260D	< 0.0005	ND	*
Styrene	mg/l	6200 B	< 0.0002	ND	≤ 24

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 21ST ED., APHA/AWWA/WEF
BIBLIOGRAPHY: USEPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 1ST ED., 2003

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3. ^{iv} Notification of the Ministry of Industry, B.E.2559 (2016).

4. - Not available.

GROUND WATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE)
REQUEST SERVICE No : 072867
SAMPLING BY : SECOT Co., Ltd.
SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024
SAMPLING TIME : 16:29-16:37
RECEIVED DATE : 12/04/2024
ANALYTICAL DATE : 12-17-18/04/2024
REPORT DATE : 19/04/2024
SITE OPERATOR : Mr. Anuwat Pinwanna
SAMPLE CONDITION : Normal
FILE CODE : 224056_GW_April

PARAMETER	UNIT	ANALYSIS METHODS	STATION		STANDARD ^{iv}
			ND (non-detectable)	MVS	
1,3-Butadiene	mg/l	SW 846 5030C/8260D	< 0.0005	ND	*
Styrene	mg/l	6200 B	< 0.0002	ND	≤ 24

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 21ST ED., APHA/AWWA/WEF
BIBLIOGRAPHY: USEPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 1ST ED., 2003

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4. - Not available.



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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)			REQUEST SERVICE No.:	072867
SAMPLING BY	: SECOT Co., Ltd.			SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 10/04/2024			SAMPLING TIME	: 15:57-16:05
RECEIVED DATE	: 12/04/2024			ANALYTICAL DATE	: 12.17-18/04/2024
REPORT DATE	: 19/04/2024			SITE OPERATOR	: Mr. Anawat Pinwanna
SAMPLE CONDITION	: Normal			FILE CODE	: 224056_GW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW7	STANDARD ^v
1,3-Butadiene	mg/l	SW 846 5030C/8260D	< 0.0005	ND	
Styrene	mg/l	6208 B	< 0.0002	ND	≤ 24

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 17th ED., 2017, APHA, ACPH, WEF
REFERENCE: USEPA SW 846 TEST METHODS FOR EVALUATING WATER AND WASTE WATER, 1st ED., 2024.

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4. Not available.



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GROUND WATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)			REQUEST SERVICE No.:	072867
SAMPLING BY	: SECOT Co., Ltd.			SAMPLING METHOD	: Pneumatic Bladder Pump
SAMPLING DATE	: 10/04/2024			SAMPLING TIME	: 15:24-15:34
RECEIVED DATE	: 12/04/2024			ANALYTICAL DATE	: 12.17-18/04/2024
REPORT DATE	: 19/04/2024			SITE OPERATOR	: Mr. Anawat Pinwanna
SAMPLE CONDITION	: Normal			FILE CODE	: 224056_GW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW8	STANDARD ^v
1,3-Butadiene	mg/l	SW 846 5030C/8260D	< 0.0005	ND	
Styrene	mg/l	6208 B	< 0.0002	ND	≤ 24

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 17th ED., 2017, APHA, ACPH, WEF
REFERENCE: USEPA SW 846 TEST METHODS FOR EVALUATING WATER AND WASTE WATER, 1st ED., 2024.

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3. Notification of the Ministry of Industry, B.E.2559 (2016).
4. Not available.

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: DST Enlistment Co., Ltd. (DSTE)	REQUEST SERVICE No.	: 105067
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 28/05/2024	SAMPLING TIME	: 14:36
RECEIVED DATE	: 29/05/2024	ANALYTICAL DATE	: 29/05/2024-04/06/2024
REPORT DATE	: 05/06/2024	SITE OPERATOR	: Mr. Thanabot Chaiyachol
SAMPLE CONDITION	: Normal	FILE CODE	: 224056 CW May
SAMPLE DESCRIPTION	: 1 = จุดระบายน้ำจากนิคมฯ บริเวณท่าเรืออุตสาหกรรมมาบตาพุด (Mongkhut Industrial Terminal : MIT)		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 1	STANDARD
Depth	m	Metering	-	2.4	-
Transparency	m	Secchi Disc	-	1.0	$\Delta \leq 10^{1/2}$
Temperature	°C	2550 B	< 0.5	33.9	$\Delta \leq 2^{\circ}$
pH	-	4500-11 B	< 0.10	8.23	7.0-8.5
Total Dissolved Solids	mg/l	2540 C	< 2.5	30.080	*
Total Suspended Solids	mg/l	2540 D	< 2.5	7.0	< 21.9 ^b
Fat Oil & Grease	mg/l	5520 D	< 1.0	ND	*
Fat Oil & Grease	-	Observation	-	NV	Invisible
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.5	≥ 4.0
BOD ₅	mg/l	5210 B	< 1.0	1.7	*
COD	mg/l	5220 C	< 15.00	95.30	*
Syrene	mg/l	5030 C / 8260 D	< 0.0002	ND	*

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 22nd ED. AP. 2017 (AWWA, 2017)
REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY SW-846, 1st EDITION, 2020.

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Remark : 1. Reported analysis refers to submitted sample only.
2. This report shall not be reproduced, except in full, without official approval.
3. ^b Notification of the National Environment Board B.E.2564 (2021) Class 5.
4. ^c $\Delta \leq 10\%$ means decrease from the natural condition by not more than 10 % which were compared with the minimum value.
The minimum value of transparency in the year 2023 is 1.3 m. (Sampling by S.P.S. Consulting Service on May 2, 2023)
Therefore, the standard of transparency value is 1.17 m.

5. ^b $\Delta \leq 2$ means change from natural condition not more than 2 °C. Temperature at Rayong on May 28, 2024 is 32.2 °C.
6. ^d The results should not be changed by more than the aim of daily average and the standard deviation.
Daily average was calculated from hourly measurement or at least 5 samples taken at equal time interval within one day.
(Standard by S.P.S. Consulting Service on May 2, 2023 is 21.9 mg/l)

7. - Not available.
8. The natural condition was normal during sampling period.

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Plastics Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 105067
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 28/05/2024	SAMPLING TIME	: 13:49
RECEIVED DATE	: 29/05/2024	ANALYTICAL DATE	: 29/05/2024-04/06/2024
REPORT DATE	: 05/06/2024	SITE OPERATOR	: Mr. Thanabot Chaiyachol
SAMPLE CONDITION	: Normal	FILE CODE	: 224056 CW May
SAMPLE DESCRIPTION	: 2 = จุดระบายน้ำจากนิคมฯ บริเวณท่าเรืออุตสาหกรรมมาบตาพุด (Mongkhut Industrial Terminal : MIT)		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 2	STANDARD
Depth	m	Metering	-	14.0	*
Transparency	m	Secchi Disc	-	4.5	$\Delta \leq 10^{1/2}$
Temperature	°C	2550 B	< 0.5	33.4	$\Delta \leq 2^{\circ}$
pH	-	4500-11 B	< 0.10	8.03	7.0-8.5
Total Dissolved Solids	mg/l	2540 C	< 2.5	31.240	*
Total Suspended Solids	mg/l	2540 D	< 2.5	2.5	< 20.3 ^b
Fat Oil & Grease	mg/l	5520 B	< 1.0	ND	*
Fat Oil & Grease	-	Observation	-	NV	Invisible
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.0	≥ 4.0
BOD ₅	mg/l	5210 B	< 1.0	1.2	*
COD	mg/l	5220 C	< 15.00	130	*
Syrene	mg/l	5030 C / 8260 D	< 0.0002	ND	*

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 22nd ED. AP. 2017 (AWWA, 2017)
REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY SW-846, 1st EDITION, 2020.

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3. ^b Notification of the National Environment Board B.E.2564 (2021) Class 5.
4. ^c $\Delta \leq 10\%$ means decrease from the natural condition by not more than 10 % which were compared with the minimum value.
The minimum value of transparency in the year 2023 is 3.2 m. (Sampling by S.P.S. Consulting Service on May 2, 2023)
Therefore, the standard of transparency value is 2.88 m.

5. ^b $\Delta \leq 2$ means change from natural condition not more than 2 °C. Temperature at Rayong on May 28, 2024 is 32.2 °C.
6. ^d The results should not be changed by more than the sum of daily average and the standard deviation.
Daily average was calculated from hourly measurement or at least 5 samples taken at equal time interval within one day.
(Standard by S.P.S. Consulting Service on May 2, 2023 is 20.3 mg/l)

7. - Not available.
8. The natural condition was normal during sampling period.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 105067
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 28/05/2024	SAMPLING TIME	: 14:07
RECEIVED DATE	: 29/05/2024	ANALYTICAL DATE	: 29/05/2024-04/06/2024
REPORT DATE	: 05/06/2024	SITE OPERATOR	: Mr. Tanachol Changlor
SAMPLE CONDITION	: Normal	FILE CODE	: 224056 CW May
SAMPLE DESCRIPTION	: 3 - ร่องน้ำของท่อเข้าสู่นิคมฯ		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD
Depth	m	Measuring	-	14.0	-
Transparency	m	Secchi Disc	-	4.0	$\Delta \leq 10 \%$
Temperature	°C	2550 B	< 0.5	33.3	$\Delta \leq 2^\circ$
pH	-	4500-H ⁺ B	< 0.10	8.16	7.0-8.5
Total Dissolved Solids	mg/l	2540 C	< 50	30.400	-
Total Suspended Solids	mg/l	2540 D	< 2.5	7.0	$\leq 16.4^w$
Fat Oil & Grease	mg/l	5520 B	< 0.5	ND	Invisible
Fat Oil & Grease	-	Observation	-	NV	≥ 4.0
Dissolved Oxygen	mg/l	4500-O ₂ G	< 0.1	5.6	-
BOD ₅	mg/l	5210 B	< 1.0	1.4	-
COD	mg/l	5220 C	< 15.00	106	-
Syrene	mg/l	5030 C/ R260 D	< 0.0002	ND	-

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 19. (2012) AMERICAN WATER WORKS ASSOCIATION, 2020.

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 1st EDITION, 2020.

Miss Klanchuda Insum
(Miss Klanchuda Insum)
Analyst

(Mrs. Anya Tipparak)
Technical Management Team

Remark: 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. Notification of the National Environment Board B.E.2564 (2021) Class 5.

4. $\Delta \leq 10 \%$ means decrease from the natural condition by not more than 10 % which were compared with the minimum value.

The minimum value of transparency in the year 2023 is 3.2 m. (Sampling by S.P.S. Consulting Service on May 2, 2023)

Therefore, the standard of transparency value is 2.88 m.

5. $\Delta \leq 2$ means change from natural condition not more than 2 °C. Temperature at Rayong on May 28, 2024 is 32.2 °C.

6. The results should not be changed by more than the sum of daily average and the standard deviation.

Daily average was calculated from hourly measurement of at least 5 samples taken at equal time interval within one day.

(Standard by S.P.S. Consulting Service on May 2, 2023 is 16.4 mg/l)

7. - Not available.

8. The natural condition was normal during sampling period.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 105067
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 28/05/2024	SAMPLING TIME	: 14:28
RECEIVED DATE	: 29/05/2024	ANALYTICAL DATE	: 29/05/2024-04/06/2024
REPORT DATE	: 05/06/2024	SITE OPERATOR	: Mr. Tanachol Changlor
SAMPLE CONDITION	: Normal	FILE CODE	: 224056 CW May
SAMPLE DESCRIPTION	: 4 - ใต้พื้นที่ถม		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD
Depth	m	Measuring	-	1.8	-
Transparency	m	Secchi Disc	-	1.5	$\Delta \leq 10 \%$
Temperature	°C	2550 B	< 0.5	33.1	$\Delta \leq 2^\circ$
pH	-	4500-H ⁺ B	< 0.10	8.15	7.0-8.5
Total Dissolved Solids	mg/l	2540 C	< 50	32.400	-
Total Suspended Solids	mg/l	2540 D	< 2.5	4.0	$\leq 16.4^w$
Fat Oil & Grease	mg/l	5520 B	< 0.5	ND	Invisible
Fat Oil & Grease	-	Observation	-	NV	≥ 4.0
Dissolved Oxygen	mg/l	4500-O ₂ G	< 0.1	5.9	-
BOD ₅	mg/l	5210 B	< 1.0	1.5	-
COD	mg/l	5220 C	< 15.00	138	-
Syrene	mg/l	5030 C/ R260 D	< 0.0002	ND	-

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 19. (2012) AMERICAN WATER WORKS ASSOCIATION, 2020.

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 1st EDITION, 2020.

Miss Klanchuda Insum
(Miss Klanchuda Insum)
Analyst

(Mrs. Anya Tipparak)
Technical Management Team

Remark: 1. Reported analysis refers to submitted sample only.

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3. Notification of the National Environment Board B.E.2564 (2021) Class 5.

4. $\Delta \leq 10 \%$ means decrease from the natural condition by not more than 10 % which were compared with the minimum value.

The minimum value of transparency in the year 2023 is 2.0 m. (Sampling by S.P.S. Consulting Service on May 2, 2023)

Therefore, the standard of transparency value is 1.8 m.

5. $\Delta \leq 2$ means change from natural condition not more than 2 °C. Temperature at Rayong on May 28, 2024 is 32.2 °C.

6. The results should not be changed by more than the sum of daily average and the standard deviation.

Daily average was calculated from hourly measurement of at least 5 samples taken at equal time interval within one day.

(Standard by S.P.S. Consulting Service on May 2, 2023 is 16.3 mg/l)

7. - Not available.

8. The natural condition was normal during sampling period.

ใบรับรองผลการตรวจวัดคุณภาพน้ำทิ้ง



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0160067
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 30/01/2024	SAMPLING TIME	: 14:40
RECEIVED DATE	: 31/01/2024	ANALYTICAL DATE	: 31/01/2024-06/02/2024
REPORT DATE	: 07/02/2024	SITE OPERATOR	: Miss Winaya Patchimboon
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_WW_January

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Sump pit	STANDARD ^{1/}
Flow Rate	m ³ /hr			91.4	
Temperature	°C	2550 B	< 0.5	33.3	≤ 40
pH		4500-H B	< 0.10	7.55	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 2.5	1.964	≤ 40,620
Total Suspended Solids	mg/l	2540 D	< 2.5	12.0	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 1.0	ND	≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.5	≤ 1
BOD ₅	mg/l	5210 B	< 1.0	2.2	≤ 20
COD	mg/l	5220 C	< 15.00	62.90	≤ 120
Silyene	mg/l	5030 C / 8260 D	< 0.0002	ND	

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 17th ED. 2012 (AWWA, APHA, WEF)
REFERENCE: UNIFIED STATES ENVIRONMENTAL PROTECTION AGENCY SW-846, 4th EDITION, 1986

(Miss Khemchuda Insom)
Analyst

REG. NO. 7-239-P-0005

(Mrs. Araya Tipparak)
Technical Management Team

REG. NO. 7-239-P-0004

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. " Notification of the Ministry of Industry, B.E.2560 (2017).
exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on January 30, 2024
found to be 35,620 mg/l) therefore the Standard of TDS found to be 40,620 mg/l).
4. - Not available.

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0160067
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 30/01/2024	SAMPLING TIME	: 14:40
RECEIVED DATE	: 31/01/2024	ANALYTICAL DATE	: 31/01/2024
REPORT DATE	: 07/02/2024	SITE OPERATOR	: Miss Winaya Patchimboon
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_WW_January

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Effluent Sump pit	STANDARD ^{1/}
Color (Original pH)	ADMT	2120 F	< 5.0	33.6	≤ 300
Color (pH 7.0)	ADMT	2120 F	< 5.0	30.3	≤ 300

(Miss Khemchuda Insom)
Analyst

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Technical Management Team

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3. " Notification of the Ministry of Industry, B.E.2560 (2017).



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 016067
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 30/01/2024	SAMPLING TIME	: 14:30
RECEIVED DATE	: 31/01/2024	ANALYTICAL DATE	: 31/01/2024-06/02/2024
REPORT DATE	: 07/02/2024	SITE OPERATOR	: Miss Winaya Patchinboon
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_WW_January

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Intermediate Tank II before Final Check Basin	STANDARD ^{1/}
Temperature	°C	2550 B	< 0.5	32.5	≤ 40
pH	-	4500-H B	< 0.10	7.61	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	2.256	≤ 40,620
Total Suspended Solids	mg/l	2540 D	< 2.5	6.2	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 1.0	ND	≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.3	≤ 5
BOD ₅	mg/l	5210 B	< 1.0	1.6	< 20
COD	mg/l	5220 C	< 15.00	48.10	< 120
Styrene	mg/l	5030 C / 8260 D	< 0.0002	ND	≤ 5

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23rd ED. 2012 (AWWA, APHA, WEF)

REFERENCE: LIMITED STATES ENVIRONMENTAL PROTECTION AGENCY SW 846.3rd EDITION, 2020

Khanchuda Insom
(Miss Khanchuda Insom)

Analyst
REG. NO. 7-239-P-0005

(Mrs. Araya Tippanik)
Technical Management Team
REG. NO. 7-239-P-0004

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} Notification of the Ministry of Industry, B.E.2560 (2017),
exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on January 30, 2024
found to be 35,620 mg/l therefore the Standard of TDS found to be 40,620 mg/l).

4. - Not available.

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 021167
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 06/02/2024	SAMPLING TIME	: 15:00
RECEIVED DATE	: 07/02/2024	ANALYTICAL DATE	: 07-14/02/2024
REPORT DATE	: 14/02/2024	SITE OPERATOR	: Mr. Watcharin Panakhaite
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_WW_February

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Sump pit	STANDARD ^{1/}
Flow Rate	m ³ / hr	-	-	93.37	≤ 40
Temperature	°C	2550 B	< 0.5	35.1	5.5 - 9.0
pH	-	4500-H B	< 0.10	7.52	≤ 30,820
Total Dissolved Solids	mg/l	2540 C	< 25	2.280	≤ 50
Total Suspended Solids	mg/l	2540 D	< 2.5	14.2	≤ 5
Fat Oil & Grease	mg/l	5520 B	< 1.0	ND	≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.2	≤ 20
BOD ₅	mg/l	5210 B	< 1.0	2.1	≤ 120
COD	mg/l	5220 C	< 15.00	44.54	≤ 5
Styrene	mg/l	5030 C / 8260 D	< 0.0002	ND	≤ 120

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23rd ED. 2012 (AWWA, APHA, WEF)

REFERENCE: LIMITED STATES ENVIRONMENTAL PROTECTION AGENCY SW 846.3rd EDITION, 2020

Khanchuda Insom
(Miss Khanchuda Insom)

Analyst
REG. NO. 7-239-P-0005

(Mrs. Araya Tippanik)
Technical Management Team
REG. NO. 7-239-P-0004

Remark : 1. Reported analysis refers to submitted sample only.

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3. ^{1/} Notification of the Ministry of Industry, B.E.2560 (2017),
exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on February 06, 2024
found to be 25,820 mg/l therefore the Standard of TDS found to be 30,820 mg/l).

4. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0221/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 06/02/2024	SAMPLING TIME	: 15:00
RECEIVED DATE	: 07/02/2024	ANALYTICAL DATE	: 07/02/2024
REPORT DATE	: 14/02/2024	SITE OPERATOR	: Mr. Wacharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_WW_February

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Effluent Sump pit	STANDARD ^u
Color (Original pH)	ADMI	2120 F	< 5.0	39.8	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	37.5	≤ 300

(Signature)
(Miss Khemchuda Insom)
Analyst
REG. NO. 3-239-P-0005

(Signature)
(Mrs. Araya Tipparak)
Technical Management Team
REG. NO. 3-239-P-0004

- Remark : 1. Reported analysis refers to submitted sample only.
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3. ^u Notification of the Ministry of Industry, B.E.2560 (2017).



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0221/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 06/02/2024	SAMPLING TIME	: 14:20
RECEIVED DATE	: 07/02/2024	ANALYTICAL DATE	: 07-14/02/2024
REPORT DATE	: 14/02/2024	SITE OPERATOR	: Mr. Wacharakan Pramakhate
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_WW_February

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Intermediate Tank II before Final Check Basin	STANDARD ^u
Temperature	°C	2550 B	< 0.5	36.4	≤ 40
pH		4500-H B	< 0.10	7.27	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	1.660	≤ 30,820
Total Suspended Solids	mg/l	2540 D	< 2.5	12.8	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 1.0	ND	≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.4	< 20
BOD ₅	mg/l	5210 B	< 1.0	1.8	< 120
COD	mg/l	5220 C	< 15.00	37.12	< 120
Syrene	mg/l	5030 C / 8260 D	< 0.0002	ND	

REFERENCE: STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, 19th ED., 2017, AMERICAN WATER WORKS ASSOCIATION
REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-966, 1st EDITION, 2018.

(Signature)
(Miss Khemchuda Insom)
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REG. NO. 3-239-P-0005

(Signature)
(Mrs. Araya Tipparak)
Technical Management Team
REG. NO. 3-239-P-0004

- Remark : 1. Reported analysis refers to submitted sample only.
2. This report shall not be reproduced, except in full, without official approval.
3. ^u Notification of the Ministry of Industry, B.E.2560 (2017).
exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on February 06, 2024 found to be 25,820 mg/l therefore the Standard of TDS found to be 30,820 mg/l).
4. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0582/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 26/03/2024	SAMPLING TIME	: 14:45
RECEIVED DATE	: 27/03/2024	ANALYTICAL DATE	: 27/03/2024-02/04/2024
REPORT DATE	: 03/04/2024	SITE OPERATOR	: Miss Mareeyanee Hawae
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_WW_March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Sump pit	STANDARD ¹⁾
Flow Rate	m ³ /hr			111.82	
Temperature	°C	2550 B	< 0.5	35.9	≤ 40
pH		4500+1 ²⁾ B	< 0.10	7.38	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	2.602	≤ 31,380
Total Suspended Solids	mg/l	2540 D	< 2.5	15.0	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 1.0	ND	≤ 5
Dissolved Oxygen	mg/l	4500+0 G	< 0.1	4.4	
BOD ₅	mg/l	5210 B	< 1.0	3.0	≤ 20
COD	mg/l	5220 C	< 15.00	60.33	≤ 120
Sulfide	mg/l	5030 C / 8260 D	< 0.002	ND	

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 22nd ED. 1917 AND 9100.1000
REFERENCE: UNILAB STATUS ENVIRONMENTAL PROTECTION AGENCY, SW-846, 3rd EDITION, 2006

(Miss Khemchuda Jaisorn)
Analyst
REG. NO. 7-239-0-0005

(Mrs. Anya Tippakorn)
Technical Management Team
REG. NO. 7-239-0-0004

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ¹⁾ Notification of the Ministry of Industry, B.E. 2560 (2017).
exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on March 26, 2024 found to be 26,380 mg/l) therefore the Standard of TDS found to be 31,380 mg/l).

4. - Not available.

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0582/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 26/03/2024	SAMPLING TIME	: 14:45
RECEIVED DATE	: 27/03/2024	ANALYTICAL DATE	: 27/03/2024
REPORT DATE	: 03/04/2024	SITE OPERATOR	: Miss Mareeyanee Hawae
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_WW_March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Effluent Sump pit	STANDARD ¹⁾
Color (Original pH)	ADMI	2120 F	< 5.0	42.6	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	42.1	≤ 300

(Miss Khemchuda Jaisorn)
Analyst
REG. NO. 7-239-0-0005

(Mrs. Anya Tippakorn)
Technical Management Team
REG. NO. 7-239-0-0004

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3. ¹⁾ Notification of the Ministry of Industry, B.E. 2560 (2017).



