

เอกสารแนบที่ 8 แผนและบันทึกการบำรุงรักษาระบบท่อ  
ส่งก๊าซธรรมชาติ สถานีวัดและควบคุมแรงดันก๊าซ



Page 2 of 2

For the full discussion see:

ការបញ្ជាក់: ☐ ជំនាញ ☐ បំពេញ ☒ បញ្ជាក់ ☐ បញ្ជាក់ ☐ ផ្សេងៗ...  
 Request by : General/Creating/Parading    Yield/Inspection    Vehicle/Parading    Aerial/Parading    etc.  
 វិធីសាស្ត្រ: ☐ មិនមាន (សំណើ) ☐ មិនមាន (សំណើ) ☐ មិនមាន (សំណើ) (លើកលែង)  
 Method by : ☐ Without gas detector ☐ With gas detector (Please identify)

បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading Form)

Sheet No. : 1 / 2  
 ឈ្មោះ/ឈ្មោះ : មេធាវី/ឈ្មោះ/ឈ្មោះ  
 Division / Dept. : Police/Maintenance Section  
 Month/Year : 1 / 2025

Page Type: ☐ FIRST BRANCH ☐ FIRST MAIN ☐ FIRST ☒ TRANS BRANCH ☐ TRANS MAIN  
 Area/Group : ☒ GSD/Command ☐ GSP ☐ NGR ☐ NGV ☐ OTHER ☐ PTT/PS ☐ PTT/NG ☐ TSO

ក្រុមប្រឹក្សាប្រឹក្សា (Signature group) : 0010 - 0017

Basic Name : 00100000

| No. | Activity   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) |       |          |       |  |  |  |  |  |  |  |  |  |  |
|-----|--|--|-------|----------|-------|--|--|--|--|--|--|--|--|--|--|
|     |  | ស៊ីស្ទ ១   |       | ស៊ីស្ទ ២ |       |  |  |  |  |  |  |  |  |  |  |
|     |  | ឈ្មោះ  | ឈ្មោះ | ឈ្មោះ    | ឈ្មោះ |  |  |  |  |  |  |  |  |  |  |
| 1   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     |  |  |  |  |  |  |  |  |  |  |
| 2   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     |  |  |  |  |  |  |  |  |  |  |
| 3   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     |  |  |  |  |  |  |  |  |  |  |
| 4   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     |  |  |  |  |  |  |  |  |  |  |
| 5   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     |  |  |  |  |  |  |  |  |  |  |
| 6   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     |  |  |  |  |  |  |  |  |  |  |
| 7   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     |  |  |  |  |  |  |  |  |  |  |
| 8   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     |  |  |  |  |  |  |  |  |  |  |
| 9   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     |  |  |  |  |  |  |  |  |  |  |
| 10  | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     |  |  |  |  |  |  |  |  |  |  |
| 11  | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     |  |  |  |  |  |  |  |  |  |  |
| 12  | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     |  |  |  |  |  |  |  |  |  |  |
| 13  | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     |  |  |  |  |  |  |  |  |  |  |
| 14  | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     |  |  |  |  |  |  |  |  |  |  |

ឈ្មោះ :  
 (1) ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ  
 (2) ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ  
 (3) ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ

ឈ្មោះ/ឈ្មោះ  
 Digital/Signature

ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ  
 Digital/Signature

ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ  
 Digital/Signature

MR.PAKAST NOUNDA  
 MR.JACKET DUMPA

MR.PAKAST NOUNDA  
 MR.PASTHARA WATTHAMANNI

MR.ANUPONG BANGLUEW

3/2/2025

3/2/2025

3/2/2025

ក្រុមប្រឹក្សាប្រឹក្សា (Signature group) :

ការបញ្ជាក់: ☐ ជំនាញ ☐ បំពេញ ☒ បញ្ជាក់ ☐ បញ្ជាក់ ☐ ផ្សេងៗ...  
 Request by : General/Creating/Parading    Yield/Inspection    Vehicle/Parading    Aerial/Parading    etc.  
 វិធីសាស្ត្រ: ☒ មិនមាន (សំណើ) ☐ មិនមាន (សំណើ) ☐ មិនមាន (សំណើ) (លើកលែង)  
 Method by : ☒ Without gas detector ☐ With gas detector (Please identify)

បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading Form)