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0582/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 26/03/2024	SAMPLING TIME	: 14:39
RECEIVED DATE	: 27/03/2024	ANALYTICAL DATE	: 27/03/2024-02/04/2024
REPORT DATE	: 03/04/2024	SITE OPERATOR	: Miss Maceeyance Ilaeae
SAMPLE CONDITION	: Normal	FILE CODE	: 224036_WW_March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION		STANDARD ¹⁾
				Intermediate	Tank II before Final Check Basin	
Temperature	°C	2550 B	<0.5	36.6		≤ 40
pH	-	4500-H ²⁾ B	<0.10	7.52		5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	<2.5	2.970		≤ 31,380
Total Suspended Solids	mg/l	2540 D	<2.5	8.0		≤ 50
Fat Oil & Grease	mg/l	5520 B	<1.0	ND		≤ 5
Dissolved Oxygen	mg/l	4500-O G	<0.1	4.4		-
BOD ₅	mg/l	5210 B	<1.0	2.3		< 20
COD	mg/l	5220 C	<15.00	72.43		< 120
Syrene	mg/l	5030 C / 8260 D	< 0.0002	ND		-

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 22nd ED. 2012 (AWWA/APHA/WEF)
REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY SW-846.1³⁾ (EDITION 2007)

Khun Nitya Jaisri
(Miss Khunchuda Insom)
Analyst

REG. NO. 3-239-n-0005

(Mrs. Anya Tipparak)
Technical Management Team
REG. NO. 3-239-n-0004

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found to be 26,380 mg/l therefore the Standard of TDS found to be 31,380 mg/l).

4. - Not available.

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0637/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 02/04/2024	SAMPLING TIME	: 14:00
RECEIVED DATE	: 03/04/2024	ANALYTICAL DATE	: 03-11/04/2024
REPORT DATE	: 17/04/2024	SITE OPERATOR	: Miss Thipsuda Wannakran
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_WW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION		STANDARD ¹⁾
				Sump pit		
Flow Rate	m ³ /hr	-	-	93.46		-
Temperature	°C	2550 B	<0.5	39.5		≤ 40
pH	-	4500-H ²⁾ B	<0.10	7.62		5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	<2.5	2.888		≤ 32,940
Total Suspended Solids	mg/l	2540 D	<2.5	7.0		≤ 50
Fat Oil & Grease	mg/l	5520 B	<1.0	ND		≤ 5
Dissolved Oxygen	mg/l	4500-O G	<0.1	6.1		-
BOD ₅	mg/l	5210 B	<1.0	2.3		≤ 20
COD	mg/l	5220 C	<15.00	83.69		≤ 120
Syrene	mg/l	5030 C / 8260 D	< 0.0002	0.0011		-

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 22nd ED. 2012 (AWWA/APHA/WEF)
REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY SW-846.1³⁾ (EDITION 2007)

Khun Nitya Jaisri
(Miss Khunchuda Insom)
Analyst

REG. NO. 3-239-n-0005

(Mrs. Anya Tipparak)
Technical Management Team
REG. NO. 3-239-n-0004

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found to be 27,940 mg/l therefore the Standard of TDS found to be 32,940 mg/l).

4. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)			REQUEST SERVICE No.	: 0637/67
SAMPLING BY	: SECOT Co., Ltd.			SAMPLING METHOD	: Grab
SAMPLING DATE	: 02/04/2024			SAMPLING TIME	: 14:00
RECEIVED DATE	: 03/04/2024			ANALYTICAL DATE	: 03/04/2024
REPORT DATE	: 17/04/2024			SITE OPERATOR	: Miss Thipsuda Wannakru
SAMPLE CONDITION	: Normal			FILE CODE	: 224056_WW_April
PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ¹⁾
Color (Original pH)	ADMI	2120 F	< 5.0	Effluent Sump pit	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	39.0	≤ 300

Miss Khunchuda Insom
Analyst
REG. NO. 7-239-n-0005

(Mrs. Araya Tipparak)
Technical Management Team
REG. NO. 7-239-n-0004

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME		: BST Elastomers Co., Ltd. (BSTE)			REQUEST SERVICE No. : 0637/67	
SAMPLING BY		: SECOT Co., Ltd.			SAMPLING METHOD : Grab	
SAMPLING DATE		: 02/04/2024			SAMPLING TIME : 14:20	
RECEIVED DATE		: 03/04/2024			ANALYTICAL DATE : 03-11/04/2024	
REPORT DATE		: 17/04/2024			SITE OPERATOR : Miss Thipada Wannakran	
SAMPLE CONDITION : Normal					FILE CODE : 224056_WW_April	
PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION		STANDARD ¹⁾
				Intermediate	Tank II before Final Check Basin	
Temperature	°C	2550 B	< 0.5	37.7		≤ 40
pH		4500-F B	< 0.10	7.80		5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	2.896		≤ 32,040
Total Suspended Solids	mg/l	2540 D	< 2.5	9.0		≤ 50
Fat Oil & Grease	mg/l	5520 B	< 1.0	ND		≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	4.6		-
BOD ₅	mg/l	5210 B	< 1.0	2.9		< 20
COD	mg/l	5220 C	< 15.00	75.10		< 120
Styrene	mg/l	5030 C / 8260 D	< 0.0002	0.0060		-

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21st ED. 2017 (APHA, APTA, WEF)
REFERENCE : UNITED STATES ENVIRONMENTAL PROTECTION AGENCY SW-846, 1st EDITION, 2024

Miss Khunchuda Insom
Analyst
REG. NO. 7-239-n-0005

(Mrs. Araya Tipparak)
Technical Management Team
REG. NO. 7-239-n-0004

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3. Notification of the Ministry of Industry, B.E.2560 (2017).
exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on April 02, 2024 found to be 27,940 mg/l therefore the Standard of TDS found to be 32,940 mg/l).
4. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 104767
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 28/05/2024	SAMPLING TIME	: 14:33
RECEIVED DATE	: 29/05/2024	ANALYTICAL DATE	: 29/05/2024-04/06/2024
REPORT DATE	: 05/06/2024	SITE OPERATOR	: Miss Thipaida Wannakran
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_WW_May

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Sump pit	STANDARD ^v
Flow Rate	m ³ /hr			67	
Temperature	°C	2550 B	< 0.5	38.1	≤ 40
pH		4500-11 B	< 0.10	7.65	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	2.974	≤ 31,980
Total Suspended Solids	mg/l	2540 D	< 2.5	7.4	≤ 50
Fat Oil & Grease	mg/l	5520 D	< 1.0	ND	≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.6	
BOD ₅	mg/l	5210 B	< 1.0	1.6	≤ 20
COD	mg/l	5220 C	< 15.00	63.13	≤ 120
Silicone	mg/l	5030 C / 8260 D	< 0.0002	ND	

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 22nd EDITION (AMERICAN WATERWORKS ASSOCIATION, 2012)
REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 1st EDITION, 2012

(Signature)
(Miss Kienchuda Insom)
Analyst
REG. NO. 7-239-9-0005

(Signature)
(Mrs. Anya Tipparak)
Technical Management Team
REG. NO. 7-239-9-0004

Remark : 1. Reported analysis refers to submitted sample only.

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3. ^v Notification of the Ministry of Industry, B.E.2560 (2017).

exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on May 28, 2024 found to be 26,980 mg/l therefore the Standard of TDS found to be 31,980 mg/l).

4. - Not available.

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 104767
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 28/05/2024	SAMPLING TIME	: 14:33
RECEIVED DATE	: 29/05/2024	ANALYTICAL DATE	: 29/05/2024
REPORT DATE	: 05/06/2024	SITE OPERATOR	: Miss Thipaida Wannakran
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_WW_May

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Effluent Sump pit	STANDARD ^v
Color (Original pH)	ADMI	2120 F	< 5.0	16.7	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	14.5	≤ 300

(Signature)
(Miss Kienchuda Insom)
Analyst
REG. NO. 7-239-9-0005

(Signature)
(Mrs. Anya Tipparak)
Technical Management Team
REG. NO. 7-239-9-0004

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 1047/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 28/05/2024	SAMPLING TIME	: 14:21
RECEIVED DATE	: 29/05/2024	ANALYTICAL DATE	: 29/05/2024-04/06/2024
REPORT DATE	: 05/06/2024	SITE OPERATOR	: Miss Thipsuda Wannakran
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_WW_May

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Intermediate Tank II before Final Check Basin	STANDARD ¹⁾
Temperature	°C	2550 B	< 0.5	36.2	≤ 40
pH		4500-H B	< 0.10	7.56	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 2.5	3.058	≤ 31,980
Total Suspended Solids	mg/l	2540 D	< 2.5	7.0	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 1.0	ND	≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.4	*
BOD ₅	mg/l	5210 B	< 1.0	2.0	< 20
COD	mg/l	5220 C	< 15.00	65.13	< 120
Silyene	mg/l	5030 C / 8260 D	< 0.0002	ND	*

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 22nd ED. 2012 (AWWA, APHA, WEF)
REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY SW-846, 1st EDITION, 2003.

(Miss Kiemchuda Insorn)
Analyst

REG. NO. 7-239-P-0005

(Mrs. Anya Tippapak)
Technical Management Team
REG. NO. 7-239-P-0004

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exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on May 28, 2024 found to be 26,980 mg/l therefore the Standard of TDS found to be 31,980 mg/l).

4. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 1192/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 11/06/2024	SAMPLING TIME	: 14:25
RECEIVED DATE	: 12/06/2024	ANALYTICAL DATE	: 12-19/06/2024
REPORT DATE	: 21/06/2024	SITE OPERATOR	: Miss Thipsuda Wannakran
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_WW_June

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Sump pit	STANDARD ¹⁾
Flow Rate	m ³ /hr	*	*	103	*
Temperature	°C	2550 B	< 0.5	33.6	≤ 40
pH		4500-H B	< 0.10	7.33	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 2.5	2.906	≤ 36,760
Total Suspended Solids	mg/l	2540 D	< 2.5	11.0	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 1.0	ND	≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.6	*
BOD ₅	mg/l	5210 B	< 1.0	2.8	< 20
COD	mg/l	5220 C	< 15.00	47.09	≤ 120
Silyene	mg/l	5030 C / 8260 D	< 0.0002	0.0004	*

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 22nd ED. 2012 (AWWA, APHA, WEF)
REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY SW-846, 1st EDITION, 2003.

(Miss Kiemchuda Insorn)
Analyst

REG. NO. 7-239-P-0005

(Mrs. Anya Tippapak)
Technical Management Team
REG. NO. 7-239-P-0004

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exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on June 11, 2024 found to be 31,760 mg/l therefore the Standard of TDS found to be 36,760 mg/l).

4. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 1192/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 11/06/2024	SAMPLING TIME	: 14:25
RECEIVED DATE	: 12/06/2024	ANALYTICAL DATE	: 12/06/2024
REPORT DATE	: 21/06/2024	SITE OPERATOR	: Miss Thipuda Wannakorn
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_WW_June

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Effluent Sump pit	STANDARD ^u
Color (Original pH)	ADMI	2120 F	< 5.0	16.7	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	14.5	≤ 300

Khunlady Sangmy
(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-R-0005

(Mrs. Anya Tipparak)

Technical Management Team

REG. NO. 7-239-R-0004

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 1192/67
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Gmb
SAMPLING DATE	: 11/06/2024	SAMPLING TIME	: 14:10
RECEIVED DATE	: 12/06/2024	ANALYTICAL DATE	: 12/19/06/2024
REPORT DATE	: 21/06/2024	SITE OPERATOR	: Miss Thipuda Wannakorn
SAMPLE CONDITION	: Normal	FILE CODE	: 224056_WW_June

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Intermediate Tank II before Final Check Basin	STANDARD ^u
Temperature	°C	2550 B	< 0.5	33.2	≤ 40
pH	-	4500-H B	< 0.10	7.22	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	2.124	≤ 36,720
Total Suspended Solids	mg/l	2540 D	< 2.5	8.5	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 1.0	ND	≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.0	-
BOD ₅	mg/l	5210 B	< 1.0	2.9	< 20
COD	mg/l	5220 C	< 15.00	50.23	< 120
Sylene	mg/l	5030 C / 8560 D	< 0.0002	0.0002	-

REFERENCE STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21st Ed. 2013 (AWWA/ATMA, WEP)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY SW-146, 3rd EDITION 2004

Khunlady Sangmy
(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-R-0005

(Mrs. Anya Tipparak)

Technical Management Team

REG. NO. 7-239-R-0004

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exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on June 11, 2024 found to be 31,760 mg/l therefore the Standard of TDS found to be 36,760 mg/l).

4. - Not available.

ใบรับรองผลการตรวจวัดคุณภาพอากาศในสถานประกอบการ



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TEL. (662) 959-3600 FAX (662) 959-3535 Website: secol.co.th E-mail: envserv@secol.co.th

ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.		Request Service No.	: 0773/67
For	: BST Elastomers Co., Ltd. (BSTE)		Sampling Date	: 22/04/2024
Address	: No.571, 1-7 Road, Muang Phou Sub-district, Muang District, Rongyong Province 21150		Received Date	: 23/04/2024
	: 0-3869-8698		Test Date	: 23/04/2023
Tel/Fax	: 0-3869-8698		Report Date	: 26/04/2024
SAMPLE DESCRIPTION / SAMPLING INFORMATION				
Sample Designated As	: Workplace Air		Sampling Method	: Sorbent Adsorption
Sampling By	: SECOT Co., Ltd.		Sample Condition	: Normal
Sampling Location	Sampling Date/Time	Component	Analytical Method	RESULT
Z-601	22/04/2024 08:18~16:14	1,3-Butadiene	NIOSH 1024/GC FID	ppm
				ppm
				ND

Analyst By: Sudaporn S.
(Miss Sudaporn Soonlilom)

Approved By :

Ms. Narisa Poo-Weanetchi)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

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Approved By :

Ms. Narisa Poo-Weanetchi)

Technical Management Team

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.		Request Service No.	: 027767
For	: BST Elastomers Co., Ltd. (BSTE)		Sampling Date	: 09/02/2024
Address	: No.5/L1-7 Road, Map Pa Phui Sub-district, Muang District, Rayong Province 21150		Received Date	: 13/02/2024
	: 0-3860-8698		Test Date	: 14/02/2024
Tel/Fax			Report Date	: 21/02/2024
SAMPLE DESCRIPTION / SAMPLING INFORMATION				
Sample Designated As	: Workplace Air		Sampling Method	: Sorbent Adsorption
Sampling By	: SECOT Co., Ltd.		Sample Condition	: Normal
Sampling Location	Sampling	Compound	Analytical	ND
	Date/Time	Medium	ppm	ppm
Watermark	09-02-2024	1,3-Bisulfide	NIOSH 1024-GC FID	ND
	08:05-16:05	Syrene	NIOSH 1501-GC FID	<0.01
	09-02-2024			100
	08:05-16:05			

Analyst By:

2

(Miss Sularam Soonthorn)

Approved By:

(Miss Narisa Paowasannetch)

Technical Management Team

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 0266/67
For	: BST Elastomers Co., Ltd. (BSTE)	Sampling Date	: 08/02/2024
Address	: No.5/1, 1-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 12/02/2024
		Test Date	: 14/02/2024
Tel/Fax	: 0-3869-8098	Report Date	: 21/02/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Sorbent Adsorption
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
R-102	08/02/2024 08:35-16:35	1,3 Butadiene	NIOSH 1024/GC FID	< 0.02	ND	1

Analyst By:

Sudaporn S.

(Miss Sudaporn Sornthorn)

Approved By:

Maria Poowasamprach

(Miss Nirisa Poowasamprach)

Technical Management Team

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 0266/67
For	: BST Elastomers Co., Ltd. (BSTE)	Sampling Date	: 08/02/2024
Address	: No.5/1, 1-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 12/02/2024
		Test Date	: 14/02/2024
Tel/Fax	: 0-3869-8098	Report Date	: 21/02/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Sorbent Adsorption
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
T-106	08/02/2024 08:40-16:40	Stylene	NIOSH 1501/GC FID	< 0.01	ND	100

Analyst By:

Sudaporn S.

(Miss Sudaporn Sornthorn)

Approved By:

Maria Poowasamprach

(Miss Nirisa Poowasamprach)

Technical Management Team

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 121567
For	: BST Elastomers Co., Ltd. (BSTE)	Sampling Date	: 12/06/2024
Address	: No.571, 1-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 14/06/2024
		Test Date	: 17/06/2024
Tel/Fax	: 0-38604-8698	Report Date	: 19/06/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION			
Sample Designated As	: Workplace Air	Sampling Method	: Subsequent Adsorption
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
Z-6401	12/06/2024 08:25-16:25	L,1-Humulene	NIOSH 1024/GC FID	<0.02	0.18	1
	12/06/2024 08:25-16:25	Sylene	NIOSH 1501/GC FID	<0.01	2.68	100

Analyst By:

Sudaporn S.

(Miss Sudaporn Somthorn)

Approved By:

Mairin Pansasapetch

(Miss Nirina Pansasapetch)

Technical Management Team

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 121567
For	: BST Elastomers Co., Ltd. (BSTE)	Sampling Date	: 12/06/2024
Address	: No.571, 1-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 14/06/2024
		Test Date	: 17/06/2024
Tel/Fax	: 0-38604-8698	Report Date	: 19/06/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION			
Sample Designated As	: Workplace Air	Sampling Method	: Subsequent Adsorption
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
Wei tank	12/06/2024 08:30-16:30	1,3-Bandene	NIOSH 1024/GC FID	<0.02	ND	1
	12/06/2024 08:30-16:30	Sylene	NIOSH 1501/GC FID	<0.01	10.43	100

Analyst By:

Sudaporn S.

(Miss Sudaporn Somthorn)

Approved By:

Mairin Pansasapetch

(Miss Nirina Pansasapetch)

Technical Management Team

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TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 1216/67
For	: RST Elastomers Co., Ltd. (RSTE)	Sampling Date	: 12/06/2024
Address	: No.5/1, 1-7 Road, Map Ta Phut Sub-district, Mueang District, Rayong Province 21150	Received Date	: 14/06/2024
		Test Date	: 17/06/2024
Tel/Fax	: 0-3869-8698	Report Date	: 19/06/2024

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Sorbent Adsorption
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	RESULT		STANDARD
				ND	ppm	
R-102	12/06/2024 08:35-16:35	1,3-Bandione	NIOSH 1024/GC/FID	< 0.02	ND	1
R-106	12/06/2024 08:35-16:35	Styrene	NIOSH 1501/GC/FID	< 0.01	ND	100

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By : Mam Ponsavadeh
(Miss Narin Ponsavadeh)
Technical Management Team

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Noise Monitoring Result : Working Noise MTR-BSTE Site 1

Location : Steam Line (S1 to C-6401AR)

Monitor Period : May 17, 2024

SLM Model : Cirrus CR162B

Serial No : G302738

Site Operator : Mr.Suphanut Intraranaret

Calibrator Model : Cirrus CR:515

Serial No : 97097

Calibration Ref dB(A) : 94.0

Certified Date : Sep 04, 2023

SLM Reading / Adjust dB(A) : 93.7/0.0

Expire Date : Sep 03, 2024

Cal Sheet No.: CR-515-2024-125

Time	Equivalent Sound Pressure Level (dB(A))
	May 17, 2024
00:00 - 01:00	
01:00 - 02:00	
02:00 - 03:00	
03:00 - 04:00	
04:00 - 05:00	
05:00 - 06:00	
06:00 - 07:00	
07:00 - 08:00	
08:00 - 09:00	84.1
09:00 - 10:00	83.6
10:00 - 11:00	83.6
11:00 - 12:00	83.5
12:00 - 13:00	83.5
13:00 - 14:00	83.4
14:00 - 15:00	83.2
15:00 - 16:00	83.3
16:00 - 17:00	
17:00 - 18:00	
18:00 - 19:00	
19:00 - 20:00	
20:00 - 21:00	
21:00 - 22:00	
22:00 - 23:00	
23:00 - 24:00	
Leq(8)*	83.5
Lmax **	88.0
Standard-8Hr	90 dB(A)
Standard-Max	140 dB(A)

Remark : * Average time between 08:00-16:00

** Maximum Sound Pressure Level between 08:00-16:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-BSTE Site 1

Location : Compressor

Monitor Period : Apr 18, 2024

SLM Model : SCARLET ST-21D

Serial No : 820723

Site Operator : Miss Wiraya Patchimboon

Calibrator Model : Cirrus CR:515

Serial No : 97097

Calibration Ref dB(A) : 94.0

Certified Date : Sep 04, 2023

SLM Reading / Adjust dB(A) : 93.8/0.0


Expire Date : Sep 03, 2024

Cal Sheet No.: CR-515-2024-092

Time	Equivalent Sound Pressure Level (dB(A))	
	Apr 18, 2024	
00:00 - 01:00		
01:00 - 02:00		
02:00 - 03:00		
03:00 - 04:00		
04:00 - 05:00		
05:00 - 06:00		
06:00 - 07:00		
07:00 - 08:00		
08:00 - 09:00		81.4
09:00 - 10:00		81.7
10:00 - 11:00		81.4
11:00 - 12:00		81.4
12:00 - 13:00		81.3
13:00 - 14:00		82.3
14:00 - 15:00		82.6
15:00 - 16:00		83.1
16:00 - 17:00		
17:00 - 18:00		
18:00 - 19:00		
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(8)*		81.9
Lmax **		91.6
Standard-8Hr		90 dB(A)
Standard-Max		140 dB(A)

Remark : * Average time between 08:00-16:00

** Maximum Sound Pressure Level between 08:00-16:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-BSTE Site 1

Location : Heat Exchanger (E-6409)

Monitor Period : Apr 18, 2024

SLM Model : SCARLET ST-21D

Serial No : 820727

Site Operator : Miss Wiraya Patchimboon

Calibrator Model : Cirrus CR:515

Serial No : 97097

Calibration Ref dB(A) : 94.0

Certified Date : Sep 04, 2023

SLM Reading / Adjust dB(A) : 93.8/0.0

Expire Date : Sep 03, 2024

Cal Sheet No.: CR-515-2024-092

Time	Equivalent Sound Pressure Level (dB(A))	
	Apr 18, 2024	
00:00 - 01:00		
01:00 - 02:00		
02:00 - 03:00		
03:00 - 04:00		
04:00 - 05:00		
05:00 - 06:00		
06:00 - 07:00		
07:00 - 08:00		
08:00 - 09:00	79.1	
09:00 - 10:00	79.0	
10:00 - 11:00	78.6	
11:00 - 12:00	78.8	
12:00 - 13:00	78.8	
13:00 - 14:00	79.6	
14:00 - 15:00	79.7	
15:00 - 16:00	80.2	
16:00 - 17:00		
17:00 - 18:00		
18:00 - 19:00		
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		
Leq(8)*	79.3	
Lmax **	93.9	
Standard-8Hr	90 dB(A)	
Standard-Max	140 dB(A)	

Remark : * Average time between 08:00-16:00

** Maximum Sound Pressure Level between 08:00-16:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Sununta Sirawuttinanon)
Technical Management Team

ใบรับรองผลการตรวจวัดระดับเสียงติดตัวบุคคล



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TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envssec@secot.co.th

NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Ct.)/Mar24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 29/03/2024	CALIBRATOR TYPE	: Pulsar 22R
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 79781
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @ 1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift D : ID 40178	07.46-19.46	219.6	86.6	83.0

(Miss Kalsarin Voradevitayaya)

Environmental Scientist

(Miss Sunanta Sirawutthinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Ct.)/Mar24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 29/03/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @ 1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift D : ID 41298	07.43-19.43	44.4	79.7	83.0

(Miss Kalsarin Voradevitayaya)

Environmental Scientist

(Miss Sunanta Sirawutthinanon)

Technical Management Team

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TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cr.)Mar24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 29/03/2024	CALIBRATOR TYPE	: Pulsar 22R
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 79781
SITE OPERATOR	: Miss Winaya Patchimboun	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift D : ID 46549	07.36-19.36	83.7	82.5	83.0

(Miss Katesarin Vorradevitayaya)

Environmental Scientist

(Miss Sununta Siravutthinaon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cr.)Mar24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 29/03/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Winaya Patchimboun	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift D : ID 61192	07.49-19.49	239.7	87.0	83.0

(Miss Katesarin Vorradevitayaya)

Environmental Scientist

(Miss Sununta Siravutthinaon)

Technical Management Team

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TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envsaiw@secot.co.th

NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cer.) Mar24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 29/03/2024	CALIBRATOR TYPE	: Pulsar 23R
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 79781
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @ 1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift D : ID 461461	07:44-19:44	7.1	71.8	83.0

(Miss Katesarin Vorradevitayaya)

Environmental Scientist

(Miss Sumrit Sirawutinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cer.) Mar24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 29/03/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @ 1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift D : ID 571077	07:47-19:47	794.7	92.2	83.0

(Miss Katesarin Vorradevitayaya)

Environmental Scientist

(Miss Sumrit Sirawutinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cer.)/1-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 01/04/2024	CALIBRATOR TYPE	: 22R
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 79781
SITE OPERATOR	: Miss Salisa Ainree	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MP4 Shift B : ID 37047	07.09-19.09	23.9	77.0	83.0

(Miss Katesarin Vorradeewitaya)
Environmental Scientist

(Miss Sununta Sirawuttinanon)
Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cer.)/1-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 01/04/2024	CALIBRATOR TYPE	: 22R
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 79781
SITE OPERATOR	: Miss Salisa Ainree	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MP4 Shift B : ID 41301	06.41-18.41	74.0	81.9	83.0

(Miss Katesarin Vorradeewitaya)
Environmental Scientist

(Miss Sununta Sirawuttinanon)
Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cer.)/1-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 01/04/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Salisa Aintree	CALIBRATOR REF.	: 114 dB @ 1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift B : ID 42426	07.01-19.01	21.9	76.7	83.0

(Miss Katesarin Vorradevitayaya)

Environmental Scientist

(Miss Sunutta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cer.)/1-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 01/04/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Salisa Aintree	CALIBRATOR REF.	: 114 dB @ 1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift B : ID 51682	07.11-19.11	381.6	89.0	83.0

(Miss Katesarin Vorradevitayaya)

Environmental Scientist

(Miss Sunutta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cr.)/1-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 01/04/2024	CALIBRATOR TYPE	: 22R
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 79781
SITE OPERATOR	: Miss Sahsa Aineee	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift B : ID 661512	07.02-19.02	161.0	85.3	83.0

(Miss Katesarin Vorradevitvityaya)
Environmental Scientist

(Miss Sununta Strawutinnanon)
Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cr.)/2-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 02/04/2024	CALIBRATOR TYPE	: 22R
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 79781
SITE OPERATOR	: Miss Sahsa Aineee	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift C : ID 42423	07.05-19.05	222.4	86.7	83.0

(Miss Katesarin Vorradevitvityaya)
Environmental Scientist

(Miss Sununta Strawutinnanon)
Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : BST Elastomers Co., Ltd. REFERENCE NO. : 224056-Noise Dose (Cer.)/2-Apr-24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/04/2024 CALIBRATOR TYPE : 22R
MEASUREMENT LOCATION : BSTE SERIAL NO. : 79781
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @ 1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift C : ID 42427	06:58-18:58	85.1	82.5	83.0

(Miss Kalesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawutimmon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : BST Elastomers Co., Ltd. REFERENCE NO. : 224056-Noise Dose (Cer.)/2-Apr-24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 02/04/2024 CALIBRATOR TYPE : 22R
MEASUREMENT LOCATION : BSTE SERIAL NO. : 79781
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @ 1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift C : ID 43466	06:58-18:58	145.1	84.9	83.0

(Miss Kalesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawutimmon)

Technical Management Team

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TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cer.)2-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 02/04/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Solisa Ainree	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	

MP4 Shift C : ID 641368	08.03-19.31	175.3	85.7	83.0
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(Miss Katesarin Vorradevitvillaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cer.)2-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 02/04/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Solisa Ainree	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	

MP4 Shift C : ID 661459	07.04-19.04	18.2	75.9	83.0
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(Miss Katesarin Vorradevitvillaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : BST Elastomers Co., Ltd. REFERENCE NO. : 224056-Noise Dose (Cer.)/3-Apr-24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 03/04/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BSTE SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	

MF4 Shift C : ID 55933 07.17-19.17 59.1 81.0 83.0

(Miss Katesarin Vorradevittaya)

Environmental Scientist

(Miss Sumanta Sirawutinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : BST Elastomers Co., Ltd. REFERENCE NO. : 224056-Noise Dose (Cer.)/3-Apr-24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 03/04/2024 CALIBRATOR TYPE : 22R
MEASUREMENT LOCATION : BSTE SERIAL NO. : 79781
SITE OPERATOR : Miss Salisa Ainree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	

MF3 Day : ID 42368 08.11-16.11 1,008.5 95.0 85.0

(Miss Katesarin Vorradevittaya)

Environmental Scientist

(Miss Sumanta Sirawutinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cer./3-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 03/04/2024	CALIBRATOR TYPE	: 22R
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 79781
SITE OPERATOR	: Miss Salisa Aimee	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	
MF3 Day : ID 48611	08.10-16.10	154.3	86.9	85.0

(Miss Katesarin Voradechvitaya)

Environmental Scientist

(Miss Sumanta Sirawutinnanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cer./3-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 03/04/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Salisa Aimee	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	
MF4 Day : ID 651420	08.09-16.09	11.1	75.5	85.0

(Miss Katesarin Voradechvitaya)

Environmental Scientist

(Miss Sumanta Sirawutinnanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cr.)/3-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 03/04/2024	CALIBRATOR TYPE	: 22R
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 79781
SITE OPERATOR	: Miss Salisa Ainree	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift D : ID 53756	07.00-19.00	71.6	81.8	83.0

(Miss Katesarin Vorradevitwitoaya)

Environmental Scientist

(Miss Sununta Sirawutitamon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cr.)/4-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 04/04/2024	CALIBRATOR TYPE	: 22R
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 79781
SITE OPERATOR	: Miss Salisa Ainree	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	
MF3 Day : ID 631294	08.39-16.39	40.2	81.1	85.0

(Miss Katesarin Vorradevitwitoaya)

Environmental Scientist

(Miss Sununta Sirawutitamon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cer./5-Apr-24)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 05/04/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Salisa Aineer	CALIBRATOR REF.	: 114 dB @ 1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift A : ID 40181	07:34-19:28	220.6	86.7	83.0

(Miss Katesarin Vornadevitayaya)
Environmental Scientist

(Miss Sumonia Sravuttinanun)
Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cer./5-Apr-24)
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 05/04/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Salisa Aineer	CALIBRATOR REF.	: 114 dB @ 1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift A : ID 41292	07:34-19:29	12.2	74.1	83.0

(Miss Katesarin Vornadevitayaya)
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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : BST Elastomers Co., Ltd. REFERENCE NO. : 224056-Noise Dose (Cer.)/5-Apr-24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 05/04/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BSTE SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Aintree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift A : ID 44500	07.18-19.18	191.4	86.1	83.0

(Miss Katesarin Vornudetwitayana)

Environmental Scientist

(Miss Sumnita Sirawutthananon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : BST Elastomers Co., Ltd. REFERENCE NO. : 224056-Noise Dose (Cer.)/5-Apr-24
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 05/04/2024 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BSTE SERIAL NO. : 95167
SITE OPERATOR : Miss Salisa Aintree CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift A : ID 641363	07.04-19.04	216.1	86.6	83.0

(Miss Katesarin Vornudetwitayana)

Environmental Scientist

(Miss Sumnita Sirawutthananon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cer.)/5-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 05/04/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Salisa Ainnce	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift A : ID 641376	07:32-19:26	56.3	80.8	83.0

(Miss Katesarin Vorradevitwitya)

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(Miss Sununta Sirawattimanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cer.)/19-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 19/04/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Salisa Ainnce	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
MF4 Shift B : ID 46560	07:36-19:14	39.5	79.2	83.0

(Miss Katesarin Vorradevitwitya)

Environmental Scientist

(Miss Sununta Sirawattimanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cor.)/22-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 22/04/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Maceeyanee Hawae	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	
MF3 Day : ID 51697	07:45-15:45	4.6	71.7	85.0

(Miss Kancasarin Vorradeewittayana)
Environmental Scientist

(Miss Sununta Sirawutthimoon)
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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cor.)/22-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 22/04/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Maceeyanee Hawae	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	
MF3 Day : ID 43484	07:33-15:33	0.6	62.6	85.0

(Miss Katesarin Vorradeewittayana)
Environmental Scientist

(Miss Sununta Sirawutthimoon)
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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 224056-Noise Dose (Cur.)/24-Apr-24
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 24/04/2024	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Maresynce Hawae	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	
M/F4 Shift A : ID 40167	07:23-19:23	35.5	78.8	83.0

(Miss Katsarin Vorradevitayaya)
Environmental Scientist

(Miss Sunnita Sirawutimanan)
Technical Management Team

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ภาคผนวก จ

ใบแสดงการตรวจเทียบเครื่องมือ

Agilent CrossLab Start Up Services

Agilent 7890 Gas Chromatograph

Preventive Maintenance Checklist

Agilent Preventive Maintenance provides factory recommended service for your analytical instruments to assure reliable operation and the accuracy of your results.

Delivered by highly trained and certified service engineers using genuine Agilent parts and supplies, Agilent Preventive Maintenance provides everything you need to reduce unplanned downtime and keep your systems operating at their peak. This checklist will be completed at the end of the service and provided to you as a record of the preventive maintenance activities.

Agilent 7890 GC Preventive Maintenance Checklist

Introduction

Customer Information

- Customers should provide all necessary operating supplies upon request of the engineer.
- A customer representative should be available to the engineer while performing the preventive maintenance procedures.
- Any parts, not included in the Parts Lists section of this document, are not part of the recommended Preventive Maintenance service, nor are they included in the price of this service.
- If a system requires the use of extra or special procedures and/or parts for the maintenance service, then these must be ordered separately and charged as a repair, which may incur additional costs.

Important Customer Web Links

- For more information about *Agilent Technologies services*, please visit our website using the following URL: <http://www.agilent.com/en-us/products/crosslab-instrument-services/service-repair>
- The Agilent Community is an excellent place to get answers, collaborate with others about applications and Agilent products, and find in-depth documents and videos relevant to Agilent technologies. Visit <https://community.agilent.com/welcome>.
- To access Agilent University, visit <http://www.agilent.com/crosslab/university/> to learn about training options, which include online, classroom and onsite delivery. A training specialist can work directly with you to help determine your best options.
- A useful Agilent Resource Center web page is available, which includes short videos on maintenance, quick lists of consumables for new instruments, and other valuable information. Check out the Resource Page here: <https://www.agilent.com/en-us/agilentresources>.
- Need technical support, FAQs, supplies? – visit our **Support Home page** <http://www.agilent.com/search/support>.
- Videos about specific preparation requirements for your instrument can be found by searching the *Agilent YouTube* channel at <https://www.youtube.com/user/agilent>.
- **7890B Manuals** are also available on Agilent.com:
 - **Safety** https://www.agilent.com/cs/library/usermanuals/public/7890B_Safety.pdf
 - **Installation and First Startup** https://www.agilent.com/cs/library/usermanuals/public/7890B_Installation.pdf
 - **Operation Manual** https://www.agilent.com/cs/library/usermanuals/public/7890B_Operation.pdf
 - **Maintaining Your GC** https://www.agilent.com/cs/library/usermanuals/public/G3490-90052%207890B_Maintaining%20Guide.pdf

Service Engineer's Responsibilities

- Contact the customer and ensure that all necessary supplies are available before the preventive maintenance visit.
- Only select those pages that relate to the system or module being serviced.
- Complete empty fields with the relevant information.
- Complete the relevant checkboxes in the checklist using either a "X" or tick mark "✓".
- Check "Section not applicable" check boxes to indicate services/tasks not delivered, as appropriate.
- Complete the Preventive Maintenance service in the order of the tasks listed.
- Complete the Service Review section together with the customer.
- Complete the fields for page numbers at the foot of each selected page
- Complete the total number of pages field in the Service Completion section
- Ask the customer to sign the *Service Completion section* including the customer's and your signature.

Additional Instruction Notes

- Check for any active service notes for this unit. If there are any applicable "Safety" or "Modification Recommended" Service notes, plan to implement the changes on this unit before doing any qualification service.
- Do not implement firmware updates, unless you get approval from the customer and are sure that they are compatible with the instrument control software.

System Information

- ☐ Check this box if an instrument configuration report is attached instead of completing the table below.

Instrument System Name and ID	7890A GC System / GCMS
Instrument System Site and Location	SECOT Co., Ltd.

List System Component Product Numbers	List the Serial Numbers of each Component
1. G3440A	CN10750035
2. N/A	N/A
3. N/A	N/A
4. N/A	N/A
5. N/A	N/A
6. N/A	N/A
7. N/A	N/A
8. N/A	N/A
9. N/A	N/A
10. N/A	N/A

Preparation

- ☒ Discuss any specific issues with the customer before starting.
- ☒ Review the instrument logbook for recorded problems and comments.
- ☒ Save instrument control settings before starting the procedure.
- ☒ Perform a general inspection of the system for cleanliness.
- ☒ Check for proper installation of parts, assemblies, sensors etc.
- ☒ Check system for required installation of components, settings as defined by current Service Notes.
- ☒ Check for required firmware updates and verify with customers if they would like them installed.
- ☐ Before starting the following procedures, record the Detector Signal Output(s) in the results table. If the GC is turned OFF or in a service mode, comparing the detector outputs before and after the service is not possible.

Preventive Maintenance Procedure

Clean and inspect GC

- ☒ Unplug power cord from the power source.
- ☒ Open GC covers and vacuum/remove any dust/debris. Pay particular attention to cooling fans.
- ☒ Inspect internal connectors for proper contact and placement.
- ☒ Reconnect Power to the GC. Power the GC on and verify the power on self-test passed.
- ☒ Verify oven motor spins freely and turns on with the oven door closed; off when the door is opened.
- ☒ Verify operation of all other fans - the Inlet and EPC cooling fans.
- ☒ Verify oven intake/outlet flap assembly is operating smoothly while heating and cooling the oven

Inlet and detector consumable replacement

- ☒ For the inlets installed, perform inlet maintenance as defined in the 7890 manual - "Maintaining Your GC" - for the Inlet(s) installed.
- ☒ Replace the split vent trap cartridge filter on units with these Inlets: Split/Splitless Capillary (SSL), Multi-Mode Inlet (MMI), Programmed Temperature Vaporizer (PTV), Volatiles Interface (VI).
- ☒ If the Inlet system is used in Split Mode with viscous samples, inspect and clean the split vent tube on the Inlet and flush or replace the tubing between the Inlet and the split vent trap.
- ☐ If the GC includes a Flame Ionization Detector (FID), replace the jet. If the ignitor shows any buildup of sample or corrosion, replace the ignitor. Examine the FID collector and castle assemblies for contamination - clean as necessary.

Zero Sensors and Leak test

- ☒ Zero all pressure sensors per the procedure in the 7890 "Advanced User Guide".
- ☒ Perform inlet pressure decay test(s) as defined in the 7890 "Troubleshooting Manual". If the PM is done in preparation for an Operational Qualification, then the pressure decay test defined within that protocol can be used for the PM.
- ☒ Record if test passed or failed in the results table.

ALS Maintenance

- ☒ Section NOT applicable
- ☐ Check all cabling and configuration settings between GC, tray, and injectors.
- ☐ Vacuum or remove any dust, especially around fans.
- ☐ Check operation of all fans.
- ☐ Check syringe for smooth plunger operation.
- ☐ Check for smooth operation of the needle support - clean if necessary

Restore Instrument

- ☒ Restore the normal operating conditions or customer method using the Data System.
- ☒ Purge the system with carrier flow for 15 minutes
- ☒ Bake out the system, then restore the normal operating conditions
- ☒ After equilibration, check and record the post PM detector signal output values. Results should be similar or lower than the detector outputs recorded prior to PM.
- ☐ Perform a chemical checkout. If this is a routine PM, inject the customer's sample using the ALS if applicable. This will act as a final checkout of both the ALS and the GC.

Note: If the PM Service is performed prior to a qualification service, then use the qualification procedure as a guide for final instrument set up and checkout.

Signature Page

Service Review

- ☒ Attach available reports/printouts of all tests to this documentation.
- ☒ Record the Preventive Maintenance service activity in the customer's records/logbook.
- ☒ Update/reset instrument maintenance counters as appropriate.
- ☒ Affix the PM sticker to the system or instrument logbook based on the customer's request.
- ☒ Complete the Service Engineer Comments section if there are additional comments.
- ☒ Review with the customer this service, parts replaced, and test results obtained.
- ☐ If the instrument firmware was updated, record the details of the change in the Service Engineer's Comments box or if necessary, in the customer's IQ records.
- ☐ Supply the customer with a copy of the Smart Alerts flyer.
- ☐ Describe Smart Alerts to the customer.
- ☐ Install Smart Alerts if requested.

7890 GC Test Results Table

Detector Signal Outputs	Before PM Service	After PM Service
Front detector output	N/A	N/A
Back detector output	N/A	N/A
AUX detector output	N/A	N/A
Pressure decay test	Expected test result	Actual test result
Front inlet pressure decay test	Pass	Pass
Back inlet pressure decay test	Pass	Pass

7890 Parts List Table

The following kits are recommended for capillary and purged packed inlets. If this is a general PM and the customer has a preferred set of consumables, you may use the customer's consumables.

Part description	Part number	Product or model# where used	Quantity consumed
SSL Capillary Inlet PM kit, Splitless	5188-6497	7890A/B	1
SSL Capillary Inlet PM kit, split	5188-6496	7890A/B	1
SSL Capillary Ultra Inert Inlet Gold Seal with Washer	5190-6144	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Splitless Liner - Single taper with Glass Wool	5190-2293	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Low Pressure Drop Split Liner - With Glass Wool	5190-2295	7890A/B	N/A
PP Inlet PM kit	5188-6498	7890A/B	N/A
Split vent trap PM kit, single cartridge (for MMI, PTV & V)	5188-6495	7890A/B	N/A
MMI Cleaning Kit	G3510-60820	7890A/B	N/A
PTV Septumless Head Rebuild Kit	5182-9747	7890A/B	N/A
PTV Septumless Head Teflon Guide	5182-9748	7890A/B	N/A
Ignitor (glow plug) assembly with O-ring	19231-60680	7890A/B	N/A
FID Collector Rebuild/Cleaning Kit	G1531-67000	7890A/B	N/A
Standard .011-inch FID Jet for capillary FID base	G1531-80560	7890A/B	N/A
High Temperature .018-inch FID Jet for capillary FID base	G1531-80620	7890A/B	N/A
Standard .018-inch FID Jet for packed column with packed FID base	18710-20119	7890A/B	N/A
Standard .011-inch FID Jet for capillary column with packed/adaptable FID base	19244-80560	7890A/B	N/A
High Temperature .018-inch FID Jet for capillary column with packed/adaptable FID base	19244-80620	7890A/B	N/A
NPD Jet, universal fit, .011-inch ID	G1534-80580	7890A/B	N/A
NPD Jet, universal fit, .011-inch ID Extended tip	G1534-80590	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Gold Seal with Washer	5190-6144	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Splitless Liner - Single taper with Glass Wool	5190-2293	7890A/B	N/A
**FID Collector Replacement Kit, if needed	G1531-67001	7890A/B	N/A

Service Engineer Comments

If there are any specific points you wish to note as part of performing the service or other items of interest for the customer, please write include them in this box.

N/A

Service Completion

Service request number 606607958 Date service completed 12 Jan 2024
Agilent signature Shirley H. Customer signature Shirley C.
Total number of pages in this document 10

Do not include this section/page in the published, customer-facing PDF version.

This page is only relevant for Agilent source documents for document control purposes and is NOT intended for customer viewing. Refer to the SP/IFPM checklist Authoring Guide for more information.

Document Control Logs

Revision Log

Revision	Date	Author	Reason for update
Revision of document	Date of Issuance	Author of document	Author to describe main features/changes made for this specific revision
1.0 Draft	4-Mar-2011	Dave Park	Migrated the content of revision A.01.05 to the new Agilent template. Reviewed by subject matter expert, Dave Park.
1.1 Draft	20-Jan-2015	Dave Park	Added Split Vent trap to MMI, PTV and VE - also PTV and FID PM Parts
1.2 Draft	31-March-2015	Dave Park	Added Ultra Inert Gold Seal and Liner to SS Consumables
A.01.11	10-Dec-2015	Dave Park	Added step to perform maintenance on the Split Vent Tube and .018" FID Jet part numbers - Fixed broken web links
2.00	30-Dec-2020	Gary Boardman	Updated New Template and terminology change: Familiarization to Introduction. Create New Agile Document Number: D0007063

Approval Log

Revision	Approver	Title of approver
Add revision number	Add approver name here	Add approver's function or title here
A.01.06	Don Gage	Product support manager
A.01.09	Kai Meng	Product support manager
A.01.10	Suneetha Tipplreddy	Product support manager
A.01.11	Suneetha Tipplreddy	Product support manager
2.00	Josh Roark	GC Product Support Manager

Designated Evaluation Log

Revision	Designated Evaluator (DE)	Title of DE	DE Number
Add revision number	Add name	Add function or title	Add DE number here
2.00	Michael Zumwalt	CrossLab Start Up Services Application Consulting Lead	44166.7597222222



CONTROL UNIT CALIBRATION

(Metric units, mm)

Date 12 Jan 24

Barometric press, Pb 758 758 758 mmHg

Dry Gas Meter Data

Reference Dry Gas Meter Data

Console No. M50-07
 Metering System ID
 DGM Number 90331
 DGM Model MST-C2-1
 Calibrated by Montri P.
 Serial No. 358794
 Model S110
 Correction factor (Yr) 1.0068
 Last Calibration Date 26 Oct 23

Orifice manometer setting, ΔH mm H ₂ O	Ref. DGM Volume V _r Liters	DGM Volume V _m Liters	Temperature (°C)		Time Θ min	DGM Correction factor (Y)	ΔH@ mm
			Inlet T _i	Outlet T _o			
12.5	100.0	100.6	25	24	24.5	0.9981	53.7523
25.0	100.2	100.2	25	24	24.5	1.0029	47.6709
50.0	100.0	100.8	25	24	24.5	0.9919	51.7327
76.0	100.2	100.9	25	24	24.5	0.9908	52.4606
100.0	100.1	99.6	25	24	24.5	1.0005	53.0627
150.0	100.2	98.9	25	24	24.5	1.0032	54.0289
Average							0.9979 52.1180

Approved by :



PITOT TUBE CALIBRATION

Calibration Location: SECOT
 Calibration Duet No.: CD-0123
 Calibration Standard Pitot tube data
 Pitot No.: Std-02
 Type S Pitot No.: LL10-01
 Calibration Date : 09-01-2024
 Coefficient (Cp) : 0.99
 Calibrated by : Mr. Montri P.