Sheet No. : 1 / 3  
 ឈ្មោះ/ឈ្មោះ : មេធាវី/ឈ្មោះ/ឈ្មោះ  
 Division / Dept. : Police/Maintenance Section  
 Month/Year : 2 / 2025

Page Type: ☐ FIRST BRANCH ☐ FIRST MAIN ☐ FIRST ☒ TRANS BRANCH ☐ TRANS MAIN  
 Area/Group : ☒ GSD/Command ☐ GSP ☐ NGR ☐ NGV ☐ OTHER ☐ PTT/PS ☐ PTT/NG ☐ TSO

ក្រុមប្រឹក្សាប្រឹក្សា (Signature group) : 0010 - 0017

Basic Name : 00100000

| No. | Activity   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) |       |          |       |          |       |          |       |          |       |          |       |          |       |          |       |
|-----|--|--|-------|----------|-------|----------|-------|----------|-------|----------|-------|----------|-------|----------|-------|----------|-------|
|     |  | ស៊ីស្ទ ១   |       | ស៊ីស្ទ ២ |       | ស៊ីស្ទ ៣ |       | ស៊ីស្ទ ៤ |       | ស៊ីស្ទ ៥ |       | ស៊ីស្ទ ៦ |       | ស៊ីស្ទ ៧ |       | ស៊ីស្ទ ៨ |       |
|     |  | ឈ្មោះ  | ឈ្មោះ | ឈ្មោះ    | ឈ្មោះ | ឈ្មោះ    | ឈ្មោះ | ឈ្មោះ    | ឈ្មោះ | ឈ្មោះ    | ឈ្មោះ | ឈ្មោះ    | ឈ្មោះ | ឈ្មោះ    | ឈ្មោះ | ឈ្មោះ    | ឈ្មោះ |
| 1   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     |
| 2   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     |
| 3   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     |
| 4   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     |
| 5   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     |
| 6   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     |
| 7   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     |
| 8   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     |
| 9   | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     |
| 10  | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     |
| 11  | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     |
| 12  | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     |
| 13  | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     |
| 14  | បញ្ជីបញ្ជីការបញ្ជាក់ការបញ្ជាក់ (Signature/Parading List) | /  | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     | /        | /     |

ឈ្មោះ :  
 (1) ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ  
 (2) ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ  
 (3) ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ/ឈ្មោះ

ឈ្មោះ/ឈ្មោះ  
 Digital/Signature

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 Digital/Signature

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 Digital/Signature

MR.PAKAST NOUNDA  
 MR.JACKET DUMPA

MR.PAKAST NOUNDA

MR.ANUPONG BANGLUEW

16/3/2025

16/3/2025

16/3/2025

ក្រុមប្រឹក្សាប្រឹក្សា (Signature group) :
























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|--|---|
| RC : 050504<br>KP: 1+206<br>Survey date : 6-Jun-25<br>Depth by pipe locator : 3.21 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260606_26 |       |
| RC : 050504<br>KP: 1+406<br>Survey date : 6-Jun-25<br>Depth by pipe locator : 1.51 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260606_22 |       |
| RC : 050504<br>KP: 1+606<br>Survey date : 6-Jun-25<br>Depth by pipe locator : 1.61 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260606_17 |       |
| RC : 050504<br>KP: 1+806<br>Survey date : 6-Jun-25<br>Depth by pipe locator : 2.71 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260606_13 |       |
| RC : 050504<br>KP: 2+006<br>Survey date : 6-Jun-25<br>Depth by pipe locator : 2.43 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260606_8  |     |
| RC : 050504<br>KP: 2+206<br>Survey date : 6-Jun-25<br>Depth by pipe locator : 1.89 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260606_4  |   |

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|--|---|
| RC : 050504<br>KP: 2+406<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 1.65 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_115 |       |
| RC : 050504<br>KP: 2+606<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 1.96 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_110 |       |
| RC : 050504<br>KP: 2+806<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 2.99 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_106 |       |
| RC : 050504<br>KP: 3+006<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 1.56 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_100 |       |
| RC : 050504<br>KP: 3+206<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 1.99 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_95  |     |
| RC : 050504<br>KP: 3+406<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 1.53 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_90  |   |