A Side Calibration

Run No.	ΔPstd (mm H ₂ O)	ΔPs (mm H ₂ O)	Cp(s)	Deviation, δ Cp(s) - Cp(A)
1	15.00	20.50	0.8468	0.0000
2	15.00	20.50	0.8468	0.0000
3	15.00	20.50	0.8468	0.0000

C_{P(A),avg} 0.8468

B Side Calibration

Run No.	ΔPstd (mm H ₂ O)	ΔPs (mm H ₂ O)	Cp(s)	Deviation, δ Cp(s) - Cp(B)
1	15.00	20.50	0.8468	0.0000
2	15.00	20.50	0.8468	0.0000
3	15.00	20.50	0.8468	0.0000

C_{P(B),avg} 0.8468

| CP(A)-CP(B) | = 0.0000
 C_{P(Avg)} = 0.8468

Approved by :

*** δ must be ≤ 0.01 for the test to be acceptable ***
 *** | Cp(A)-Cp(B) | must also be ≤ 0.01 if average of Cp(A) and Cp(B) is to be used ***



ELECTRICAL AND ELECTRONICS INSTITUTE
FOUNDATION FOR INDUSTRIAL DEVELOPMENT



Certificate No.: CP20230345EA

Calibration Report

Equipment: Sound Calibrator
Manufacturer: Cirrus Research Plc
Model/Type: CR-515
Serial No.: 97097
ID No.:
Ambient Temperature: (23 ± 2) °C
Relative Humidity: (50 ± 15) %
Pressure: (101.3 ± 1.5) kPa
Method of Calibration :-
IEC 60942:2017

Condition of this result of calibration

1. Reference standards instrument :-

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Standard microphone	4180	2787490	AA-1024-22	6 November 2023
2) Waveform Generator	33511B	MY52302264	CK20230039EA	27 June 2024
3) Audio Analyzing DMM	2015-P	000136E	E1U225466	2 December 2023
4) Pressure humidity and Temperature Transmitter	PTU301	F0640002	CL1-P230024 CD20230196EA	20 March 2024 23 July 2024

2. This result of calibration was found accurate as shown on date and place of calibration only.

3. This certification is traceable to the International system of unit maintained at :-

Reference standards instrument for Acoustic function

- National Institute of Metrology (Thailand)

Reference standards instrument for Electrical function

- Electrical and Electronics Institute, NSC Accredited Calibration No.0119

Result of Calibration:-

1. Function : Sound pressure level

Normal Frequency (Hz)	Specified Sound Pressure level (dB)	Measured value (dB)	Deviated value (dB)	Acceptance limit ^(a) (dB)
1000	94	94.13	0.13	±0.25

2. Function : Frequency

Normal Sound Pressure level (dB)	Specified Frequency (Hz)	Measured value (Hz)	Deviated value (%)	Acceptance limit ^(a) (%)
94	1000	1000.3	0.0	±0.7



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FOUNDATION FOR INDUSTRIAL DEVELOPMENT
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Tel. +66 2709 4860 Fax: +66 2324 0917



ISO 9001:2015
ISO 17025:2017
CALIBRATION 0119

Certificate No.: CP20230345EA
Operation No.: CP2023080023

Certificate of Calibration

Equipment: Sound Calibrator
Manufacturer: Cirrus Research Plc
Model/Type: CR-515
Serial No.: 97097
ID No.:
Customer: SECOT Co., Ltd.
Address: 239 Rimkongsrapa Rd., Bangsue, Bangkok 10800 Thailand
Received Date: 28 August 2023
Calibrated Date: 4 September 2023
Issued Date: 8 September 2023
Calibrated by: Ms. Juntaporn Kunhakom

Approved by: (Mr. Sittichai Swaksuriyawong)
Group Manager

This report was prepared electronically using applicable electronic signature. Printing or copy of file are considered as a copy of the document.
The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor (k) providing a level of confidence of approximately 95%. This certificate may not be reproduced other than in full except with the prior written approval of the Electrical and Electronics Institute, Foundation for Industrial Development.



ELECTRICAL AND ELECTRONICS INSTITUTE
FOUNDATION FOR INDUSTRIAL DEVELOPMENT

Certificate No.: CP20230345EA

Calibration Report

3. Function : Total distortion + noise

Sound Pressure level (dB)	Nominal Frequency (Hz)	Measured value ^[a] (%)	Acceptance limit ^[b] (%)
94	1000	1.0	2.5

Uncertainty of measurement

Function	Uncertainty	Maximum-permitted uncertainty of measurement
Sound pressure level	0.10 dB	0.15 dB
Frequency	0.10 %	0.20 %
Total distortion + noise	0.40 %	0.50 %

Note: [1] The deviated value is the absolute value of the difference between the measured value and the corresponding specified sound pressure level.

[2] The deviated value is the absolute value of the difference in percent between the measured value and the corresponding specified frequency.

[3] The acceptance limit is for the deviated value.

[4] The measured value is the total distortion + noise, measured over the frequency range from 20 Hz to 20 kHz.

[5] The acceptance limit is for the Measured value.

Remarks: 1. Acceptance limit was IEC 60942:2017 Class 1.

2. Maximum-permitted uncertainty of measurement was IEC 60942:2017 Class 1.

3. The coverage factor $k = 2.00$

--- End of Report ---

WO-02528406



PerkinElmer
For the Better

PinAAcle 900 Series 900T, 900H, 900Z & 900F
Installation Checklist

Customer : SBCOT Co., Ltd.
239 ถนนสุขุมวิทซอย 11
แขวงคลองเตย เขตคลองเตย กรุงเทพมหานคร 10110
CRM # 4854691
Date Tested: 27-28 Sep 2023
Customer Name: คุณารมย์
Tel #: 086-590-9080
Work Order #: WO-02528406
CSE: Chalnarong Thanin

UPON SITE ARRIVAL:

- ☒ Verify that the instrument was not damaged during shipment
- ☒ Unpack the PC and all other accessories. Record the following:

PinAAcle Instrument Model:	PinAAcle900T	S/N	PTDS23051001
Auto Sample Model:	AS 900	S/N	AS9C23037501
Computer Model:	DELL OptiPlex	S/N	DTV9NY3
Cooling System Model:	PolyScience	S/N	2301-01301
Printer Model:	N/A	S/N	N/A
Misc.	FIAS 100	S/N	100S23071301

☒ Record the software and firmware revision below:

Syngstix Software for AA Version: 5.1.0.2086
PinAAcle Spectrometer Firmware Version: 1.5.0.0126
PinAAcle Furnace Firmware Version: 2.20.040

☒ Check the model specific Shipping Kit packed separately for completeness.
Verify the shipping Kit with each instrument order includes all items listed.



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PER-INSTALLATION CHECKS:

- ☒ Verify that proper ventilation is installed and an adequate exhaust rate is accordance to PYL.
- ☒ Verify that the gasses meet out PYL specifications.
- ☒ Verify that gas pressure regulators are installed with proper fillers and pressure are set in accordance to PYL.
- ☒ Verify that the wiring in the lab meets our power and noise requirements specified in PYL.
- ☒ Verify that the lab environment conditions (room temperature, relative humidity) meet in our PYL specification
- ☒ Maintenance accessibility is adequate.
- ☒ Measured Mains Input Voltage under load is adequate per our PYL specifications (≥ 208 VAC)

PHYSICAL INSTALLATION:

- ☒ The instrument, cooling system, computer and any accessories are uncraled and installed on suitable band
- ☒ Install all the electrical connections.
- ☒ Connect the gas hoses and tank regulators, set required pressures, and leak test as required.
- ☒ Install the burner System components. (PirAAcle Series 900T & 900F)
- ☒ Mount and connect the auto sample.
- ☒ Fill and connect the cooling system or connect external cooling according to specifications.
- ☒ Setup the computer and printer. Interconnect all cables between the computer, printer, and instrument.
- ☒ Setup and configure the computer to the instrument and install the software according to the installation chat in the PirAAcle Service Manual.
- ☒ Record the furnace head voltage and manual temperature of 1200 Degrees Celsius.

INSTALLATION TESTING:

- ☒ Perform the following instrument performance tests according to the installation and Test procedure. Complete the Instrument Performance Test Data Sheet below.
 - PirAAcle900T, 900H & 900F
 - Flame Copper Sensitivity and Precision
 - PirAAcle900T & 900Z
 - Furnace Copper Characteristic Mass and Zeeman Ratio
 - PirAAcle900H
 - Furnace Chromium Characteristic Mass and Precision
- ☒ Make and electronic copy of the instrument parameters file per SDB 900PIN_021 procedure on the customer's computer.



CUSTOMER ORIENTATION:

- ☒ Refer to the Customer Orientation Script for details
- ☒ Explain the warranty and customer replaceable parts policy
- ☒ Inform the customer of relevant PerkinElmer training courses, websites, and phone number



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PinAAcle 900 Series 900T, 900H, 900Z & 900F Installation Performance Test Data Sheet

Flame Sensitivity and Precision (PinAAcle Series 900T, 900H & 900F)

With Stainless Steel Nebulizer

Sensitivity	Mean Absorbance ≥ 0.250	N/A
Precision	%RSD $\leq 0.30\%$	N/A

With High Sensitivity Nebulizer

Sensitivity	Mean Absorbance ≥ 0.250 Abs.	0.3957
Precision	%RSD $\leq 0.40\%$	0.29 %

THGA Furnace Copper Characteristic Mass and Zeeman Ratio (PinAAcle 900T & 900Z)

Copper Characteristic Mass

Characteristic Mass	14 \pm 2.5 pg	11.3	pg
Zeeman Ratio	0.52 \pm 0.04	0.55	
Precision	%RSD $\leq 2.0\%$	0.07	%
A.C Voltage measurement under load (Atomization)	≥ 208 VAC	214.6	VAC

HGA Furnace Chromium Characteristic Mass and Precision (PinAAcle 900H)

Chromium Characteristic Mass

Characteristic Mass	3 \pm 0.8 pg	N/A
Precision	$\leq 2.0\%$	N/A
A.C Voltage measurement under load (Atomization)	≥ 207 VAC	N/A

PinAAcle 900 Added Installation Test Checklist:

Model:	PinAAcle900T	Serial Number:	PTDS23051001
Software Version:	5.1.0.2066	Spectrometer FW Version:	1.5.0.0128
		Furnace FW Version:	2.20.040
		Instrument Control PCB revision:	3

NOTE: First 12 test checks are mandatory

1. 0.2, 0.7 & 2.0 Slits and 8 Lamp turret position calibration.

Check ☒

2. Cu energy & Capacitance:

Cu 324.75nm Line/Energy can vary by model and configuration, but Capacitance should be ≥ 7 pF.

Capacitance= 7.0 pF

3. Wavelength Calibration Passed (As, Cu, Ba, K < 8 steps)

Yes ☒
No ☐

4. Wavelength Accuracy Check

AS 193.70 nm \pm 0.12 nm	(193.58-193.82)	193.700 nm
Cu 324.75 nm \pm 0.12 nm	(324.53-324.87)	324.700 nm
Ba 553.55 nm \pm 0.12 nm	(553.43-553.67)	553.550 nm
K 766.49 nm \pm 0.12 nm	(766.37-766.61)	766.490 nm

6. HCL Sample to HCL Reference Ratio with Cu #

30:70	0.42	HCL = 0.43, spec 0.18-0.58, target 0.34-0.52
30:70	1.43	D2 spec = 1.0-4.3
50:50	N/A	HCL = 1.0, spec 0.42-1.35, target 0.90-1.15
50:50	N/A	D2 spec = 0.43-1.84

6. Monochromator Bleed cover with Cu: Must be done with dark current checked (on) #

Sample beam blocked value 11 spec <60 counts, ideally <20

Reference beam blocked value (9007H) 9 spec <60 counts, ideally <20

7. Cu Flame Double-Beam Check #

Mean_15 mA - Mean_10 mA = < 0.004C -0.0014

8. Low UV Energy & Capacitance check: check on all

Cu 216.5 nm	1.0 \geq 1 pF Energy =	58	below 50 may be a problem
*Pb 217.0 nm	N/A \geq 1 pF Energy =	N/A	below 50 may be a problem
*Zn 213.0 nm	2.5 \geq 1 pF Energy =	79	below 50 may be a problem

* Option tests

N/A for PinAAcle 900Z. Flame double-beam mode test



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9. Mn Resolution Peak to Valley Ratio

HCL Sample Intensity (Valley) / HCL Sample Intensity (Peak) < 0.40 (40%) N/A

HCL Reference Intensity (Valley) / HCL Reference Intensity (Peak) < 0.40 (40%) N/A

Furnace Mode (900Z)

HCL Sample Intensity (Valley) / HCL Sample Intensity (Peak) < 0.40 (40%) N/A

10. Furnace and Baffles Alignment Check w/ Cu (900T/ZH)

PK Area - AA < 0.005 A-s 0.0004

PK Area - BG < 0.005 A-s 0.0012

11. Furnace auto sample check valve test (900T/ZH)

Place sample probe onto rinse alignment and for 2 minutes and watch for backwards flow of rinse solution

Does rinse solution go backward? Y/N N

Optional Test Check

[Flame only Verification - 900T/H/F]

12. Gas box calibration check default flow settings

Fuel flow 20 20-22

Oxidant flow 42 around 43

Nebulizer Pressure 29 29-29.5

[Furnace only Verification] *Note test 13&14 should be done simultaneously

13. Voltage drop*

2300C Atomization test 7.5 spec < 16 volts

14. Cr heating rate* : By design the ASCOM PS will output the right DC voltage regardless of the incoming voltage, so that is not the purpose of this test. We are using this to check the conductivity of the furnace head and the function of the pyrometer.

10ppb Cr standard @ 2300C Peak Height/Peak Area 1.578 >1.3



WO-02528406

Comments:

PerkinElmer Service Engineer Signature:

เชาวนรงค์ ธานีรัตน์

Date:

27-28 Sep 2023

Chainarong Thanin

Agilent CrossLab Start Up Services

Agilent 5100 5110 ICP-OES Preventive Maintenance



Agilent Preventive Maintenance provides factory recommended service for your analytical instruments to assure reliable operation and the accuracy of your results

Delivered by highly trained and certified service engineers using genuine Agilent parts and supplies, Agilent Preventive Maintenance provides what you need to reduce unplanned downtime and keep your systems operating at their peak performance.

This checklist is used as a guide for completing the preventive maintenance tasks. A signed copy of this checklist is provided for your records.

Introduction

Customer Information

- Customers should provide all necessary operating supplies upon request of the engineer.
- A customer representative should be available to the engineer while performing the preventive maintenance procedures. Customers are responsible for regular maintenance and are encouraged to observe the service representative.
- Any parts not included in the Parts Lists section of this document are not part of the recommended Preventive Maintenance service nor are they included in the price of this service.
- If a system requires the use of extra or special procedures and/or parts for the maintenance service, then these must be ordered separately and charged as a repair, which may incur additional costs.
- For customers using HF applications, the instrument should be returned to its standard sample introduction system.

Important Customer Web Links

- To access Agilent University, visit <http://www.agilent.com/crosslab/university/> to learn about training options, which include online, classroom and onsite delivery. A training specialist can work directly with you to help determine your best options.
- To access the Agilent Resource Center web page, visit <https://www.agilent.com/en-us/agilentresources>. The following information topics are available:
 - Sample Prep and Containment
 - Chemical Standards
 - Analysis
 - Service and Support
 - Application Workflows
- The Agilent Community is an excellent place to get answers, collaborate with others about applications and Agilent products, and find in-depth documents and videos relevant to Agilent technologies. Visit <https://community.agilent.com/welcome>
- Videos about specific preparation requirements for your instrument can be found by searching the Agilent YouTube channel at <https://www.youtube.com/user/agilent>
- Need to place a service call? Flexible Repair Options | Agilent

Service Engineer's Responsibilities

- Contact the customer and ensure that all necessary supplies are available before the preventive maintenance visit.
- Only select those pages that relate to the system or module being serviced.
- Complete empty fields with the relevant information.
- Complete the relevant checkboxes in the checklist using either a "X" or tick mark "✓".
- Check "Service not applicable" check boxes to indicate services/tasks not delivered, as appropriate.
- Complete the Preventive Maintenance services in the most logical order relevant to the individual system service in the order of the tasks listed.
- Complete the Service Review section together with the customer.
- Complete the fields for page numbers at the foot of each selected page
- Add relevant page numbers to selected pages and complete the total number of pages field in the Service Completion section
- Ask the customer to sign the Service Verification section including the customer's and your signature.

Instrument Maintenance

System Information

- ☐ Check this box if an instrument configuration report is attached instead of completing the table.

Instrument System Name and ID
5110 VDV 100-OES
Instrument System Site and Location
Secot Co., Ltd.

List System Component	Product Numbers	List the Serial Numbers of each Component
1.	G 9010 A	MY 16230003
2.	G 9410 A	AU 16151341
3.	G 9451-90000	38 1641345
4.		
5.		
6.		
7.		
8.		
9.		

ICP-OES Configuration Table		Circle the type or write in the type if other
Nebulizer Type	SeaSpray	OneNeb Conikol Other
Spray Chamber	Cyclonic Single Pass	Cyclonic Double Pass Other
Torch	Radial	Dual View Other
Torch Type	One Piece Semi Demountable Fully Demountable	Other
Injector Diameter	2.4mm 3mm 4mm 0.5mm	Other
Injector Material	Quartz	Ceramic Other

Preparation

- ☒ Discuss any specific issues with the customer before starting.
- ☒ Review the instrument logbook for recorded problems and comments.
- ☒ Save instrument control settings before starting the procedure.
- ☒ Perform a general inspection of the system for cleanliness.
- ☒ Check for proper installation of parts, assemblies, sensors etc.
- ☒ Check system for required installation of components and implementation of Service Notes
- ☒ Check for required firmware/software updates and verify with customers if they would like them installed.
- ☐ For HF application systems, if standard sample introduction system was not installed, ask the customer to install it. ~~with~~
- ☒ Ask the customer to remove any samples from the ICP-OES sample introduction area, auto sampler or around the ICP-OES.

Preventive Maintenance Procedures

Record Pre-PM Instrument performance

- ☒ Run Instrument Performance test
- ☒ Record results in Instrument Performance Test Results Table – Pre-PM.

Clean and inspect ICP-OES system

- ☒ Look for any obvious external damage or problems.
- ☒ Inspect water cooling hoses, gas lines and power cord for excessive wear or damage.
- ☒ Perform a general internal inspection of the system for excessive dust accumulation, clean if necessary.
- ☒ Inspect sample introduction components and record any required maintenance in the Service Engineer Comments and notify the customer as the required actions required.
- ☒ Record the instrument operating conditions in the ICP-OES Status Results Table.
- ☒ Replace the polychromator purge filter.
- ☒ Replace the radial pre-optics window
- ☒ Replace the axial pre-optics window for SVDV and VDV instruments.
- ☒ Check exhaust flow for the correct positive extraction at the exhaust duct to insure they meet minimum specifications.
- ☒ Replace air inlet dust filter.
- ☐ Replace high capacity air inlet dust filter element if installed. **N/A**
- ☒ Remove and clean instrument water inlet filter.

Agilent Water Recirculator

- ☐ Service not applicable
- ☒ Drain cooling fluid and remove any particles from the chiller reservoir
- ☒ Remove, clean and reinstall water inlet metal mesh filter if present.
- ☒ Re fill with Agilent Cool Clear cooling fluid.
- ☒ Clean the cooling system Air filter and the condenser.

SPS 3 Auto Sampler

- ☒ Service not applicable
- ☐ Power cycle the autosampler and verify successful Initialization.
- ☐ Inspect X and Z axis belts for wear. Replace is necessary.
- ☐ Clean X and Z axis slide shafts.
- ☐ Using customer's racks and the Agilent software move the sample probe to the 4 outermost corners and rinse port, ensure that the probe is approximately centered in the vial.

SPS 4 Auto sampler

- ☐ Service not applicable
- ☒ Clean the spill tray, rack location mat, and frames and chassis with a damp soft cloth and diluted mild detergent.
- ☒ Clean the auto sampler cover panels, if cover kit is installed, with domestic window cleaner.
- ☒ Check the X-axis and Z-axis drive belts for cracks, splits, damaged teeth, excessive fraying, color changes or degradation from fumes.
- ☒ Check the X-axis, Theta-axis and Z-axis HFC cables for cracks, incorrect positioning, damaged edges or damaged connectors.
- ☒ Pump Tubing Replacement. Replace peristaltic pump tubing. Replace all tubing that goes from the rinse station to the pump and from the pump to the waste/rinse bottles **only check; passed**
- ☒ Test using customer's tray and move the sample probe to the sample vial 1, wash vial and rinse port and ensure that the probe is centered in the vial. If not use calibration wizard and calibrate the position.

AVS 4, 6, 7 Advanced Valve System

- ☒ Service not applicable
- ☐ Replace valve rotor seal
- ☐ Check fittings for signs of leaks
- ☐ Check tubing including autosampler tubing for kinks or excessive wear
- ☐ Check high flow pump for signs of leaks

ICP-OES adjustment

- ☒ Check position of Zn peak, adjust if required.
- ☒ Check Argon Ratio, adjust to specified value if required.
- ☒ Perform Detector Calibration.
- ☒ Perform Instrument Calibration.

Record Post-PM instrument performance

- ☒ Run Instrument Performance test.
- ☒ Record results in Instrument Performance Test Results Table - Post PM.
- ☒ For systems using ICP Expert version 7.3 and above, run the following instrument tests

- ☒ Subsystem Communications Test
- ☒ Air Flow
- ☒ Water Flow
- ☒ Gas Flows
- ☒ RF Generator
- ☒ Camera Test
- ☒ Optics Test
- ☒ Nebulizer Test

- ☒ Record the result in the Instrument Test Results Table

Restore Instrument

- ☐ For HF applications, ask the customer to reinstall their sample introduction system. **NA**
- ☒ Leave system in an idle state: on and purging.
- ☒ Guidance: If the PM service is performed prior to a qualification service, then use the qualification procedure as a guide for final instrument set up and checkout.

Service Review

- ☒ Attach available reports/printouts of all tests to this documentation.
- ☒ Record the Preventive Maintenance service activity in the customer's records/logbook.
- ☒ Record the PM event in the Smart Alerts logbook, if applicable.
- ☒ Update/reset instrument maintenance counters as appropriate.
- ☒ Affix the PM sticker to the system or instrument logbook based on the customer's request.
- ☒ Complete the Service Engineer Comments section if there are additional comments.
- ☒ Review this service, parts replaced, and test results obtained with the customer.
- ☒ If the instrument firmware was updated, record the details of the change in the Service Engineer's Comments box. Systems in a compliant environment may need additional documentation.
- ☒ Complete the Signature Page with both Service Engineer and Customer signatures.

Test Results

Instrument Performance Test Results Table

Note: These measurements do not form part of any specification and are for reference only.

Pre PM Sensitivity Check			Post PM Sensitivity Check	
	Radial	Axial*	Radial	Axial*
Zn 213.857 nm SRBR	5017.6	11139.3	4452.5	12610.2
Mn 257.610 nm SRBR	12915.3	35974.0	12460.9	41076.6
Al 396.162 nm SBR	12.5	29.0	12.0	26.4
K 766.491 nm SBR	5.1	73.6	4.3	62.6

* Axial result is not applicable for G8016AA, G8012AA Radial View Instruments.

Instrument Test Results Table

Note: The Instrument Test results are for systems using ICP Expert version 7.3 and above only.

Instrument Test	Result
Subsystem Communications Test	Pass
Air Flow	Pass
Water Flow	Pass
Gas Flows	Pass
RF Generator	Pass
Camera Test	Pass
Optics Test	Pass
Nebulizer test	Pass

ICP-OES Status Results Table

Note: These measurements do not form part of any specification and are for reference only.

Measurement	Standby Mode	Plasma On
Mains Voltage	219.805 VAC	213.130 VAC
Mains Current	0.099 A	0.22% A
Instrument Temperature	23.9 °C	24.2 °C
RF Air Flow (sensor speed)	12.0 Hz	18.0 Hz
Plasma Exhaust Temperature	No measurement	30.6 °C
Water Flow Oscillator	No measurement	1.45 L/min
Water Flow Detector	1.12 L/min	1.09 L/min
Water Inlet Temperature	25.9 °C	21.6 °C
Polychromator Temperature	35.0 °C	35.0 °C
CCD Temperature	-40.0 °C	-39.1 °C
Thermal Stabilizer	35.0 °C	35.0 °C
Argon Supply Pressure	599.26 kPa	553.05 kPa
Purge Gas Supply Pressure*1	595.63 kPa	589.30 kPa
Option Gas Supply Pressure*1	- kPa	- kPa
Nebulizer Flow	No measurement	0.70 L/min
Nebulizer Back Pressure	No measurement	310.46 kPa
Plasma Gas Flow	No measurement	11.95 L/min
Auxiliary Gas Flow	No measurement	1.00 L/min
RF Power	No measurement	1199.4 W
RF Supply Current	No measurement	5.655 A
RF Supply Voltage	No measurement	184.734 V

*1 If option installed

Consumed PM Parts

Part Description	Part Number	Product or Model# where used	Quantity consumed
Axial Pre-Optic Window	G8010-68014	G8010A, G8011A, G8014A, G8015A	1
Radial Pre-Optic Window	G8010-68015	All	1
Agilent Cool Clear Coolant Fluid	5759-0037	Agilent Water Recirculator	1
Purge Gas Filler	G8010-60136	All	1
Air Inlet Filter	G8000-68002	All	1
High Capacity Air Filter	G8010-60189	Optional	1
Rotor seal for 6-7 port valve for AVS6/7	G8494-60002	G8494A, G8495	1
Rotor seal for 4 port valve for AVS4	G8493-60002	G8493A	1
Rinse solution to rinse station 2.5mm id x 1m	G8410-80123	SPS 4	1
Barb connector 2.5mm-1.5mm ID	G8410-80124	SPS 4	1
PVC waste tubing 8mm od x 5mm id, 2m	G8410-80122	SPS 4	1
Additional Parts may be required from engineer's stock:			
X axis drive belt	5410047500	SPS 3	1
Z axis drive belt	5410047400	SPS 3	1
Peristaltic pump tubing, PVC SolvaFlex, 3 bridged,	3710049000	SPS 4	1

Consumed Parts Reference
(Purchased by customer, not included as part of PM)

☐ Section Not Applicable.

Part Description	Part Number	Product or Model# where used	Quantity consumed
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Signature Page

Service Engineer Comments (optional)

If there are any specific points you wish to note as part of performing the installation or other items of interest for the customer, please write in this box.

Service Verification

Service Request Number: 60063A35A9
Service Engineer Name: Kanyakorn S.
Service Engineer Signature: Kanyakorn S.
Date Service Completed: 21 Jul 2023
Customer Name:
Customer Signature: Arun Tienwut
Total number of pages in this document: 14



Certificate of Calibration

Certificate No. : 67-420019-1

Submitted by : Secot Co.,Ltd.

239 RimKlongprapa Road, Bangsue, Bangkok 10800 Thailand

Equipment : pH Meter with electrode

pH meter

Manufacturer : Mettler Toledo Model : SevenGo S2

Range : N/A pH Resolution : 0.01 pH

Serial No. : B924795409 ID No. : PH No.12

Electrode

Model : InLab Expert Go Serial No. : 3051249

Ambient Temperature : (25 ± 2) °C

Relative Humidity : (50 ± 15) %

Date of Received : 13 February 2024

Date of Calibration : 20 February 2024

Date of Issue : 20 February 2024

Calibrated by : Permpoon Chanpu

Calibration Method : In-house method CAL-M4201 direct measurement by using standard voltage calibrator and using certified reference material (CRM)

Reference Standard Instruments : This certification is traceable to the International System of Units

1. Multiproduct Calibrator

ID No.	Cert. No.	Due Date	Traceability
440001	23E1240	24 Mar 2025	National Institute of Metrology Thailand (NIMT)

2. Standard Buffer Solution

pH	Cert. No.	Lot No.	Exp. Date	Traceability
4.008	61293328	944535	27 Nov 2025	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025
6.986	61281486	944537	17 Nov 2024	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025
9.997	61281073	944536	17 Nov 2024	CPA Chem Ltd. Accredited to ISO 17034 and ISO/IEC 17025

Approved by :

(Surachai Promthong)

Laboratory Manager



Certificate of Calibration

Certificate No. : 67-420019-1

Result of Calibration :

UUC Condition As-Received : Good

Function : Electrical measurement

pH meter

Performing standard curve by Multiproduct Calibrator at pH (4,7,10)

Adjustment Curve at nominal pH	Applied Voltage (mV)	Nominal Value (pH)	UUC Reading		Correction (mV)	Uncertainty (± mV)
			(pH)	(mV)		
4, 7, 10	177.4800	4	4.00	177	0	0.58
	0.0000	7	7.00	0	0	0.58
	-177.4800	10	10.00	-177	0	0.58

Function : pH meter with electrode

Performing a three - buffer standard curve using buffer nominal pH (4,7,10)

Adjustment Curve at nominal pH	Standard Buffer (pH)	UUC Reading (pH)	Correction (pH)	Uncertainty (± pH)
4, 7, 10	4.008	4.01	0.00	0.0097
	6.986	7.00	-0.01	0.011
	9.997	10.01	-0.01	0.014

Remark

UUC : Unit Under Calibration

This result of calibration was found accurate as shown on date and place of calibration only.

This reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95%

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Certificate of Calibration

Certificate No. : 67-400100-1

Submitted by : Secot Co.,Ltd.

239 RimKlongrapa Road, Bangsue, Bangkok 10800 Thailand

Equipment :

Temperature Indicator with Thermistor Probe (Temp pH)

Temperature Indicator

Manufacturer : Mettler Toledo

Model : SevenGo S2

Range : N/A

Resolution : 0.1 °C

Serial No. : B924795409

ID No. : PH No.12

Thermistor Probe

Model : InLab Expert Go

Sheath Material : Plastic

Diameter : 10 mm.

Length : 120 mm.

Serial No. : 3051249

ID No. : PH No.12

Environment :

Ambient Temperature : (23 ± 2) °C

Relative Humidity : (50 ± 15) %

Line Voltage : (220 ± 22) VAC

Date of Received : 13 February 2024

Date of Calibration : 20 February 2024

Date of Issue : 20 February 2024

Calibrated by : Chortip Samchusri

Calibration Method : This instrument was calibrated by 'in-house method comparison technique CAL-M4003 by compared with PRT in the liquid bath at the constant controlled temperature.

The temperature scale used was based on ITS-90

Reference Standard Instruments : This certification is traceable to the International System of Units

1. Platinum Resistance Thermometer (PRT)

ID No. Cert. No. Due Date

400002 TT-0074-22 20 Jun 2024

2. Standard Digital Thermometer

ID No. Cert. No. Due Date

400003 23E1866 01 Jun 2025

400004 23E1866 01 Jun 2025

Traceability

National Institute of Metrology Thailand (NIMT)

Traceability

National Institute of Metrology Thailand (NIMT)

National Institute of Metrology Thailand (NIMT)

Approved by :

(Surchai Promthong)

Laboratory Manager

The Uncertainties are for a confidence probability of approximately 95%

This certificate may not be reproduced other than in full except with the prior written approval of the Calibratech Co.,Ltd.



Certificate of Calibration

Certificate No. : 67-400100-1

Result of Calibration : Without Adjustment

UUC Condition As-Received : Good

Function : Temperature measurement

Immersion Depth (mm.)	Standard Reading (°C)	UUC Reading (°C)	Correction (°C)	Uncertainty (± °C)
100	25.0020	25.3	-0.3	0.11
100	30.0015	30.3	-0.3	0.11
100	35.0023	35.3	-0.3	0.11

Remark

UUC : Unit Under Calibration

This result of calibration was found accurate as shown on date and place of calibration only.

This reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%

- oOo -

AP





Request Service No. 099/67

Page 1 of 3

Calibration Certificate

Nomenclature : Brand : Mettler Toledo Type : Top-Loading Electronic Balance
Model : AG245 Serial No. : 1117293916 (198129-0)

Submitted by : Laboratory of SECOT CO., LTD.

Location of Calibration : BAL Room, 6th Floor, Secot Co., Ltd.

Calibration range : 0 – 200 g Scale division : 0.00001 g (41g)/ 0.0001 g (210g)

Calibration date : May 24, 2024

Reference Standard No. M2310081S, M2402083S, M2302167S, M2403062N, M2303005N

Traceable to : Metrological Center SCI ECO Services Company Limited.

Thai Calibration Services CO., LTD.

Ambient Condition : Temperature 24.20 – 24.70 °C
Humidity 50.70 – 52.00 % RH

Calibrated By : *Pornpa* Approved By : *Narisa Poowasanpetch*

(Miss Pornnapa Budthum)

(Miss Narisa Poowasanpetch)

Testing Officer

Chief of Technical Management

Date : 05/05/2024

Date : 05/05/2024

Issued Date : May 25, 2024

Measurement Report

Request Service No. 099/67

Page 2 of 3

Description : Brand : Mettler Toledo Type : Top-Loading Electronic Balance

Model : AG245 Serial No. : 1117293916 (198129-0)

Calibration range : 0 – 200 g Scale division : 0.00001 g (41g)/ 0.0001 g (210g)

Calibration date : May 24, 2024

Ambient Condition : Temperature 24.20-24.70 °C Relative humidity 50.70-52.00 % RH

Measurement data :

1. Repeatability of Reading :

Load (g)	Standard Deviation of Reading (g)	Maximum Difference between Successive Reading (g)
50	0.000125	0.0004
100	0.000105	0.0003
150	0.000125	0.0003
200	0.000173	0.0005

2. Off-Center Loading :

A Mass of 50.0000 g was placed and moved to various position on the pan.

Unit : g

Center	Front	Left	Back	Right	Center	Maximum Difference
50.00010	50.00032	50.00048	50.00002	50.00008	50.00020	0.00038

Issued Date : May 25, 2024



มูลนิธิศูนย์บริการ
การตรวจสอบและ
การรับรอง
Foundation for Industrial Development National Food Institute
Food Industrial Laboratory Service Center
Ministry of Industry



Request Service No.099/67

Page 3 of 3

3. Departure from Nominal Value :

Reading (g)	Correction (g)	Uncertainty (+/- g)
0	0.000000	± 0.000034
0.5	0.000022	± 0.000033
1	0.000037	± 0.000018
10	-0.000067	± 0.000036
20	-0.000060	± 0.000044
40	-0.000193	± 0.000072
60	-0.00032	± 0.00011
80	-0.00033	± 0.00013
100	-0.00048	± 0.00015
120	-0.00049	± 0.00017
140	-0.00040	± 0.00022
160	-0.00054	± 0.00023
180	-0.00053	± 0.00024
200	-0.00084	± 0.00027

Calibrated by : *Pornnapa Budthum* .. Approved By : *Narisa Poovasanpetch*

(Miss Pornnapa Budthum)

(Miss Narisa Poovasanpetch)

Testing Officer

Chief of Technical Management

Date : 25/05/2024

Date : 25/05/2024

Issued Date : May 25 2024

Calibration Certificate

Certificate No.: 2402881-001-01
Client name: SECOT CO., LTD.
Address: 239 Rimklongprapa Road, Bangsue,
Bangsue, Bangkok 10800

Page 1 of 3

Equipment: CHAMBER (Hot Air Oven)

Manufacturer: MEMMERT

Model: UF55

Serial No.: B213.0295

ID No.: N/A

Order No.: 2402881

Operation No.: 2402881-001

Date of Receipt: 24 May 2024

Date of Calibration: 24 May 2024

Calibrated by Mr.Pheraphat Tuanjit
Scientist

Approved by *P. Jaenghantit*
(Miss Preeyaporn Jaenghantit)
Vice President, Department of Laboratory Services
Responsible for the Technical Management Team

Date of Issue: 30 May 2024

The uncertainties are for a confidence probability of approximately 95 %.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.

FCS-009 Revision: 01 Date: 20-04-65



Calibration Report

Certificate No.: 2402881-001-01
Equipment: CHAMBER (Hot Air Oven)
Model: UF55
Serial No.: B213.0295
Resolution: 0.1 °C
ID No.: N/A
Manufacturer: MEMMERT
Date of Calibration: 24 May 2024

Page 2 of 3

Location: Laboratory, SECOT CO., LTD.
Environment Condition:
Ambient Temperature (31.0 ± 1) °C
Relative Humidity (68 ± 5) %
Line Voltage (220 ± 3) Volt

Condition of this results of Calibration:

- This instrument was calibrated by insert 9 standard thermometer into its chamber and calibration according to WTE-014 Based on TIS G-20-1/02-08 (E): Guidelines for Calibration and Checks of Temperature Controlled Enclosures.
- The temperature scale used was based on ITS - 90.
- All data show below were final values and the initial data may be obtained upon request.

Reference Standard Instrument:

Instrument	Model	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with sensor	34972A	MY59003377	TE 670223-01	13 January 2025	NATIONAL FOOD INSTITUTE
	RTD	CH4101-109 RTD4101-109			

3. This certificate is traceable to International System of Units (SI Units).

4. This certificate was certified only for the instrument we calibrated.

5. This result of calibration was found accurate as shown on date and place of calibration only.

6. Condition of Calibrated Item: Good

UUC Description:

Time of Record 1 Hour 9 Minute At 80.0, 104.0 and 180.0 °C
Fresh air Damper
Open Position
Close Position
Fan 60%
Not Available

7. Result of Calibration: ☒ Without adjustment ☐ After adjustment



Calibration Report

Certificate No.: 2402881-001-01
Equipment: CHAMBER (Hot Air Oven)
Model: UF55
Serial No.: B213.0295
Resolution: 0.1 °C
ID No.: N/A
Manufacturer: MEMMERT
Date of Calibration: 24 May 2024

Page 3 of 3

Calibration point: 80.0, 104.0 and 180.0 °C

Calibration result:

Calibration Condition	Temperature (°C)	Relative Humidity (%)	Line Voltage (Volt)
MIN	30.7	63.6	217.0
MAX	31.4	73.1	223.0

Table 1: Reporting of Temperature

Calibration point (°C)	Measured Temperature (°C) @ Sensor No. (Sensor No.9 is REF)									Uncertainty ± (°C)
	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	
80.0	79.99	79.94	80.08	80.08	80.13	79.95	79.90	80.17	80.13	0.46
104.0	103.86	103.80	104.00	103.99	104.10	103.83	103.81	104.18	104.10	0.53
180.0	179.73	179.73	180.01	180.00	180.44	179.81	180.20	180.56	180.25	0.90

Table 2: Reporting of Characterization Result

UUC* Setting (°C)	UUC* reading (°C)			Stability ± (°C)	Uniformity (°C)	Overall Variation (°C)
	MIN	MAX	Average			
80.0	80.0	80.0	80.0	0.06	0.23	0.37
104.0	104.0	104.0	104.0	0.10	0.30	0.53
180.0	180.0	180.0	180.0	0.10	0.52	0.98

Note: The quoted uncertainty includes "Stability" and "Loading effect (20% of Temp Uniformity)".

UUC* = Unit Under Calibration

Stability = One-half of the greatest maximum difference of measured temperatures at any one sensors, for at least half an hour after reaching steady state.

Uniformity = The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time.

Overall Variation = The difference of the maximum and minimum measured temperatures throughout observation time.
The report uncertainty of measurement was based on standard uncertainty multiplied by coverage factor k= 2, providing a level of confidence of approximately 95 %.

----- End -----

P. Greengardit
30 May 2024



Calibration Certificate

Certificate No.: 2402881-002-01
Client name: SECOT CO., LTD.
Address: 239 Rimklongrapa Road, Bangsue,
Bangsue, Bangkok 10600

Page 1 of 3

Equipment: CHAMBER (Hot Air Oven)

Manufacturer: MEMMERT

Model: UM 400

Serial No.: B419.1400

ID No.: N/A

Order No.: 2402881

Operation No.: 2402881-002

Date of Receipt: 24 May 2024

Date of Calibration: 24 May 2024

Calibrated by Mr.Pheraphat Tuanjit
Scientist

Date of Issue: 30 May 2024

Approved by *P. Preeyaporn Jaengkarnkit*
(Miss Preeyaporn Jaengkarnkit)
Vice President, Department of Laboratory Services
Responsible for the Technical Management Team

The uncertainties are for a confidence probability of approximately 95 %.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognised national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.

FCS-009 Revision: 01 Date: 20-04-65



For more information, please visit our website at www.nfi.go.th or contact our customer service team at 02-555-1111.

Calibration Report

Certificate No.: 2402881-002-01
Equipment: CHAMBER (Hot Air Oven)
Model: UM 400
Resolution: 1 °C
Serial No.: B419.1400
ID No.: N/A
Manufacturer: MEMMERT
Date of Calibration: 24 May 2024

Page 2 of 3

Location: Laboratory, SECOT CO., LTD.
Environment Condition:
Ambient Temperature (31.3 ± 1) °C
Relative Humidity (68 ± 5) %
Line Voltage (220 ± 3) Volt

Condition of this results of Calibration:

- This instrument was calibrated by insert 9 standard thermometer into its chamber and calibration according to WTE-014 Based on TIAS G-20-1/02-08 (E): Guidelines for Calibration and Checks of Temperature Controlled Enclosures.
 - The temperature scale used was based on ITS - 90.
 - All data show below were final values and the initial data may be obtained upon request.
- Reference Standard Instrument :

Instrument	Model	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with sensor	34972A	MY59003377	TE 670223-01	13 January 2025	NATIONAL FOOD INSTITUTE
	RTD	CH201-209/RTD#201-209			

- This certificate is traceable to International System of Units (SI Units).
- This certificate was certified only for the instrument we calibrated.
- This result of calibration was found accurate as shown on date and place of calibration only.
- Condition of Calibrated item : Good

UUC Description :

Time of Record 1 Hour 9 Minute At 150 °C

Fresh air Damper
Open Close Position Fan

Result of Calibration :
☒ Without adjustment
☐ After adjustment

P. Preeyaporn Jaengkarnkit
30 May 2024

FCS-012 Revision: 01 Date: 20-04-65



For more information, please visit our website at www.nfi.go.th or contact our customer service team at 02-555-1111.

Calibration Report

Certificate No.: 2402881-002-01
Equipment: CHAMBER (Hot Air Oven)
 Model: UM 400
 Resolution: 1 °C
 Manufacturer: MEMMERT
 Date of Calibration: 24 May 2024
 Calibration point: 150 °C
 Calibration result:
 MIN 31.1 MAX 31.6
 Relative Humidity (%) 64 73
 Line Voltage (Volt) 217.0 223.0
 Serial No.: B419.1400
 ID No.: N/A

Page 3 of 3

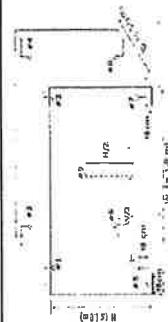


Table 1 : Reporting of Temperature

Calibration point (°C)	Temperature (°C)	Relative Humidity (%)	Line Voltage (Volt)
MIN	31.1	64	217.0
MAX	31.6	73	223.0

Table 2 : Reporting of Characterization Result

Calibration point (°C)	Measured Temperature (°C) @ Sensor No. (Sensor No.9 is REF)										Uncertainty ± (°C)
	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9		
150	150.55	150.90	150.22	150.43	148.88	149.82	149.32	149.81	149.59		1.3

Table 2 : Reporting of Characterization Result

UUC* Setting (°C)	UUC* reading (°C)		Stability ± (°C)	Uniformity (°C)	Overall Variation (°C)
	MIN	MAX			
As Mark 150	176	176	0.87	1.31	3.33

Note The quoted uncertainty include " Stability " and " Loading effect (20% of Temp Uniformity) "

UUC* = Unit Under Calibration

Stability = One-half of the greatest maximum difference of measured temperatures at any one sensors, for at least half an hour after reaching steady state.

Uniformity = The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time.

Overall Variation = The difference of the maximum and minimum measured temperatures throughout observation time.

The report uncertainty of measurement was based on standard uncertainty multiplied by coverage factor k= 2, providing a level of confidence of approximately 95 %.

F-C5-012 Revision: 01 Date: 20-04-65
 30 May 2024



Calibration Certificate

Certificate No.: 2304081-001-01
Client name: SECOT CO., LTD.
Address: 239 Rimkongsrapa Road,
 Bangsue, Bangsue, Bangkok 10800

Page 1 of 3

Equipment: CHAMBER (Incubator)

Manufacturer: MEMMERT

Model: ICP 400

Serial No.: K406.0004

ID No.: N/A

Order No.: 2304081

Operation No.: 2304081-001

Date of Receipt: 27 July 2023

Date of Calibration: 27 July 2023

Calibrated by Mr.Worapob Sookthong
 Scientist

Approved by (Mr.Pheraphat Tuanjit)
 Manager, Division of Calibration Laboratory
 Responsible for the Technical Management Team

Date of Issue: 7 August 2023

The uncertainties are for a confidence probability of approximately 95 %.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.

F-C5-009 Revision: 01 Date: 20-04-65



Calibration Report

Certificate No.: 2304081-001-01
Equipment: CHAMBER (Incubator)
Model: ICP 400 Serial No.: K406.0004
Resolution: 0.1 °C ID No.: N/A
Manufacturer: MEMMERT
Date of Calibration: 27 July 2023

Page 2 of 3

Location: Laboratory, SECOT CO., LTD.
Environment Condition:
Ambient Temperature (30 ± 1) °C
Relative Humidity (54 ± 1) %
Line Voltage (228 ± 0) Volt

Condition of this results of Calibration:

- This instrument was calibrated by Insert 9 standard thermometer into its chamber and calibration according to W-TE-014 Based on TLAS G-20-1/02-08 (E): Guidelines for Calibration and Checks of Temperature Controlled Enclosures.
- The temperature scale used was based on ITS - 90.
- All data show below were final values and the initial data may be obtained upon request.

2. Reference Standard Instrument :

Instrument	Model	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with sensor	34972A RTD	MY49016894 CH4301-309/RTD#301-309	TE 660380-01	22 April 2024	NATIONAL FOOD INSTITUTE

- This certificate is traceable to International System of Units (SI Units).

- This certificate was certified only for the instrument we calibrated.

- This result of calibration was found accurate as shown on date and place of calibration only.

- Condition of Calibrated Item : Good

UUC Description :

Time of Record 1 Hour 9 Minute At 20.0 °C
Fresh air Damper ☒ Open ☐ Position ☐ Close
Not Available ☒ Without adjustment ☐ After adjustment

- Result of Calibration : ☒ Without adjustment ☐ After adjustment

F-CS-012 Revision: 01 Date: 20-04-65



Calibration Report

Certificate No.: 2304081-001-01
Equipment: CHAMBER (Incubator)
Model: ICP 400 Serial No.: K406.0004
Resolution: 0.1 °C ID No.: N/A
Manufacturer: MEMMERT
Date of Calibration: 27 July 2023

Page 3 of 3

Calibration point: 20.0 °C

Calibration result:

Calibration Condition	Temperature (°C)	Relative Humidity (%)	Line Voltage (Volt)
MIN	28.6	53.0	227.3
MAX	31.4	54.1	228.1

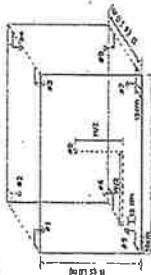


Table1 : Reporting of Temperature

Calibration point (°C)	Measured Temperature (°C) @ Sensor No. (Sensor No.9 is REF)									Uncertainty ± (°C)
	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	
20.0	20.42	20.39	20.40	20.43	20.47	20.49	20.42	20.41	20.43	0.27

Table 2 : Reporting of Characterization Result

UUC* Setting (°C)	UUC* reading (°C)			Stability ± (°C)	Uniformity (°C)	Overall Variation (°C)
	MIN	MAX	Average			
20.0	20.0	20.1	20.0	0.065	0.053	0.220

Note The quoted uncertainty include " Stability " and " Loading effect (20% of Temp Uniformity) "

UUC* = Unit Under Calibration

Stability = One-half of the greatest maximum difference of measured temperatures at any one sensors, for at least half an hour after reaching steady state.