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|---|--|
| RC : 050504<br>KP: 3+806<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 1.53 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_85 |  |
| RC : 050504<br>KP: 3+806<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 1.64 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_81 |  |
| RC : 050504<br>KP: 4+006<br>Survey date : 25-Jun-25<br>Depth by pipe locator : 1.92 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260625_12 |  |
| RC : 050504<br>KP: 4+206<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 1.65 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_73 |  |
| RC : 050504<br>KP: 4+406<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 1.54 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_69 |  |
| RC : 050504<br>KP: 4+606<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 1.92 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_64 |  |

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|---|--|
| RC : 050504<br>KP: 4+806<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 2.56 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_60 |  |
| RC : 050504<br>KP: 5+006<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 4.62 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_53 |  |
| RC : 050504<br>KP: 5+206<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 3.1 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_44  |  |
| RC : 050504<br>KP: 5+406<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 4.04 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_38 |  |
| RC : 050504<br>KP: 5+606<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 1.68 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_35 |  |
| RC : 050504<br>KP: 5+806<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 1.70 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_29 |  |



|   |  |
|---|--|
| RC : 050504<br>KP: 6+006<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 1.65 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_24 |  |
| RC : 050504<br>KP: 6+206<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 7.94 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_20 |  |
| RC : 050504<br>KP: 6+406<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 1.71 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_14 |  |
| RC : 050504<br>KP: 6+606<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 1.91 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_10 |  |
| RC : 050504<br>KP: 6+806<br>Survey date : 14-Jun-25<br>Depth by pipe locator : 10.1 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 260614_5  |  |
| RC : 050504<br>KP: 7+006<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 1.52 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_144 |  |

|   |  |
|---|--|
| RC : 050504<br>KP: 7+206<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 3.49 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_140 |  |
| RC : 050504<br>KP: 7+406<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 1.82 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_135 |  |
| RC : 050504<br>KP: 7+606<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 3.06 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_3   |  |
| RC : 050504<br>KP: 7+806<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 2.91 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_13  |  |
| RC : 050504<br>KP: 8+006<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 1.77 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_18  |  |
| RC : 050504<br>KP: 8+206<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 1.71 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_22  |  |




|  |  |
|--|--|
| RC : 050504<br>KP: 8+406<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 2.17 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_27 |  |
| RC : 050504<br>KP: 8+606<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 1.80 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_31 |  |
| RC : 050504<br>KP: 8+806<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 2.78 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_36 |  |
| RC : 050504<br>KP: 9+006<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 2.42 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_43 |  |
| RC : 050504<br>KP: 9+206<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 2.30 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_48 |  |
| RC : 050504<br>KP: 9+406<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 5.13 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_52 |  |

|   |  |
|---|--|
| RC : 050504<br>KP: 9+606<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 3.30 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_61  |  |
| RC : 050504<br>KP: 9+806<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 3.42 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_56  |  |
| RC : 050504<br>KP: 10+006<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 1.79 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_65 |  |
| RC : 050504<br>KP: 10+206<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 1.62 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_69 |  |
| RC : 050504<br>KP: 10+406<br>Survey date : 25-Jun-25<br>Depth by pipe locator : 1.62 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250625_9 |  |
| RC : 050504<br>KP: 10+606<br>Survey date : 8-Jul-25<br>Depth by pipe locator : 1.94 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250708_70 |  |



|  |  |
|--|--|
| RC : 050504<br>KP: 10+806<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 1.88 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_81  |  |
| RC : 050504<br>KP: 11+006<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 1.70 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_126 |  |
| RC : 050504<br>KP: 11+206<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 1.60 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_122 |  |
| RC : 050504<br>KP: 11+406<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 1.60 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_117 |  |
| RC : 050504<br>KP: 11+606<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 1.97 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_112 |  |
| RC : 050504<br>KP: 11+806<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 2.18 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_105 |  |

|   |  |
|---|--|
| RC : 050504<br>KP: 12+006<br>Survey date : 25-Jun-25<br>Depth by pipe locator : 1.65 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250625_6 |  |
| RC : 050504<br>KP: 12+206<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 1.72 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_97 |  |
| RC : 050504<br>KP: 12+406<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 2.05 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_92 |  |
| RC : 050504<br>KP: 12+568<br>Survey date : 7-Jun-25<br>Depth by pipe locator : 1.54 meter<br>Gas check : 0 %<br>CP TEST POST KP :<br>Picture: 250607_85 |  |