Uniformity = The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time.

Overall Variation = The difference of the maximum and minimum measured temperatures throughout observation time.

The report uncertainty of measurement was based on standard uncertainty multiplied by coverage factor k= 2, providing a level of confidence of approximately 95 %.

----- End -----

F-CS-012 Revision: 01 Date: 20-04-65





Condition of this result of calibration

1. Reference Standard Instruments :

This certification is traceable to the International System of Unit through the reference standards laboratory of Industrial Calibration Center, Technology Promotion Association (Thailand-Japan).

Instruments

Serial No.	ID No.	Certificate No.	Due Date
1) Burette	130BU10	23CG1172	22 Mar 2025
2) Balance	140RC008	23MM18	20 Feb 2024

2. Standard Material :-

Material	Manufacturer	Lot.No.	Assay
Sodium Thiosulfate pentahydrate	Merck	AM1763316	100.2%

Result : Dissolved Oxygen Meter Adjustment With Air 100 %

Dissolved Oxygen Probe No.: KC1N2993N

Titration Method (Azide Modification Method) (mg/L)	DO Meter Reading (mg/L)	Standard Deviation (mg/L)
8.18	8.17	0.0055

This report was certified only for the instrument we tested. It is allowable to use for study the system efficiency. The environmental impact control and present to organization it may concerned intend to use for advertising and referral purpose is prohibited. This report may not be reproduced other in full without written approval of the laboratory

-o0o-

Certificate of Testing

Equipment : DO Meter
Manufacturer : Hama
Model : HI98193
Serial No. : 08110088101
ID No. : DO No.9
Received Date : 14 November 2023
Test Date : 15 November 2023
Reference : 2311-0451/DN-1
Submitted by : Secot Co., Ltd.
239 Rimklongprapa Road,
Bangsue, Bangkok 10800
Laboratory Condition : Temperature (25 ± 5) °C
Humidity (50 ± 20) %
Test Procedure : In - house method : CP-CH9
by Comparison Technique with Azide Modification Method

Tested by : Waleak Sirithean

Approved by : 
Approved Signatory

(✓) Sathip Meangmai
() Wiarakom Lemgagtrakul
() Ponpan Palpin

Issue Date : 16 November 2023



Agilent CrossLab Start Up Services

Agilent 7890 Gas Chromatograph

Preventive Maintenance Checklist

Agilent Preventive Maintenance provides factory recommended service for your analytical instruments to assure reliable operation and the accuracy of your results.

Delivered by highly trained and certified service engineers using genuine Agilent parts and supplies, Agilent Preventive Maintenance provides everything you need to reduce unplanned downtime and keep your systems operating at their peak. This checklist will be completed at the end of the service and provided to you as a record of the preventive maintenance activities.



Introduction

Customer Information

- Customers should provide all necessary operating supplies upon request of the engineer.
- A customer representative should be available to the engineer while performing the preventive maintenance procedures.
- Any parts, not included in the Parts Lists section of this document, are not part of the recommended Preventive Maintenance service, nor are they included in the price of this service.
- If a system requires the use of extra or special procedures and/or parts for the maintenance service, then these must be ordered separately and charged as a repair, which may incur additional costs.

Important Customer Web Links

- For more information about **Agilent Technologies services**, please visit our website using the following URL: <http://www.agilent.com/en-us/products/crosslab-instrument-services/service-repair>
- The **Agilent Community** is an excellent place to get answers, collaborate with others about applications and Agilent products, and find in-depth documents and videos relevant to Agilent technologies. Visit <https://community.agilent.com/welcome>.
- To access **Agilent University**, visit <http://www.agilent.com/crosslab/university/> to learn about training options, which include online, classroom and onsite delivery. A training specialist can work directly with you to help determine your best options.
- A useful **Agilent Resource Center** web page is available, which includes short videos on maintenance, quick lists of consumables for new instruments, and other valuable information. Check out the Resource Page here: <https://www.agilent.com/en-us/agilentresources>.
- Need technical support, FAQs, supplies? – visit our **Support Home page** <http://www.agilent.com/search/support>.
- Videos about specific preparation requirements for your instrument can be found by searching the **Agilent YouTube** channel at <https://www.youtube.com/user/agilent>.
- **7890B Manuals** are also available on Agilent.com:
 - **Safety** https://www.agilent.com/cs/library/usermanuals/public/7890B_Safety.pdf
 - **Installation and First Startup** https://www.agilent.com/cs/library/usermanuals/Public/7890B_Installation.pdf
 - **Operation Manual** https://www.agilent.com/cs/library/usermanuals/Public/7890B_Operation.pdf
 - **Maintaining Your GC** https://www.agilent.com/cs/library/usermanuals/public/G3430-90052%207890B_Maintaining%20Guide.pdf

Service Engineer's Responsibilities

- Contact the customer and ensure that all necessary supplies are available before the preventive maintenance visit.
- Only select those pages that relate to the system or module being serviced.
- Complete empty fields with the relevant information.
- Complete the relevant checkboxes in the checklist using either a "X" or tick mark "✓".
- Check "Section not applicable" check boxes to indicate services/tasks not delivered, as appropriate.
- Complete the Preventive Maintenance service in the order of the tasks listed.
- Complete the Service Review section together with the customer.
- Complete the fields for page numbers at the foot of each selected page
- Complete the total number of pages field in the Service Completion section
- Ask the customer to sign the **Service Completion section including the customer's and your signature.**

Additional Instruction Notes

- Check for any active service notes for this unit. If there are any applicable "Safety" or "Modification Recommended" Service notes, plan to implement the changes on this unit before doing any qualification service.
- Do not implement firmware updates, unless you get approval from the customer and are sure that they are compatible with the instrument control software.



System Information

- ☐ Check this box if an Instrument configuration report is attached instead of completing the table below.

Instrument System Name and ID	7890A GC System
Instrument System Site and Location	SECOT CO., LTD.

List System Component Product Numbers	List the Serial Numbers of each Component
1. G3440A	US10943001
2. G4513A	CN10110080
3. G4514A	CN93901235
4. N/A	N/A
5. N/A	N/A
6. N/A	N/A
7. N/A	N/A
8. N/A	N/A
9. N/A	N/A
10. N/A	N/A

Preparation

- ☒ Discuss any specific issues with the customer before starting.
- ☒ Review the instrument logbook for recorded problems and comments.
- ☒ Save instrument control settings before starting the procedure.
- ☒ Perform a general inspection of the system for cleanliness.
- ☒ Check for proper installation of parts, assemblies, sensors etc.
- ☒ Check system for required installation of components, settings as defined by current Service Notes.
- ☒ Check for required firmware updates and verify with customers if they would like them installed.
- ☐ Before starting the following procedures, record the Detector Signal Output(s) in the results table. If the GC is turned OFF or in a service mode, comparing the detector outputs before and after the service is not possible.



Preventive Maintenance Procedure

Clean and inspect GC

- ☒ Unplug power cord from the power source.
- ☒ Open GC covers and vacuum/remove any dust/debris. Pay particular attention to cooling fans.
- ☒ Inspect internal connectors for proper contact and placement.
- ☒ Reconnect Power to the GC. Power the GC on and verify the power on self-test passed.
- ☒ Verify oven motor spins freely and turns on with the oven door closed; off when the door is opened.
- ☒ Verify operation of all other fans - the inlet and EPC cooling fans.
- ☒ Verify oven intake/outlet flap assembly is operating smoothly while heating and cooling the oven

Inlet and detector consumable replacement

- ☒ For the inlets installed, perform inlet maintenance as defined in the 7890 manual - "Maintaining Your GC" - for the inlet(s) installed.
- ☒ Replace the split vent trap cartridge filter on units with these inlets: Split/Spiltless Capillary (SSL), Multi-Mode Inlet (MMI), Programmed Temperature Vaporizer (PTV), Volatiles Interface (VI).
- ☒ If the inlet system is used in Split Mode with viscous samples, inspect and clean the split vent tube on the inlet and flush or replace the tubing between the inlet and the split vent trap.
- ☒ If the GC includes a Flame Ionization Detector (FID), replace the jet. If the ignitor shows any buildup of sample or corrosion, replace the ignitor. Examine the FID collector and castle assemblies for contamination - clean as necessary.

Zero Sensors and Leak test

- ☒ Zero all pressure sensors per the procedure in the 7890 "Advanced User Guide".
- ☒ Perform inlet pressure decay test(s) as defined in the 7890 "Troubleshooting Manual". If the PM is done in preparation for an Operational Qualification, then the pressure decay test defined within that protocol can be used for the PM.
- ☒ Record if test passed or failed in the results table.

ALS Maintenance

- ☐ **Section NOT applicable**
- ☒ Check all cabling and configuration settings between GC, tray, and injectors.
- ☒ Vacuum or remove any dust, especially around fans.
- ☒ Check operation of all fans.
- ☒ Check syringe for smooth plunger operation.
- ☒ Check for smooth operation of the needle support - clean if necessary

Restore Instrument

- ☒ Restore the normal operating conditions or customer method using the Data System.
- ☒ Purge the system with carrier flow for 15 minutes
- ☒ Bake out the system, then restore the normal operating conditions
- ☒ After equilibration, check and record the post PM detector signal output values. Results should be similar or lower than the detector outputs recorded prior to PM.
- ☒ Perform a chemical checkout. If this is a routine PM, inject the customer's sample using the ALS if applicable. This will act as a final checkout of both the ALS and the GC.

Note: If the PM Service is performed prior to a qualification service, then use the qualification procedure as a guide for final instrument set up and checkout.

Signature Page

Service Review

- ☒ Attach available reports/printouts of all tests to this documentation.
- ☒ Record the Preventive Maintenance service activity in the customer's records/logbook.
- ☒ Update/reset instrument maintenance counters as appropriate.
- ☒ Affix the PM sticker to the system or instrument logbook based on the customer's request.
- ☒ Complete the Service Engineer Comments section if there are additional comments.
- ☒ Review with the customer this service, parts replaced, and test results obtained.
- ☐ If the instrument firmware was updated, record the details of the change in the Service Engineer's Comments box or if necessary, in the customer's IQ records.
- ☐ Supply the customer with a copy of the Smart Alerts flyer.
- ☐ Describe Smart Alerts to the customer.
- ☐ Install Smart Alerts if requested.

7890 GC Test Results Table

Detector Signal Outputs	Before PM Service	After PM Service
Front detector output	FID	15
Back detector output	FPD	60
AUX detector output	N/A	N/A
Pressure decay test	Expected test result	Actual test result
Front inlet pressure decay test	Pass	Pass
Back inlet pressure decay test	Pass	Pass

7890 Parts List Table

The following kits are recommended for capillary and purged packed inlets. If this is a general PM and the customer has a preferred set of consumables, you may use the customer's consumables.

Part description	Part number	Product or model# where used	Quantity consumed
SSL Capillary Inlet PM kit, Splitless	5188-6497	7890A/B	1
SSL Capillary Inlet PM kit, split	5188-6496	7890A/B	1
SSL Capillary Ultra Inlet Gold Seal with Washer	5190-6144	7890A/B	N/A
SSL Capillary Ultra Inlet Splitless Liner - Single taper with Glass Wool	5190-2293	7890A/B	N/A
SSL Capillary Ultra Inlet Low Pressure Drop Split Liner - with Glass Wool	5190-2295	7890A/B	N/A
PP Inlet PM kit	5188-6498	7890A/B	N/A
Split vent trap PM kit, single cartridge (for MMI, PTV & V)	5188-6495	7890A/B	N/A
MMI Cleaning Kit	G3510-60820	7890A/B	N/A
PTV Septumless Head Rebuild Kit	5182-9747	7890A/B	N/A
PTV Septumless Head Teflon Guide	5182-9748	7890A/B	N/A
Ignitor (glow plug) assembly with O-ring	19231-60680	7890A/B	1
FID Collector Rebuild/Cleaning Kit	G1531-67000	7890A/B	N/A
Standard .011-inch FID Jet for capillary FID base	G1531-80560	7890A/B	N/A
High Temperature .018-inch FID Jet for capillary FID base	G1531-80620	7890A/B	N/A
Standard .018-inch FID Jet for packed column with packed FID base	18710-20119	7890A/B	N/A
Standard .011-inch FID Jet for capillary column with packed/adaptable FID base	19244-80560	7890A/B	N/A
High Temperature .018-inch FID Jet for capillary column with packed/adaptable FID base	19244-80620	7890A/B	N/A
NPD Jet, universal fit, .011-inch ID	G1534-80580	7890A/B	N/A
NPD Jet, universal fit, .011-inch ID Extended tip	G1534-80590	7890A/B	N/A
SSL Capillary Ultra Inlet Gold Seal with Washer	5190-6144	7890A/B	N/A
SSL Capillary Ultra Inlet Splitless Liner - Single taper with Glass Wool	5190-2293	7890A/B	N/A
**FID Collector Replacement Kit, if needed	G1531-67001	7890A/B	N/A

Service Engineer Comments

If there are any specific points you wish to note as part of performing the service or other items of interest for the customer, please write include them in this box.

N/A

Service Completion

Service request number6006785689

Agilent signature

Date service completed23 May 2024

Customer signature

Total number of pages in this document10

Do not include this section/page in the published, customer-facing PDF version.

This page is only relevant for Agilent source documents for document control purposes and is NOT intended for customer viewing. Refer to the SPIPFM checklist Authoring Guide for more information.

Document Control Logs

Revision Log

Revision	Date	Author	Reason for update
Revision of document	Date of Issuance	Author of document	Author to describe main features/changes made for this specific revision
1.0 Draft	4-Mar-2011	Dave Park	Migrated the content of revision A.01.05 to the new Agilent template. Reviewed by subject matter expert, Dave Park.
1.1 Draft	20-Jan-2015	Dave Park	Added Split Vent trap to MMI, PTV and VE - also PTV and FID PM Parts
1.2 Draft	31-March-2015	Dave Park	Added Ultra Inert Gold Seal and Liner to SS Consumables
A.01.11	10-Dec-2015	Dave Park	Added step to perform maintenance on the Split Vent Tube and .018" FID Jet part numbers - Fixed broken web links
2.00	30-Dec-2020	Gary Boardman	Updated New Template and terminology change: Familiarization to Introduction. Create New Agile Document Number: D0007063

Approval Log

Revision	Approver	Title of approver
Add revision number	Add approver name here	Add approver's function or title here
A.01.06	Don Gage	Product support manager
A.01.09	Kai Meng	Product support manager
A.01.10	Suneetha Tippireddy	Product support manager
A.01.11	Suneetha Tippireddy	Product support manager
2.00	Josh Roark	GC Product Support Manager

Designated Evaluation Log

Revision	Designated Evaluator (DE)	Title of DE	DE Number
Add revision number	Add name	Add function or title	Add DE number here
2.00	Michael Zumwalt	CrossLab Start Up Services Application Consulting Lead	44166.759722222

CERTIFICATE OF CALIBRATION

ISSUED BY NoiseMeters
DATE OF ISSUE 28 April 2023
CERTIFICATE NUMBER 191319

NoiseMeters
Acoustic House
Bridlington Road
Hunmanby
YO14 0PH
United Kingdom
www.noisemeters.com

Page 1 of 1
Test engineer:
Rebecca Thomas
Electronically signed:

NoiseMeters

doseBadge Reader

Instrument Pulsar Instruments Plc
Model Number: Model 22R
Serial Number: 79781
Notes:

Calibration Procedure

The tests were carried out in accordance with the requirements of IEC 60942:2003 where applicable.
Date of Calibration: 26 April 2023

Functionality Results

Function	Result
Keypad	
Battery Power	
Display	
Communication	
2 way IR link	
Clock	

Calibration Results

	Level (dB)	Frequency (Hz)	Distortion (% THD + Noise)
Result	114.00	989.0	0.47
Uncertainty	± 0.11	± 0.14	± 0.10
Tolerances	± 0.60	± 2.00	± 4.00

No adjustments were made during this calibration.

Environmental Conditions

Pressure: 101.00 kPa
Temperature: 22.4 °C
Humidity: 33.7 %

Notes

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a coverage factor k=2, providing a coverage probability of approximately 95%.

CERTIFICATE OF CALIBRATION

ISSUED BY NoiseMeters
DATE OF ISSUE 26 March 2024
CERTIFICATE NUMBER 211259

NoiseMeters
Acoustic House
Bridlington Road
Hunmanby
YO14 0PH
United Kingdom
www.noisemeters.com

Page 1 of 2
Approved signatory
N.Smith
Electronically signed:

doseBadge Reader : IEC 60942:2003

Instrument Information
Manufacturer: Cirrus Research plc
Model: RC:110A
Serial number: 95167
Class: 2
Notes:

Test summary

Date of calibration: 25 March 2024

The doseBadge reader detailed above has been calibrated to the published data as described in the operating manual and in the half-inch configuration. The procedures and techniques used are as described in IEC60942:2003 Annex B – Periodic Tests and three determinations of the sound pressure level, frequency and total distortion were made.

The sound pressure level was measured using a W5ZF condenser microphone type MK224 manufactured by Cirrus Research plc.

The results have been corrected to the reference pressure of 101.33 kPa using the manufacturer's data.

The doseBadge Reader has been shown to conform to the Class 2 requirements for periodic testing, described in Annex B of IEC 60942:2003 for the sound pressure level(s) and frequency(ies) stated, for the environmental conditions under which the tests were performed.

However, as public evidence was not available, from a testing organisation responsible for pattern approval, to demonstrate that the model of doseBadge Reader conformed to the requirements for pattern evaluation described in Annex A of IEC 60942:2003, no general statement or conclusion can be made about conformance of the doseBadge Reader to the requirements of IEC 60942:2003.

Notes:

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%.

CERTIFICATE OF CALIBRATION

Environmental conditions
The following conditions were recorded at the time of the test:
Before Pressure: 99.26 kPa Temperature: 22.1 °C Humidity: 33.4 %
After Pressure: 99.26 kPa Temperature: 22.1 °C Humidity: 34.6 %

Test equipment	
Equipment	Manufacturer Model Serial number
Distortion Meter	Keithley 2015 0839263
Acoustic Callibrator	Briel and Kjaer 4231 2610257
Environmental Monitor	Comet T7510 21962628

Initial Acoustic Results						
	Expected	Sample 1	Sample 2	Sample 3	Average	Deviation
Level (dB)	114.00	113.41	113.54	113.55	113.50	-0.50
Distortion (%)	< 4.00	0.49	0.50	0.55	0.51	0.51
Frequency (Hz)	1000.0	990.5	990.5	990.4	990.5	-9.5
						Tolerance
						±0.75 ±4.00 ±20.0
						0.11 dB 0.13 % 0.1 Hz

The measured quantities or deviations (as applicable), extended by the expanded combined uncertainty of measurement, must not exceed the corresponding tolerance.

Adjusted Acoustic Results						
	Expected	Sample 1	Sample 2	Sample 3	Average	Deviation
Level (dB)	114.00	113.99	113.99	113.98	113.98	-0.01
Distortion (%)	< 4.00	0.42	0.41	0.41	0.42	0.42
Frequency (Hz)	1000.0	990.3	990.4	990.3	990.4	-9.6
						Tolerance
						±0.75 ±4.00 ±20.0
						0.11 dB 0.13 % 0.1 Hz

Functionality Results	
Function	Result
Keypad	
Battery Power	
Display	
Communication	
2 way IR link	
Clock	

ภาคผนวก จ

หนังสืออนุญาตขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
จากกรมโรงงานอุตสาหกรรม



ที่ อภ ๐๓๑๐(๑)/ ๑๑ ๐๑ ๖

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒ ๐ กรกฎาคม ๒๕๖๖

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท ชีคอต จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารเคมีของห้องปฏิบัติการวิเคราะห์เอกชน

ลงวันที่ ๗ เมษายน ๒๕๖๖

สิ่งที่ส่งมาด้วย ๑. รายชื่อผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑ แผน

๒. รายชื่อเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑ แผน

๓. ของขายสารเคมีซึ่งได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๙ แผน

ตามหนังสือที่อ้างถึง บริษัท ชีคอต จำกัด ขอต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ๖-๒๓๙ สถานที่ตั้งเลขที่ ๒๓๙ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท ชีคอต จำกัด ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑๐ ราย ตามสิ่งที่ส่งมาด้วย ๑

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๓๘ ราย ตามสิ่งที่ส่งมาด้วย ๒

ค. ของขายสารเคมีซึ่งได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย น้ำใต้ดิน อากาศเสีย สิ่งปฏิกูล หรือวัสดุที่ไม่ใช่แล้ว และดิน ตามสิ่งที่ส่งมาด้วย ๓

หนังสือฉบับนี้จะหมดอายุในวันที่ ๒ พฤษภาคม ๒๕๖๙ หากประสงค์จะต่ออายุหนังสือ

รับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบการค้าขอต่อ

กรมโรงงานอุตสาหกรรมภายใน ๓๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

ซึ่งคำขอต่ออายุดังกล่าวขอรับได้ที่กรมโรงงานอุตสาหกรรม ทั้งนี้ สามารถยื่นคำขอผ่านระบบอิเล็กทรอนิกส์ได้

ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรม

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นายประสม ดำรงพงษ์)

ผู้อำนวยการวิจัยและเตือนภัยเคมีอันตราย

ปฏิตะพรหมเพณียกิจกรมโรงงานอุตสาหกรรม

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๙๙

ไปรษณีย์อิเล็กทรอนิกส์ seraban@dw.mail.go.th

“อุตสาหกรรมก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว”



เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท ชีคอต จำกัด

เลขทะเบียน ๖-๒๓๙

ที่ อภ ๐๓๑๐(๑)/ ๑๑ ๐๑ ๖

ลงวันที่ ๒ ๐ กรกฎาคม ๒๕๖๖

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑๐ ราย

๑) นายขรรชัย เกียรติไกรอุดม

ทะเบียนเลขที่ ๖-๒๓๙-ค-๐๐๐๒

๒) นางสมฤดี เกียรติไกรอุดม

ทะเบียนเลขที่ ๖-๒๓๙-ค-๐๐๐๓

๓) นางอรุณา ทิพรัักษ์

ทะเบียนเลขที่ ๖-๒๓๙-ค-๐๐๐๔

๔) นางสาวเจมพูดา อินทร์

ทะเบียนเลขที่ ๖-๒๓๙-ค-๐๐๐๕

๕) นางสาวปรีดา สมใจ

ทะเบียนเลขที่ ๖-๒๓๙-ค-๐๐๐๖

๖) นางสาวอริญญา มาตา

ทะเบียนเลขที่ ๖-๒๓๙-ค-๐๐๐๗

๗) นางสาวอดาวรีย์ วงศ์เจริญ

ทะเบียนเลขที่ ๖-๒๓๙-ค-๐๐๐๘

๘) นางสาวณัฏฐา เกดะวันดี

ทะเบียนเลขที่ ๖-๒๓๙-ค-๐๐๐๙

๙) นางสาวริสา ภูวสวรรค์ชัย

ทะเบียนเลขที่ ๖-๒๓๙-ค-๐๐๑๐

๑๐) นางสาวศิริวรรณ นิมสง่า

ทะเบียนเลขที่ ๖-๒๓๙-ค-๐๐๑๑

วิภา

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท ซีคอน จำกัด
เลขทะเบียน ๖-๒๓๙