บันทึกการวัดค่าการทรุดตัวของท่อส่งก๊าซและการตรวจสอบ Spring hanger ในสถานีควบคุมก๊าซ  
( Pipeline Movement Record & Spring hanger suport inspection Form )  
บริษัท ปตท. จำกัด (มหาชน)

F-รท.วรรด.-0024-กล้องระดับ

แผนก : ปท.9-1

ส่วน : ปท.9



พื้นที่ (BV Station) : ssut      Equipment :      วันที่ 26 / 3 / 68

**1. การตรวจสอบด้วยสายตา (Visual Inspection)**

เกณฑ์การตรวจสอบ


- การทรุดตัวระหว่างพื้นดินโดยรอบสถานี และพื้นฐานรากของ Piping Skid  
☒ ไม่พบ    ☐ พบการทรุดตัวแตกต่างกัน \_\_\_\_\_ เซนติเมตร
- การเอียงคดปัดของท่อภายในสถานี  
☐ ไม่พบ    ☒ พบการเอียงคดปัด จำนวน 1 ตำแหน่ง
- ความเสียหายบริเวณ หรือการคลายตัว ของ Bolt และ Nut จากการตั้งรับพื้นที่ Pipe Support  
☒ ไม่พบ    ☐ พบ Bolt หรือ Nut เสียหาย หรือคลายตัวจำนวน \_\_\_\_\_ จุด

รูปภาพโดยรวมสถานี

รูปภาพสิ่งผิดปกติที่ตรวจพบ

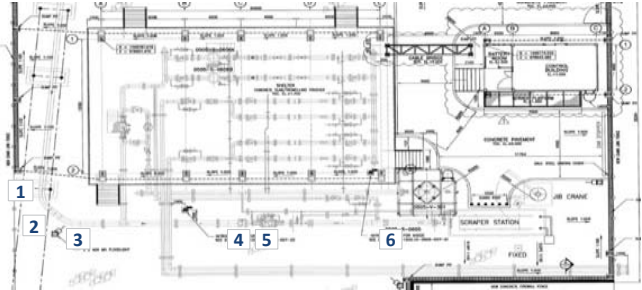
หมายเหตุ คำเป็นกรถ่ายรูปภาพภายในสถานี อย่างน้อย 2 รูป



บันทึกการวัดค่าการทรุดตัวของท่อส่งก๊าซและการตรวจสอบ Spring hanger ในสถานีควบคุมก๊าซ  
( Pipeline Movement Record & Spring hanger suport inspection Form )  
บริษัท ปตท. จำกัด (มหาชน)


F-รท.วรรด.-0024-กล้องระดับ

ภาพพร้อมระดับตำแหน่งการตรวจวัดกล้องระดับ



**2. การตรวจสอบระดับด้วยกล้องระดับ**

| Point | BS | FS | BS/FS  | Vertical Check | Diff<0.002 | Mean BS/FS | Δ EL (m) |        |           | NOTE   |  |  |  |
|-------|----|----|--------|----------------|------------|------------|----------|--------|-----------|--|--|--|--|
|       |    |    |        |                |            |            | Actual   | Lasted | Different |  |  |  |  |
| BM    | ✓  |    | 1.7200 | บน-กลาง        | 0.000      | 1.6628     |          |        |           |  |  |  |  |
|       |    |    | 0.000  |                |            |            |          |        |           |  |  |  |  |
|       |    |    | 1.7200 | กลาง-ล่าง      |            |            |          |        |           |  |  |  |  |
|       |    |    | 0.000  |                |            |            |          |        |           |  |  |  |  |
| 1     |    | ✓  | 2.1960 | บน-กลาง        | 0.000      | 2.1414     | 0.479    | 0.482  | 0.003     | หากค่า Different มีค่ามากกว่า 0.1 ให้ดำเนินการตรวจวัดใหม่เพื่อยืนยันผล |  |  |  |
|       |    |    | 0.000  |                |            |            |          |        |           |  |  |  |  |
|       |    |    | 2.1960 | กลาง-ล่าง      |            |            |          |        |           |  |  |  |  |
|       |    |    | 0.000  |                |            |            |          |        |           |  |  |  |  |
| 2     |    | ✓  | 2.1490 | บน-กลาง        | 0.000      | 2.0933     | 0.431    | 0.431  | 0.000     | หากค่า Different มีค่ามากกว่า 0.1 ให้ดำเนินการตรวจวัดใหม่เพื่อยืนยันผล |  |  |  |
|       |    |    | 0.000  |                |            |            |          |        |           |  |  |  |  |
|       |    |    | 2.1490 | กลาง-ล่าง      |            |            |          |        |           |  |  |  |  |
|       |    |    | 0.000  |                |            |            |          |        |           |  |  |  |  |
| 3     |    | ✓  | 2.1290 | บน-กลาง        | 0.000      | 2.0747     | 0.412    | 0.481  | 0.069     | หากค่า Different มีค่ามากกว่า 0.1 ให้ดำเนินการตรวจวัดใหม่เพื่อยืนยันผล |  |  |  |
|       |    |    | 0.000  |                |            |            |          |        |           |  |  |  |  |
|       |    |    | 2.1290 | กลาง-ล่าง      |            |            |          |        |           |  |  |  |  |
|       |    |    | 0.000  |                |            |            |          |        |           |  |  |  |  |