ที่ อภ ๐๓๑๐(๑)/ ๑๑ ๐๑ ๖ ลงวันที่ ๒๐ กรกฎาคม ๒๕๖๖

ขอขยายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๕๕ รายการ

น้ำเสีย จำนวน 45 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
2	Arsenic	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ⁽⁴⁾ 2) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
3	Barium	1) Digestion, Direct Nitrous Oxide-Acetylene Flame Method ⁽⁴⁾ 2) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
4	α-BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
5	β-BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
6	δ-BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
7	γ-BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท ซีคอน จำกัด
เลขทะเบียน ๖-๒๓๙

ที่ อภ ๐๓๑๐(๑)/ ๑๑ ๐๑ ๖ ลงวันที่ ๒๐ กรกฎาคม ๒๕๖๖

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๓๘ ราย

๑) นางสาวสุดาพร สุมาตร	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๐๑
๒) นางสาวสุธาทิพย์ เทียนเตี้ย	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๐๓
๓) นางสาวสุนันทา สิริคุณานนท์	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๐๔
๔) นายบวร ตี้อยะ	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๐๕
๕) นางสาวเกศรินทร์ วรเดชาวิทยา	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๐๖
๖) นายอนันต์ พินันนา	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๐๗
๗) นายชิดพล สมประสงค์	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๐๘
๘) นางสาวศศิธร พรหมประเสริฐ	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๐๙
๙) นายศิษะนนท์ กลวงษ์	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๑๐
๑๐) นางสาวอลิษา คณิรนามนท์	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๑๑
๑๑) นางสาวสิริวรรณ แก้วจิงดวง	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๑๒
๑๒) นางสาวปัทมวรรณ สุวรรณโรจน์	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๑๓
๑๓) นางสาวกนิษฐา เจริญเชื้อ	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๑๔
๑๔) นายจักรกานต์ ประมาะเขต	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๑๕
๑๕) นายทอง เสงขลกุล	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๑๖
๑๖) นางสาวกชญา จันทุม	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๑๗
๑๗) นางสาวพรนภา บุตรธรรม	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๑๘
๑๘) นางสาวศิริณี อาจปลิว	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๑๙
๑๙) นายธนิต ช่างล้อ	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๒๐
๒๐) นางสาวพัชรา สมานอันท์	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๒๑
๒๑) นางสาวจุฑาทิรัตน์ แจ่มเรือน	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๒๒
๒๒) นางสาวณิศา ก้อยอ่อน	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๒๓
๒๓) นายกิตติพงศ์ ณะกิจสุข	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๒๔
๒๔) นายธีรวัฒน์ โคตรคำหาญ	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๒๕
๒๕) นายชนะพล อัครผล	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๒๖
๒๖) นางสาวพิศสุดา วรรณการ	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๒๗
๒๗) นายสิทธิชัย สว่างวงศ์ไชย	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๒๘
๒๘) นายพิษณุ สีนามเพ็ง	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๒๙
๒๙) นายรัตนชัย ขอบท่ากิจ	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๓๐
๓๐) นายธนาวุฒิ ด่านแสง	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๓๑
๓๑) นายอัฐชัย ไชยโคตร	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๓๒
๓๒) นายอัฐดนัย ฤกษ์ละโสม	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๓๓
๓๓) นายศุภชัย สุขใหม่	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๓๔
๓๔) นายธอมภูวน เทียมหมัด	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๓๕
๓๕) นางสาวสุภาวดี บัวแก้ว	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๓๖
๓๖) นางสาวมาลีรัตน์ ฮาแว	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๓๗
๓๗) นางสาววริยา ปังอิมบุรณ์	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๓๘
๓๘) นางสาวอลิษา อินริย์	ทะเบียนเลขที่ ๖-๒๓๙-จ-๐๐๓๙

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
8	Biochemical Oxygen Demand	1) 5-Day BOD Test, Azide Modification Method ⁽⁴⁾ 2) 5-Day BOD Test, Membrane Electrode Method ⁽⁴⁾
9	Cadmium	1) Digestion, Direct Air-Acetylene Flame Method ⁽⁴⁾ 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ⁽⁴⁾ 3) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
10	Chemical Oxygen Demand	1) Open Reflux, Titrimetric method ⁽⁴⁾ 2) Closed Reflux, Colorimetric method ⁽⁴⁾ 3) Closed Reflux, Titrimetric Method ⁽⁴⁾
11	Chlordane	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
12	Chromium	1) Digestion, Direct Air-Acetylene Flame Method ⁽⁴⁾ 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ⁽⁴⁾ 3) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
13	Color	ADMI Weighted-Ordinate Spectrophotometric Method ⁽⁴⁾
14	Copper	1) Digestion, Direct Air-Acetylene Flame Method ⁽⁴⁾ 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ⁽⁴⁾ 3) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
15	Cyanide	Distillation, Colorimetric method ⁽⁴⁾
16	4,4'-DDD	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
17	4,4'-DDE	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
18	4,4'-DDT	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
19	Dieldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
20	Endosulfan I	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
21	Endosulfan II	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
22	Endosulfan Sulfate	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
23	Endrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
24	Endrin Aldehyde	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
25	Formaldehyde	Distillation, Colorimetric Method ^(a)
26	Free Chlorine	1) Iodometric Method ^(a) 2) DPD Colorimetric Method ^(a)
27	Heptachlor	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^(a) 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(a)
28	Heptachlor epoxide	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^(a) 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(a)
29	Hexavalent Chromium	1) Colorimetric Method ^(a) 2) Extraction, Air-Acetylene Flame Method ^(a)
30	Lead	1) Digestion, Direct Air-Acetylene Flame Method ^(a) 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^(a) 3) Digestion, Inductively Coupled Plasma Method ^(a)
31	Manganese	1) Digestion, Direct Air-Acetylene Flame Method ^(a) 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^(a) 3) Digestion, Inductively Coupled Plasma Method ^(a)
32	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^(a)
33	Methoxychlor	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^(a) 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(a)
34	Nickel	1) Digestion, Direct Air-Acetylene Flame Method ^(a) 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^(a)

3) Digestion...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
35	Oil & Grease	3) Digestion, Inductively Coupled Plasma Method ^(a) 1) Liquid-Liquid, Partition-Gravimetric Method ^(a) 2) Soxhlet Extraction Method ^(a)
36	pH	Electrometric Method ^(a)
37	Phenols	1) Distillation, Chloroform Extraction Method ^(a) 2) Distillation, Direct Photometric Method ^(a)
38	Selenium	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^(a) 2) Digestion, Inductively Coupled Plasma Method ^(a)
39	Sulfide	1) Iodometric method ^(a) 2) Methylene blue method ^(a)
40	Temperature	Laboratory and Field Methods ^(a)
41	Total Dissolved Solids	Dried at 180 °C ^(a)
42	Total Kjeldahl Nitrogen	1) Macro Kjeldahl Method ^(a) 2) Semi-Micro Kjeldahl Method ^(a)
43	Total Suspended Solids	Dried at 103-105 °C ^(a)
44	Trivalent Chromium	1) Digestion, Direct Air-Acetylene Flame Method; Colorimetric Method; Calculation ^(a) 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method; Colorimetric Method; Calculation ^(a) 3) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation ^(a)
45	Zinc	1) Digestion, Direct Air-Acetylene Flame Method ^(a) 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^(a) 3) Digestion, Inductively Coupled Plasma Method ^(a)

3) Digestion...

น้ำใต้ดิน จำนวน 125 รายการ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
1	Acenaphthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
2	Acetone	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
3	Aldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
4	Anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
5	Antimony	Digestion, Inductively Coupled Plasma Spectrometric Method ⁽⁴⁾
6	Arsenic	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ⁽⁴⁾ 2) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
7	Atrazine	Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾
8	Barium	1) Digestion, Direct Nitrous Oxide-Acetylene Flame Method ⁽⁴⁾ 2) Digestion, Inductively Coupled Plasma Spectrometric Method ⁽⁴⁾
9	Benz(a)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
10	Benzene	Purge and Trap Gas Chromatographic/Mass spectrometric Method ⁽⁴⁾
11	Benzo(b)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
12	Benzo(k)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾ <i>รวม</i>

13 Benzoic acid...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
13	Benzoic acid	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
14	Benzo(a)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
15	Benzo(g,h,i)perylene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
16	Beryllium	Digestion, Inductively Coupled Plasma Spectrometric Method ⁽⁴⁾
17	Bis(2-chloroethyl)ether	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
18	Bis(2-ethylhexyl)phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
19	Bromodichloromethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
20	Bromoform	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
21	Butanol	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
22	Butyl benzyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
23	Cadmium	1) Digestion, Direct Air-Acetylene Flame Method ⁽⁴⁾ 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ⁽⁴⁾
24	Carbazole	3) Digestion, Inductively Coupled Plasma Spectrometric Method ⁽⁴⁾
25	Carbon disulfide	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
26	Carbon tetrachloride	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾ Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾ <i>รวม</i>

27 Chlordane...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
27	Chlordane	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
28	p-Chloroaniline	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
29	Chlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
30	Chlorodibromomethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
31	Chloroform	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
32	2-Chlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
33	Chromium	1) Digestion, Direct Air-Acetylene Flame Method ⁽⁴⁾ 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ⁽⁴⁾ 3) Digestion, Inductively Coupled Plasma Spectrometric Method ⁽⁴⁾
34	Chromium (III)	1) Digestion, Direct Air-Acetylene Flame Method; Colorimetric Method; Calculation ⁽⁴⁾ 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method; Colorimetric Method; Calculation ⁽⁴⁾ 3) Digestion, Inductively Coupled Plasma Spectrometric Method; Colorimetric Method; Calculation ⁽⁴⁾
35	Chromium (VI)	1) Colorimetric Method ⁽⁴⁾
36	Chrysene	2) Extraction, Air-Acetylene Flame Method ⁽⁴⁾ Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
37	Cyanide	1) Distillation, Titrimetric Method ⁽⁴⁾ 2) Distillation, Colorimetric Method ⁽⁴⁾
38	2,4-D	Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾
39	DDD	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
40	DDE	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
41	DDT	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
42	Dibenz(a,h)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
43	Di-n-butyl phthalate	Mass Spectrometric Method ⁽⁴⁾ Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
44	1,2-Dichlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
45	1,3-Dichlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
46	1,4-Dichlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
47	3,3'-Dichlorobenzidine	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
48	1,1-Dichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
49	1,2-Dichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾

ลำดับที่	สารเคมีพิษ	วิธีวิเคราะห์
50	1,1-Dichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
51	cis-1,2-Dichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
52	trans-1,2-Dichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
53	2,4-Dichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
54	1,2-Dichloropropane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
55	1,3-Dichloropropane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
56	1,3-Dichloropropene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
57	Dieldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
58	Diethyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
59	2,4-Dimethylphenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
60	2,4-Dinitrophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
61	2,4-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
62	2,6-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
63	Di-n-Octyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
64	Endosulfan	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾

2) Liquid-Liquid...

ลำดับที่	สารเคมีพิษ	วิธีวิเคราะห์
65	Endrin	2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾ 1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
66	Ethylbenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
67	Fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
68	Fluorene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
69	Heptachlor	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
70	Heptachlor epoxide	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
71	Hexachlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
72	Hexachloro-1,3-butadiene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
73	n-Hexane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
74	α-HCH	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾ 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
75	β-HCH	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾

3mg/L

2) Liquid-Liquid...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
76	γ -HCH	2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾ 1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾
77	Hexachlorocyclopentadiene	2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾ Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
78	Hexachloroethane	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
79	Indeno(1,2,3-cd)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
80	Isophorone	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
81	Lead	1) Digestion, Direct Air-Acetylene Flame Method ⁽⁴⁾ 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ⁽⁴⁾ 3) Digestion, Inductively Coupled Plasma Spectrometric Method ⁽⁴⁾
82	Manganese	1) Digestion, Direct Air-Acetylene Flame Method ⁽⁴⁾ 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ⁽⁴⁾ 3) Digestion, Inductively Coupled Plasma Spectrometric Method ⁽⁴⁾
83	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ⁽⁴⁾
84	Methanol	Purge and Trap Gas Chromatographic/Mass spectrometric Method ⁽⁴⁾
85	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾
86	Methyl bromide	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾

87 Methylene chloride...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
87	Methylene chloride	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
88	2-Methylphenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
89	2-Methylnaphthalene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
90	Methyl tert-butyl ether	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
91	Naphthalene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
92	Nickel	1) Digestion, Direct Air-Acetylene Flame Method ⁽⁴⁾ 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ⁽⁴⁾ 3) Digestion, Inductively Coupled Plasma Spectrometric Method ⁽⁴⁾
93	Nitrobenzene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
94	N-Nitrosodiphenylamine	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
95	N-Nitrosodi-n-propylamine	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽⁴⁾
96	Polychlorinated Biphenyls - PCB-1016 - PCB-1221 - PCB-1232 - PCB-1242 - PCB-1248 - PCB-1254 - PCB-1260	Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾
97	Pentachlorophenol	Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾
98	pH	Electrometric method ⁽⁴⁾

99 Phenanthrene...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
99	Phenanthrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(a)
100	Phenol	1) Distillation, Chloroform Extraction Method ^(a) 2) Distillation, Direct Photometric Method ^(a) 3) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(a)
101	Pyrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(a)
102	Selenium	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^(a) 2) Digestion, Inductively Coupled Plasma Method ^(a)
103	Silver	1) Digestion, Direct Air-Acetylene Flame Method ^(a) 2) Digestion, Inductively Coupled Plasma Method ^(a)
104	Styrene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^(a)
105	1,1,2,2-Tetrachloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^(a)
106	Tetrachloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^(a)
107	Toluene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^(a)
108	TPH (C ₅ -C ₉)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ⁽¹²²⁵⁾
109	TPH (C ₅ -C ₁₆)	1) Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^(9,21) 2) Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass spectrometric Method ^(9,25)
110	TPH (C ₁₆ -C ₃₂)	1) Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^(9,21) <i>simply</i>

2) Separatory...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
111	1,2,4-Trichlorobenzene	2) Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass spectrometric Method ^(9,25) Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^(a)
112	1,1,1-Trichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^(a)
113	1,1,2-Trichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^(a)
114	Trichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^(a)
115	2,4,5-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(a)
116	2,4,6-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(a)
117	1,3,5-Trimethylbenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^(a)
118	Vanadium	Digestion, Inductively Coupled Plasma Spectrometric Method ^(a)
119	Vinyl acetate	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^(a)
120	Vinyl chloride	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^(a)
121	m-Xylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^(a)
122	o-Xylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^(a)
123	p-Xylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^(a)
124	Xylene (Total)	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^(a) <i>simply</i>

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
125	Zinc	1) Digestion, Direct Air-Acetylene Flame Method ⁽⁴⁾ 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ⁽⁴⁾ 3) Digestion, Inductively Coupled Plasma Spectrometric Method ⁽⁴⁾

อากาศเสีย (ปล่อยระบาย) จำนวน 27 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Antimony	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ⁽⁵⁾ 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁵⁾
2	Arsenic	1) Isokinetic Sampling, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ⁽⁵⁾ 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁵⁾
3	Beryllium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁵⁾
4	Cadmium	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ⁽⁵⁾ 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁵⁾
5	Carbon monoxide	Instrumental Analyzer Method ⁽⁵⁾
6	Chlorine	1) Absorption Sampling, Ion Chromatographic Method ⁽⁵⁾ 2) Isokinetic Sampling, Ion Chromatographic Method ⁽⁵⁾
7	Chromium	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ⁽⁵⁾ 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁵⁾

8 Cobalt...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
8	Cobalt	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁵⁾
9	Copper	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ⁽⁵⁾ 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁵⁾
10	Cresol	Absorption Sampling, Gas Chromatographic Method ⁽⁵⁾
11	Dioxin/Furans	Isokinetic Sampling ⁽⁵⁾
12	Hydrogen chloride	1) Absorption Sampling, Ion Chromatographic Method ⁽⁵⁾ 2) Isokinetic Sampling, Ion Chromatographic Method ⁽⁵⁾
13	Hydrogen Fluoride	1) Absorption Sampling, Ion Chromatographic Method ⁽⁵⁾ 2) Isokinetic Sampling, Ion Chromatographic Method ⁽⁵⁾
14	Hydrogen Sulfide	Absorption Sampling, Iodometric Method ⁽⁵⁾
15	Lead	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ⁽⁵⁾ 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁵⁾
16	Manganese	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ⁽⁵⁾ 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁵⁾
17	Mercury	Isokinetic Sampling, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ⁽⁵⁾
18	Nickel	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ⁽⁵⁾ 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ⁽⁵⁾

19 Opacity...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
19	Opacity	Ringmann's Method ^[2]
20	Oxides of Nitrogen	1) Absorption Sampling, Phenoldisulfonic acid Method ^[5] 2) Absorption Sampling, Ion Chromatographic Method ^[5] 3) Instrumental Analyzer Method ^[5]
21	Selenium	1) Isokinetic Sampling, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
22	Sulfur dioxide	1) Isokinetic Sampling, Barium-Thorin Titrimetric Method ^[5] 2) Absorption Sampling, Barium-Thorin Titrimetric Method ^[5] 3) Instrumental Analyzer Method ^[5]
23	Sulfuric acid	Isokinetic Sampling, Barium-Thorin Titrimetric Method ^[5]
24	Tin	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
25	Total Suspended Particulate	1) Isokinetic Sampling, Gravimetric Method ^[5] 2) Paired Train, Isokinetic Sampling, Gravimetric Method ^[5]
26	Vanadium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
27	Xylene	1) Adsorption Sampling, Gas Chromatographic Method ^[5] 2) Adsorption Sampling, Gas Chromatographic/Mass Spectrometric Method ^[5]

สิ่งปฏิกูล...

สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน 34 รายการ

ลำดับที่	สารเคมี	วิธีวิเคราะห์
1	Aldrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,6,9,23] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,6,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,23] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
2	Antimony	1) Waste Extraction, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[7,16] 4) Digestion, Inductively Coupled Plasma Method ^[7,14]
3	Arsenic	1) Waste Extraction, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[7,16] 4) Digestion, Inductively Coupled Plasma Method ^[7,14]
4	Barium	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^[1,6,15]

2) Waste Extraction...

ลำดับที่	สารเคมีพิษ	วิธีวิเคราะห์
5	Beryllium	2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1.6.14) 3) Digestion, Flame Atomic Absorption Spectrometric Method ^(7.15) 4) Digestion, Inductively Coupled Plasma Method ^(7.14) 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1.6.14) 2) Digestion, Inductively Coupled Plasma Method ^(7.14)
6	Cadmium	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^(1.6.15) 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1.6.14) 3) Digestion, Flame Atomic Absorption Spectrometric Method ^(7.15) 4) Digestion, Inductively Coupled Plasma Method ^(7.14)
7	Chlordane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^(3.9.22) 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1.9.27) 3) Soxhlet Extraction, Gas Chromatographic Method ^(10.22) 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10.27)
8	Chromium	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^(1.6.15) 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1.6.14)

3) Digestion...

ลำดับที่	สารเคมีพิษ	วิธีวิเคราะห์
9	Chromium (III)	3) Digestion, Flame Atomic Absorption Spectrometric Method ^(7.15) 4) Digestion, Inductively Coupled Plasma Method ^(7.14) 1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method; Waste Extraction, Colorimetric Method; Calculation ^(1.6.15,17) 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method; Waste Extraction, Colorimetric Method; Calculation ^(1.6.14,17) 3) Digestion, Flame Atomic Absorption Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation ^(7.15,17) 4) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation ^(7.15,17) 1) Waste Extraction, Colorimetric Method ^(1.17) 2) Alkaline Digestion, Colorimetric Method ^(8.17) 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1.6.14) 2) Digestion, Inductively Coupled Plasma Method ^(7.14) 1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^(1.6.15) 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1.6.14) 3) Digestion, Flame Atomic Absorption Spectrometric Method ^(7.15) 4) Digestion, Inductively Coupled Plasma Method ^(7.14)
10	Chromium (VI)	
11	Cobalt	
12	Copper	

13 2,4-D...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
13	2,4-D	1) Waste Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1,23) 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽²³⁾
14	DDD	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^(10,22) 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1,9,27) 3) Soxhlet Extraction, Gas Chromatographic Method ^(10,22) 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
15	DDE	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^(1,9,22) 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1,9,27) 3) Soxhlet Extraction, Gas Chromatographic Method ^(10,22) 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1,9,27)
16	DDT	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^(1,9,22) 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1,9,27) 3) Soxhlet Extraction, Gas Chromatographic Method ^(10,22) 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1,9,27)

17 Dieldrin...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
17	Dieldrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^(1,9,22) 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1,9,27) 3) Soxhlet Extraction, Gas Chromatographic Method ^(10,22) 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
18	Endrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^(1,9,22) 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1,9,27) 3) Soxhlet Extraction, Gas Chromatographic Method ^(10,22) 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
19	Heptachlor	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^(1,9,22) 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1,9,27) 3) Soxhlet Extraction, Gas Chromatographic Method ^(10,22) 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
20	Lead	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^(1,6,13) 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1,6,14) <i>3mg/l</i>

3) Digestion...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
21	Lindane	3) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15) 4) Digestion, Inductively Coupled Plasma Method ^(7,14) 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^(1,9,22) 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1,9,27) 3) Soxhlet Extraction, Gas Chromatographic Method ^(10,22) 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27) 1) Waste Extraction, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^(1,18) 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1,6,14) 3) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^(1,9) 4) Digestion, Inductively Coupled Plasma Method ^(7,14) 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^(1,9,22) 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1,9,27) 3) Soxhlet Extraction, Gas Chromatographic Method ^(10,22) 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
22	Mercury	
23	Methoxychlor	

24 Molybdenum...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
24	Molybdenum	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1,6,14) 2) Digestion, Inductively Coupled Plasma Method ^(7,14) 1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^(1,6,15) 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1,6,14) 3) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15) 4) Digestion, Inductively Coupled Plasma Method ^(7,14) 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^(1,9,23) 2) Soxhlet Extraction, Gas Chromatographic Method ^(10,23) 1) Waste Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1,25) 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ⁽²⁵⁾ Electrometric Method ^(31,32) 1) Waste Extraction, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^(1,6,20) 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1,6,14) 3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^(7,20)
25	Nickel	
26	Polychlorinated Biphenyls - Aroclor 1016 - Aroclor 1221 - Aroclor 1232 - Aroclor 1242 - Aroclor 1248 - Aroclor 1254 - Aroclor 1260	
27	Pentachlorophenol	
28	pH	
29	Selenium	

4) Digestion...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
30	Silver	4) Digestion, Inductively Coupled Plasma Method ^(7.14) 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1.6.14) 2) Digestion, Inductively Coupled Plasma Method ^(7.14)
31	Thallium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1.6.14) 2) Digestion, Inductively Coupled Plasma Method ^(7.14)
32	Trichloroethylene	1) Waste Extraction, Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(1.12.26) 2) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(12.26)
33	Vanadium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1.6.14) 2) Digestion, Inductively Coupled Plasma Method ^(7.14)
34	Zinc	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^(3.6.15) 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1.6.14) 3) Digestion, Flame Atomic Absorption Spectrometric Method ^(7.15) 4) Digestion, Inductively Coupled Plasma Method ^(7.14)

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ลำดับที่	สารเคมี	วิธีวิเคราะห์
1	Acenaphthene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10.27)

2. Acetone...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
2	Acetone	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13.26)
3	Aldrin	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11.22) 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11.27)
4	Anthracene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10.27)
5	Antimony	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^(7.16) 2) Digestion, Inductively Coupled Plasma Method ^(7.14)
6	Arsenic	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^(7.16) 2) Digestion, Inductively Coupled Plasma Method ^(7.14)
7	Atrazine	Ultrasonic Extraction, Gas Chromatographic Method ^(11.24)
8	Barium	1) Digestion, Flame Atomic Absorption Spectrometric Method ^(7.15) 2) Digestion, Inductively Coupled Plasma Method ^(7.14)
9	Benz(a)anthracene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10.27)
10	Benzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13.26)
11	Benzo(b)fluoranthene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10.27)
12	Benzo(k)fluoranthene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10.27)
13	Benzoic acid	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11.27)