บันทึกการวัดค่าการทรุดตัวของท่อส่งก๊าซและการตรวจรอก Spring hanger ในสถานีควบคุมก๊าซ  
( Pipeline Movement Record & Spring hanger suport inspection Form )

บริษัท ปตท. จำกัด (มหาชน)

F-รท.วรด.-0024-คลังระดม

|   |  |   |        |           |       |        |        |       |       |  |
|---|--|---|--------|-----------|-------|--------|--------|-------|-------|--|
| 4 |  | ✓ | 1.7260 | บน-กลาง   | 0.000 | 1.6697 | 0.007  | 0.085 | 0.078 | หากค่า Different มีค่ามากกว่า 0.1 ให้ดำเนินการตรวจวัดใหม่เพื่อยืนยันผล |
|   |  |   | 0.000  |           |       |        |        |       |       |  |
|   |  |   | 1.7260 | กลาง-ล่าง |       |        |        |       |       |  |
|   |  |   | 1.7260 | 0.000     |       |        |        |       |       |  |
| 5 |  | ✓ | 1.6170 | บน-กลาง   | 0.000 | 1.5590 | -0.104 | 0.081 | 0.185 | หากค่า Different มีค่ามากกว่า 0.1 ให้ดำเนินการตรวจวัดใหม่เพื่อยืนยันผล |
|   |  |   | 0.000  |           |       |        |        |       |       |  |
|   |  |   | 1.6170 | กลาง-ล่าง |       |        |        |       |       |  |
|   |  |   | 1.6170 | 0.000     |       |        |        |       |       |  |
| 6 |  | ✓ | 2.1430 | บน-กลาง   | 0.000 | 2.0891 | 0.426  | 0.485 | 0.059 | หากค่า Different มีค่ามากกว่า 0.1 ให้ดำเนินการตรวจวัดใหม่เพื่อยืนยันผล |
|   |  |   | 0.000  |           |       |        |        |       |       |  |
|   |  |   | 2.1430 | กลาง-ล่าง |       |        |        |       |       |  |
|   |  |   | 2.1430 | 0.000     |       |        |        |       |       |  |

หมายเหตุ : BM (Benchmark) : ตำแหน่งที่ไม่เป็นจุดอ้างอิง

BS (Backsight) : ค่า Staff ที่อ่านได้จากการส่องกล้องไปยังจุด BM

FS (Foresight) : ค่า Staff ที่อ่านได้จากการส่องกล้องไปยังจุดที่ต้องการวัด



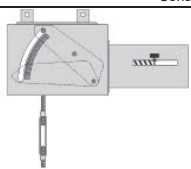
Δ EL (Elevation) : ค่าต่างระดับของจุดอ้างอิง (BM) กับจุดที่ต้องการวัด

สูตรคำนวณ : Mean FS - Mean BS = Δ EL

**3. การตรวจการทรุดตัวจาก Spring Hanger**

☐ ไม่มี Spring hanger

☒ มี Spring Hanger โดยได้ผลการตรวจวัดดังนี้

| Hanger Type   | Constant Type   |
|---|---|
| <div style="display: flex;">   </div> | <div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>รูปภาพอุปกรณ์งาน</p> </div> </div> |
| <p>Name Plate ID:</p> <p>Hot Position:</p> <p>Cold Position:</p> <p>Actual Position:</p>  | <p>Name Plate ID:</p> <p>Limit Angle:</p> <p>Actual Angle:</p> <p>Colour Range: เหลือง</p>  |

ผู้ตรวจสอบ

.....26../..03../..68.....

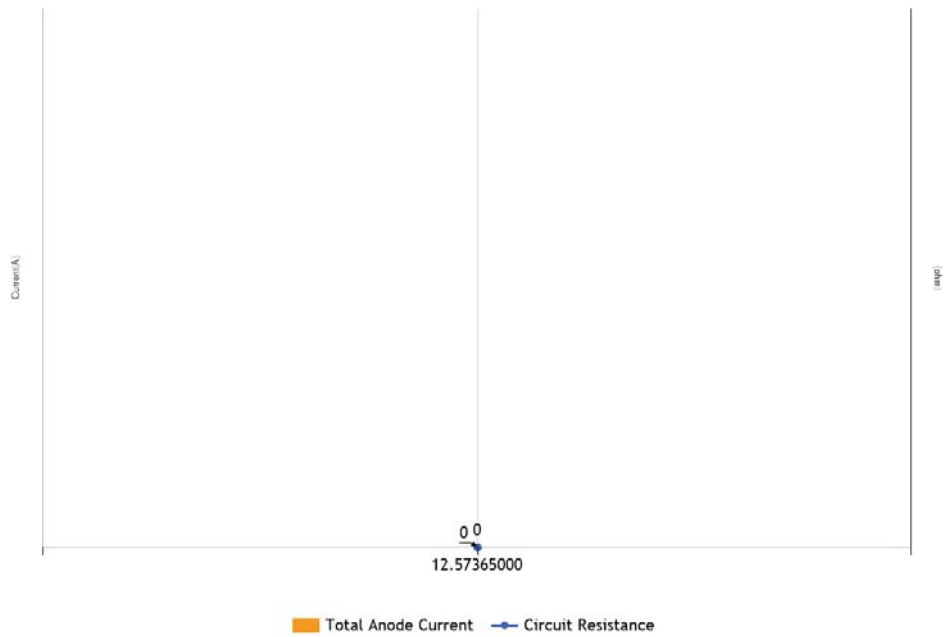
ผู้รับรอง

.....26../..03../..68.....

|  |  |  |  |  |  |  |  |  |                             |  |  |
|--|--|--|--|--|--|--|--|--|-----------------------------|--|--|
| Anode Groundbed inspection record form (แบบฟอร์มบันทึกการตรวจสอบ Anode Groundbed)  |  |  |  |  |  |  |  |  |                             |  |  |
| Division (หน่วยงาน) : Region 9   |  |  | Route Code : RC050504  |  |  | Route Name (ชื่อทาง) : BV10 - SSUT   |  |  | Location (สถานที่) : 12-574 |  |  |
| License no. (เลขที่ใบอนุญาต) : 001230098   |  |  | Equipment (เครื่องมือที่ใช้) :   |  |  | License name (ชื่อใบอนุญาต) : โครงการทดสอบการตรวจระบบไฟฟ้าป้องกันกราวด์ลิตบนีลใกล้และใกล้เขื่อนฝายลัดช่องบวรวิทย์ เขตตอหนุ่ใต้ จังหวัด |  |  |                             |  |  |
| GPS (Datum: WGS84) : N : 13.533721910 E : 100.6505879850   |  |  | Transformer TAG :  |  |  | Serial no. :   |  |  | Calibration Date :          |  |  |
| MAOP:  |  |  | Total Anode w/Total Anode wire (คำนวณรวม An Transformer TAG : RC050504 สถานที่ : 12-574 GPS (Datum: WGS84) : |  |  |  |  |  |                             |  |  |
| ANODE GROUNDBED  |  |  | OW/BL ANODE  |  |  | OW/BL ANODE  |  |  | OW/BL ANODE                 |  |  |
| AS FOUND   |  |  | Rectifier Output (Vdc)   |  |  | 4.680  |  |  | 4.680                       |  |  |
|  |  |  | <input checked="" type="checkbox"/> Clamp Ammeter  |  |  |  |  |  |                             |  |  |
|  |  |  | Inode_dc (A)   |  |  | 0.800  |  |  | 1.400                       |  |  |
|  |  |  | <input type="checkbox"/> Shunt Resistor  |  |  |  |  |  |                             |  |  |
|  |  |  | Shunt Ratio (A/mV)   |  |  | 0  |  |  | 0                           |  |  |
| Current Measurement  |  |  | Váunt (mV)   |  |  | 0  |  |  | 0                           |  |  |
|  |  |  | Inode_dc (A)   |  |  | 0  |  |  | 0                           |  |  |
|  |  |  | Circuit Resistance (ohm)   |  |  | 5.850  |  |  | 3.343                       |  |  |
| Total Anode Current (A)  |  |  | 5.850  |  |  | 3.343  |  |  | 4.255                       |  |  |
| AS LEFT  |  |  | OW/BL ANODE  |  |  | OW/BL ANODE  |  |  | OW/BL ANODE                 |  |  |
| AS LEFT  |  |  | Rectifier Output (Vdc)   |  |  | 4.680  |  |  | 4.680                       |  |  |
|  |  |  | <input type="checkbox"/> Clamp Ammeter   |  |  |  |  |  |                             |  |  |
|  |  |  | Inode_dc (A)   |  |  | 0  |  |  | 0                           |  |  |
|  |  |  | <input type="checkbox"/> Shunt Resistor  |  |  |  |  |  |                             |  |  |
|  |  |  | Shunt Ratio (A/mV)   |  |  | 0  |  |  | 0                           |  |  |
| Current Measurement  |  |  | Váunt (mV)   |  |  | 0  |  |  | 0                           |  |  |
|  |  |  | Inode_dc (A)   |  |  | 0  |  |  | 0                           |  |  |
|  |  |  | Circuit Resistance (ohm)   |  |  | 5.850  |  |  | 3.343                       |  |  |
| Total Anode Current (A)  |  |  | 5.850  |  |  | 3.343  |  |  | 4.255                       |  |  |
| REMARKS  |  |  |  |  |  |  |  |  |                             |  |  |
| Note: Inode (A) = Váunt x Shunt Ratio, Circuit Resistance = Vdc/Inode (โหม้) Shunt Ratio (โหม้) Shunt Resistor (โหม้) Inode (A) = Váunt x Shunt Ratio, Circuit Resistance = Vdc/Inode (โหม้) |  |  |  |  |  |  |  |  |                             |  |  |