14. Benzo(a)pyrene...

ลำดับที่	สารเคมี	วิธีการ
14	Benzo(a)pyrene	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(10,27)
15	Benzo(g,h,i)perylene	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(10,27)
16	Beryllium	Digestion, Inductively Coupled Plasma Method ^(7,14)
17	Bis(2-chloroethyl)ether	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(10,27)
18	Bis(2-ethylhexyl)phthalate	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(10,27)
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^(13,26)
20	Bromoform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^(13,26)
21	Butanol	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^(13,26)
22	Butyl benzyl phthalate	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(10,27)
23	Cadmium	1) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15) 2) Digestion, Inductively Coupled Plasma Method ^(7,14)
24	Carbazole	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(10,27)
25	Carbon disulfide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^(13,26)
26	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^(13,26)
27	Chlordane	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,22) 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(11,27)

ลำดับที่	สารเคมี	วิธีการ
28	p-Chloroaniline	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(10,27)
29	Chlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^(13,26)
30	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^(13,26)
31	Chloroform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^(13,26)
32	2-Chlorophenol	Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(11,27)
33	Chromium	1) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15) 2) Digestion, Inductively Coupled Plasma Method ^(7,14)
34	Chromium (III)	1) Digestion, Flame Atomic Absorption Spectrometric Method; Colorimetric Method; Calculation ^(7,15,17) 2) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation ^(7,14,17)
35	Chromium (VI)	Alkaline Digestion, Colorimetric Method ^(8,17)
36	Chrysene	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(10,27)
37	Cyanide	1) Extraction, Distillation, Titrimetric Method ^(28,29,30) 2) Extraction, Distillation, Colorimetric Method ^(28,29,30)
38	2,4-D	Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽²⁴⁾
39	DDD	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,22) 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(11,27)

ลำดับที่	สารเคมี	วิธีวิเคราะห์
40	DDE	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,27) 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
41	DDT	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,27) 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
42	Dibenz(a,h)anthracene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
43	Di-n-butyl phthalate	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
44	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
45	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
46	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
47	3,3'-Dichlorobenzidine	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
48	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
49	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
50	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
51	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
52	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
53	2,4-Dichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)

54 1,2-Dichloropropane...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
57	Dieldrin	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,27) 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
58	Diethyl phthalate	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
59	2,4-Dimethylphenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
60	2,4-Dinitrophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
61	2,4-Dinitrotoluene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
62	2,6-Dinitrotoluene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
63	Di-n-Octyl phthalate	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
64	Endosulfan	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,27) 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
65	Endrin	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,27) 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
66	Ethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)

67 Fluoranthene...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
67	Fluoranthene	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(10,27)
68	Fluorene	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(10,27)
69	Heptachlor	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,22) 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(11,27)
70	Heptachlor epoxide	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,22) 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(11,27)
71	Hexachlorobenzene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
73	n-Hexane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^(13,26)
74	α-HCH	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,22) 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(11,27)
75	β-HCH	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,22) 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(11,27)
76	γ-HCH	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,22) 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(11,27)
77	Hexachlorocyclopentadiene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27) <i>Spmd</i>

78 Hexachloroethane...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
78	Hexachloroethane	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
79	Indend(1,2,3-cd)pyrene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
80	Isophorone	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27)
81	Lead	1) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15) 2) Digestion, Inductively Coupled Plasma Method ^(7,14)
82	Manganese	1) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15) 2) Digestion, Inductively Coupled Plasma Method ^(7,14)
83	Mercury	1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ⁽¹⁹⁾ 2) Digestion, Inductively Coupled Plasma Method ^(7,14)
84	Methanol	Ultrasonic Extraction, Direct Aqueous Injection, Gas Chromatographic Method ^(11,21)
85	Methoxychlor	1) Ultrasonic Extraction, Gas Chromatographic Method ^(11,22) 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(11,27)
86	Methyl bromide	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
87	Methylene chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
88	2-Methylphenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
89	2-Methylnaphthalene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27) <i>Spmd</i>

90 Methyl tert-butyl ether...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
90	Methyl tert-butyl ether	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
91	Naphthalene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
92	Nickel	1) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
93	Nitrobenzene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
94	N-Nitrosodiphenylamine	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
95	N-Nitrosodi-n-propylamine	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
96	Polychlorinated Biphenyls - Aroclor 1016 - Aroclor 1221 - Aroclor 1232 - Aroclor 1242 - Aroclor 1248 - Aroclor 1254 - Aroclor 1260	Soxhlet Extraction, Gas Chromatographic Method ^[10,29]
97	Pentachlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[24]
98	Phenanthrene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
99	Phenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
100	Pyrene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
101	Selenium	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[7,20]

2) Digestion...

ลำดับที่	สารเคมี	วิธีวิเคราะห์
102	Silver	2) Digestion, Inductively Coupled Plasma Method ^[7,14] 1) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
103	Styrene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
104	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
105	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
106	Toluene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
107	TPH (C ₅ -C ₆)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
108	TPH (C ₇ -C ₁₆)	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,21] 2) Soxhlet Extraction, Gas Chromatographic/Mass spectrometric Method ^[10,26]
109	TPH (C ₅ -C ₃₃)	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,21] 2) Soxhlet Extraction, Gas Chromatographic/Mass spectrometric Method ^[10,26]
110	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
111	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
112	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
113	Trichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]


114 2,4,5-Trichlorophenol...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
114	2,4,5-Trichlorophenol	Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(11,27)
115	2,4,6-Trichlorophenol	Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^(11,27)
116	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
117	Vanadium	Digestion, Inductively Coupled Plasma Method ^(7,14)
118	Vinyl acetate	Purge and Trap, Gas Chromatographic/Mass spectrometric Method ^(13,26)
119	Vinyl chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
120	m-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
121	o-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
122	p-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
123	Xylene (Total)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
124	Zinc	1) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15) 2) Digestion, Inductively Coupled Plasma Method ^(7,14) Simple


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ที่ อก ๐๓๑๐(๑)/ ๕๐๕๔

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๒ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๗ พฤษภาคม ๒๕๖๗

เรื่อง เปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท ซีคोट จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๒๑ พฤษภาคม ๒๕๖๗

ตามคำขอที่อ้างถึง บริษัท ซีคोट จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๓๙
สถานที่ตั้งเลขที่ ๒๓๙ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร ขอเปลี่ยนแปลงบุคลากร
ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์
จำนวน ๒ ราย ได้แก่

๑) นายวัชรกานต์ ประมาคะเต

ทะเบียนเลขที่ ว-๒๓๙-จ-๐๐๑๕

๒) นายรัตนชัย ชอบทำกิจ

ทะเบียนเลขที่ ว-๒๓๙-จ-๐๐๓๐

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นายพรยศ กลั่นกรอง)

รองอธิบดี ปฏิบัติราชการแทน

อธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๙๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



ภาคผนวก ข

ใบรับรองความสามารถห้องปฏิบัติการและขอขยายการรับรอง
ห้องปฏิบัติการทดสอบ ตามมาตรฐาน ISO/IEC 17025
จากสำนักงานมาตรฐานอุตสาหกรรม (สมอ.)



แบบ กขช./ผอ.๒
Form NSC/TISI 2

ใบรับรองเลขที่ 24-LB0026
(Certificate No.)

ใบรับรองระบบงาน

(Certificate of Accreditation)

อาศัยอำนาจตามความในพระราชบัญญัติการมาตรฐานแห่งชาติ พ.ศ. ๒๕๕๑
(By Virtue of National Standardization Act B.E. 2551 (2008))

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
(Secretary-General, Thai Industrial Standards Institute)

ออกใบรับรองฉบับนี้ให้
(Issues this certificate to)

บริษัท ซีคอบ จำกัด ฝ่ายห้องปฏิบัติการทดสอบด้านสิ่งแวดล้อม
(Secot Company Limited, Environmental Laboratory Division)

ตั้งอยู่เลขที่
(Address)

๒๓๔ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร
(239 Rimklongprapa Road, Bangsue, Bangkok)

ได้รับการรับรองความสามารถ
(Certificate of competence)

ตามมาตรฐานเลขที่ มอก. ๑๗๐๒๕ - ๒๕๖๑
(Standard No. TIS 17025-2561 (2018) (ISO/IEC 17025: 2017))

ข้อกำหนดทั่วไปว่าด้วยความสามารถของ ห้องปฏิบัติการทดสอบและห้องปฏิบัติการสอบเทียบ
(General requirements for the competence of testing and calibration laboratories)

หมายเลขการรับรองที่ ทดสอบ ๐๓๔๔
(Accreditation No. Testing 0394)

โดยมีรายละเอียดของข้อมูลที่ได้ใบรับรอง แสดงไว้ใน QR CODE และ www.tisi.go.th
(Details of the scheme and scope of the certificate are shown in QR CODE and www.tisi.go.th)

ออกให้ ณ วันที่ ๖ ธันวาคม พ.ศ. ๒๕๖๖
(Issue date : 6 December B.E. 2566 (2023))



(นายธีระศักดิ์ เฟื่องหลั่ง)
ผู้อำนวยการสำนักงานคณะกรรมการมาตรฐานแห่งชาติ

ปฏิบัติราชการแทน
เลขที่การสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

Signed by สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม (สมอ.)
Thai Industrial Standards Institute (TISI)
Date: 2024-12-06 08:43:44+07:00
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กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
(Ministry of Industry Thailand, Thai Industrial Standards Institute)

กระทรวงอุตสาหกรรมสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
(Ministry of Industry, Thai Industrial Standards Institute)

หน้า 1/9



รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ
(Scope of Accreditation for Testing)
ใบรับรองเลขที่ 24-LB0026
(Certification No. 24-LB0026)

บริษัท ซีคอบ จำกัด ฝ่ายห้องปฏิบัติการทดสอบด้านสิ่งแวดล้อม
(Secot Company Limited, Environmental Laboratory Division)

ชื่อห้องปฏิบัติการ
(Laboratory Name)

หมายเลขการรับรองที่
(Accreditation No.)

ฉบับที่ 02
(Issue No.02)

สถานภาพห้องปฏิบัติการ
(Laboratory status)

☒ ถาวร
(Permanent)

☐ ชั่วคราว
(Temporary)

ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566
(Valid from 30 October B.E.2566 (2023))

☐ นอกสถานที่
(Site)

☐ เคลื่อนที่
(Mobile)

ถึงวันที่ 8 กันยายน พ.ศ. 2571
(Until 8 September B.E.2571 (2028))

☐ หลายสถานที่
(Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
สาขาสิ่งแวดล้อม (environmental field) 1. น้ำและน้ำเสีย (water and wastewater)	- โลหะหนัก (heavy metals) • สารหนู (Arsenic, As) 0.000 5 mg/L ถึง 0.090 0 mg/L • สารหนู (Arsenic, As) 0.05 mg/L ถึง 4.50 mg/L • แบเรียม (Barium, Ba) 0.02 mg/L ถึง 4.50 mg/L • แคดเมียม (Cadmium, Cd) 0.01 mg/L ถึง 4.50 mg/L • โครเมียม (Chromium, Cr) 0.01 mg/L ถึง 4.50 mg/L	- Standard Methods for the Examination of Water and Wastewater, APHA , AWWA, WEF, 23 rd edition , 2017, Part 3030 F and Part 3114 C - Standard Methods for the Examination of Water and Wastewater, APHA , AWWA, WEF, 23 rd edition , 2017, Part 3030 E and Part 3120 B



รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026

(Certification No. 24-LB0026)

ฉบับที่ 02

(Issue No.02)

ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566

(Valid from)

✓ ถาวร

(Permanent)

สถานภาพห้องปฏิบัติการ

(Laboratory status)

นอกสถานที่

(Site)

ชั่วคราว

(Temporary)

เคลื่อนที่

(Mobile)

หลายสถานที่

(Multisite)

ถึงวันที่ 8 กันยายน พ.ศ. 2571

(Until) (8 September B.E.2571 (2028))



รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026

(Certification No. 24-LB0026)

ฉบับที่ 02

(Issue No.02)

ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566

(Valid from)

✓ ถาวร

(Permanent)

สถานภาพห้องปฏิบัติการ

(Laboratory status)

นอกสถานที่

(Site)

ชั่วคราว

(Temporary)

เคลื่อนที่

(Mobile)

หลายสถานที่

(Multisite)

ถึงวันที่ 8 กันยายน พ.ศ. 2571

(Until) (8 September B.E.2571 (2028))

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
สาขาสิ่งแวดล้อม (environmental field) 1. น้ำและน้ำเสีย (ต่อ) (water and wastewater) (cont.)	- โลหะหนัก (heavy metals) • ทองแดง (Copper, Cu) 0.02 mg/L ถึง 4.50 mg/L • เหล็ก (Iron, Fe) 0.05 mg/L ถึง 9.00 mg/L • ตะกั่ว (Lead, Pb) 0.03 mg/L ถึง 4.50 mg/L • แมงกานีส (Manganese, Mn) 0.01 mg/L ถึง 9.00 mg/L • นิกเกิล (Nickel, Ni) 0.01 mg/L ถึง 4.50 mg/L • สังกะสี (Zinc, Zn) 0.02 mg/L ถึง 9.00 mg/L	- Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, Part 3030 E and Part 3120 B

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
สาขาสิ่งแวดล้อม (environmental field) 1. น้ำและน้ำเสีย (ต่อ) (water and wastewater) (cont.) 2. บริเวณทำงาน (workplace)	- ซีโอดี (Chemical oxygen demand, COD) 100 mg/L ถึง 4 000 mg/L - ฝุ่นละอองรวม (Total dust) 0.10 mg/filter ถึง 2.00 mg/filter - ฝุ่นละอองขนาดเล็ก (Respirable dust) 0.10 mg/filter ถึง 2.00 mg/filter	- Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23 rd edition, 2017, Part 5220 D - NIOSH Manual of Analytical Methods (NMAM), method 0500, 4 th edition, 15 th August 1994 (Exclude Sampling) - NIOSH Manual of Analytical Methods (NMAM), method 0600, 4 th edition, 15 th January 1998 (Exclude Sampling)



รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026
(Certification No. 24-LB0026)

ฉบับที่ 02 (Issue No.02) ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566 (Valid from) (30 October B.E.2566 (2023)) ถึงวันที่ 8 กันยายน พ.ศ. 2571 (Until) (8 September B.E.2571 (2028))

สถานภาพห้องปฏิบัติการ (Laboratory status) ☒ถาวร (Permanent) ☐ชั่วคราว (Temporary) ☐เคลื่อนที่ (Mobile) ☐หลายสถานที่ (Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
สาขาสิ่งแวดล้อม (environmental field) 2. บริเวณทำงาน (ต่อ) (workplace) (cont.)	<ul style="list-style-type: none">เบนซีน (Benzene) 1.10 µg/tube ถึง 420 µg/tubeโทลูอีน (Toluene) 1.10 µg/tube ถึง 420 µg/tubeโทไซโรไซลีน (Total xylenes) 2.20 µg/tube ถึง 840 µg/tubeเมตา, พารา-ไซลีน (m, p- Xylene) 1.10 µg/tube ถึง 420 µg/tubeออร์โธ-ไซลีน (o- Xylene) 1.10 µg/tube ถึง 420 µg/tube	<ul style="list-style-type: none">- NIOSH Manual of Analytical Methods (NMAM), method 1501, 4th edition, 15th March 2003 (Exclude Sampling)
3. ปล่องระบายอากาศ (stack)	<ul style="list-style-type: none">ซัลเฟอร์ไดออกไซด์ (Sulfur dioxide) 1.00 mg/L ถึง 16 000 mg/L (solution)	<ul style="list-style-type: none">- US-EPA, Code of Federal Regulations, 40 CFR 60 appendix A, method 6, July 2019 (Exclude Sampling)



รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026
(Certification No. 24-LB0026)

ฉบับที่ 02 (Issue No.02) ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566 (Valid from) (30 October B.E.2566 (2023)) ถึงวันที่ 8 กันยายน พ.ศ. 2571 (Until) (8 September B.E.2571 (2028))

สถานภาพห้องปฏิบัติการ (Laboratory status) ☒ถาวร (Permanent) ☐ชั่วคราว (Temporary) ☐เคลื่อนที่ (Mobile) ☐หลายสถานที่ (Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
สาขาสิ่งแวดล้อม (environmental field) 3. ปล่องระบายอากาศ (ต่อ) (stack) (cont.)	<ul style="list-style-type: none">ไฮโดรเจนฟลูออไรด์ (Hydrogen fluoride) 5 µg/sample ถึง 400 µg/sampleไฮโดรเจนคลอไรด์ (Hydrogen chloride) 5 µg/sample ถึง 400 µg/sample	<ul style="list-style-type: none">- WI-7.2-1-22 based on US-EPA, Code of Federal Regulations, 40 CFR 60 appendix A, method 26, 2019 (Exclude Sampling)



รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ
(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026
(Certification No. 24-LB0026)

ฉบับที่ 02 (Issue No.02) ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566 (Valid from 30 October B.E.2566 (2023)) ถึงวันที่ 8 กันยายน พ.ศ. 2571 (Until 8 September B.E.2571 (2028))
สถานภาพห้องปฏิบัติการ ☒ ถาวร (Permanent) ☐ เคลื่อนที่ (Mobile)
นอกสถานที่ ☒ชั่วคราว (Temporary) ☐หลายสถานที่ (Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
สาขาสิ่งแวดล้อม (Environmental field) 4. บรรยากาศทั่วไป (ambient air)	<ul style="list-style-type: none">สารอินทรีย์ระเหยง่าย (Volatile organic compounds, VOCs)คลอโรอีthin (Chloroethene) 0.05 $\mu\text{g}/\text{m}^3$ ถึง 51.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv)1,3-บิวทาไดเ็น (1,3-butadiene) 0.04 $\mu\text{g}/\text{m}^3$ ถึง 44.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv)โบโรไมมีเทน (Boromethane) 0.08 $\mu\text{g}/\text{m}^3$ ถึง 77.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv)อะคลออีthin (Acrolein) 0.05 $\mu\text{g}/\text{m}^3$ ถึง 45.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv)	<ul style="list-style-type: none">WI-7.2-1-24 based on US EPA , Compendium Method TO-15 , EPA/625/R-96/010b, Second edition, January 1999



รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ
(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026
(Certification No. 24-LB0026)

ฉบับที่ 02 (Issue No.02) ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566 (Valid from 30 October B.E.2566 (2023)) ถึงวันที่ 8 กันยายน พ.ศ. 2571 (Until 8 September B.E.2571 (2028))
สถานภาพห้องปฏิบัติการ ☒ ถาวร (Permanent) ☐ เคลื่อนที่ (Mobile)
นอกสถานที่ ☒ชั่วคราว (Temporary) ☐หลายสถานที่ (Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
สาขาสิ่งแวดล้อม (Environmental field) 4. บรรยากาศทั่วไป (ต่อ) (ambient air) (cont.)	<ul style="list-style-type: none">สารอินทรีย์ระเหยง่าย (Volatile organic compounds, VOCs)อะครีโลไนไตรล์ (Acrylonitrile) 0.04 $\mu\text{g}/\text{m}^3$ ถึง 43.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv)ไดคลอโรมีเทน (Dichloromethane) 0.14 $\mu\text{g}/\text{m}^3$ to 69.00 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv)คาร์บอนไดซัลไฟด์ (Carbon disulfide) 0.06 $\mu\text{g}/\text{m}^3$ ถึง 62.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv)ไตรคลอโรมีเทน (Trichloromethane) 0.20 $\mu\text{g}/\text{m}^3$ ถึง 97.00 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv)1,2-ไดคลอโรอีthin (1,2-dichloroethane) 0.08 $\mu\text{g}/\text{m}^3$ ถึง 80.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv)	<ul style="list-style-type: none">WI-7.2-1-24 based on US EPA , Compendium Method TO-15 , EPA/625/R-96/010b, Second edition, January 1999

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ
(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026
(Certification No. 24-LB0026)

ฉบับที่ 02
(Issue No.02)
ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566
(Valid from) (30 October B.E.2566 (2023))
สถานที่ห้องปฏิบัติการ ☒ ถาวร (Permanent) ☐ ชั่วคราว (Temporary)
สถานะที่ ☐ เคลื่อนที่ (Mobile) ☐ หลายสถานที่ (Multisite)

จนถึงวันที่ 8 กันยายน พ.ศ. 2571
(Until) (8 September B.E.2571 (2028))

☐ เคลื่อนที่ (Mobile) ☐ หลายสถานที่ (Multisite)



สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสิ่งแวดล้อม (environmental field)</p> <p>4. บรรยากาศทั่วไป (ต่อ) (ambient air) (cont.)</p>	<p>- สารอินทรีย์ระเหยง่าย (Volatile organic compounds, VOCs)</p> <ul style="list-style-type: none"> เบนซีน (Benzene) 0.06 $\mu\text{g}/\text{m}^3$ ถึง 63.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) คาร์บอนเตตระคลอไรด์ (Carbon tetrachloride) 0.25 $\mu\text{g}/\text{m}^3$ ถึง 125 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) ไตรคลอโรเอทีลีน (Trichloroethylene) 0.21 $\mu\text{g}/\text{m}^3$ ถึง 107 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) 1,2-ไดคลอโรโพรเพน (1,2-dichloropropane) 0.18 $\mu\text{g}/\text{m}^3$ ถึง 92.00 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) เตตระคลอโรเอทีลีน (Tetrachloroethylene) 0.27 $\mu\text{g}/\text{m}^3$ ถึง 135 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) 	<p>- WI-7.2-1-24 based on US EPA , Compendium Method TO-15 , EPA/625/R-96/010b, Second edition, January 1999</p>

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ
(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026
(Certification No. 24-LB0026)

ฉบับที่ 02
(Issue No.02)
ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566
(Valid from) (30 October B.E.2566 (2023))
สถานที่ห้องปฏิบัติการ ☒ ถาวร (Permanent) ☐ ชั่วคราว (Temporary)
สถานะที่ ☐ เคลื่อนที่ (Mobile) ☐ หลายสถานที่ (Multisite)

จนถึงวันที่ 8 กันยายน พ.ศ. 2571
(Until) (8 September B.E.2571 (2028))

☐ เคลื่อนที่ (Mobile) ☐ หลายสถานที่ (Multisite)



สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสิ่งแวดล้อม (environmental field)</p> <p>4. บรรยากาศทั่วไป (ต่อ) (ambient air) (cont.)</p>	<p>- สารอินทรีย์ระเหยง่าย (Volatile organic compounds, VOCs)</p> <ul style="list-style-type: none"> 1,2-ไดโบรมโอเทน (1,2-dibromoethane) 0.31 $\mu\text{g}/\text{m}^3$ ถึง 153 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) 1,1,2,2-เตตระคลอโรเอทีน (1,1,2,2-tetrachloroethane) 0.69 $\mu\text{g}/\text{m}^3$ ถึง 137 $\mu\text{g}/\text{m}^3$ (0.10 ppbv ถึง 20.00 ppbv) เบนซิลคลอไรด์ (Benzyl chloride) 0.52 $\mu\text{g}/\text{m}^3$ ถึง 103 $\mu\text{g}/\text{m}^3$ (0.10 ppbv ถึง 20.00 ppbv) 1,4-ไดคลอโรเบนซีน (1,4-dichlorobenzene) 0.24 $\mu\text{g}/\text{m}^3$ ถึง 120 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) 	<p>- WI-7.2-1-24 based on US EPA , Compendium Method TO-15 , EPA/625/R-96/010b, Second edition, January 1999</p>