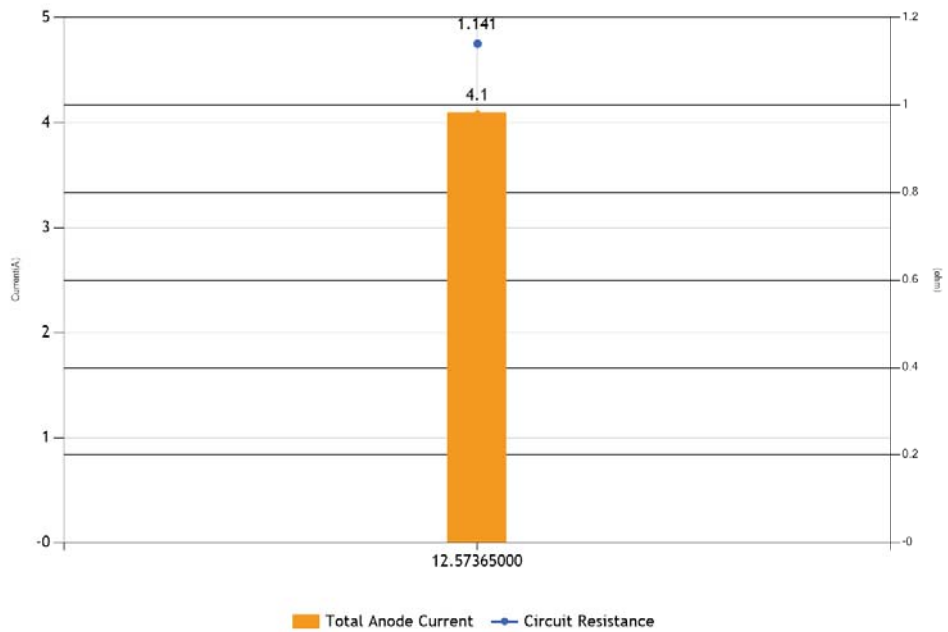
As Left Circuit Resistance And Total Anode Current

Asset owner : GSM\_Customer    Region : Region 9    RC : RC050504    License no : nn2310098



As Found Circuit Resistance And Total Anode Current

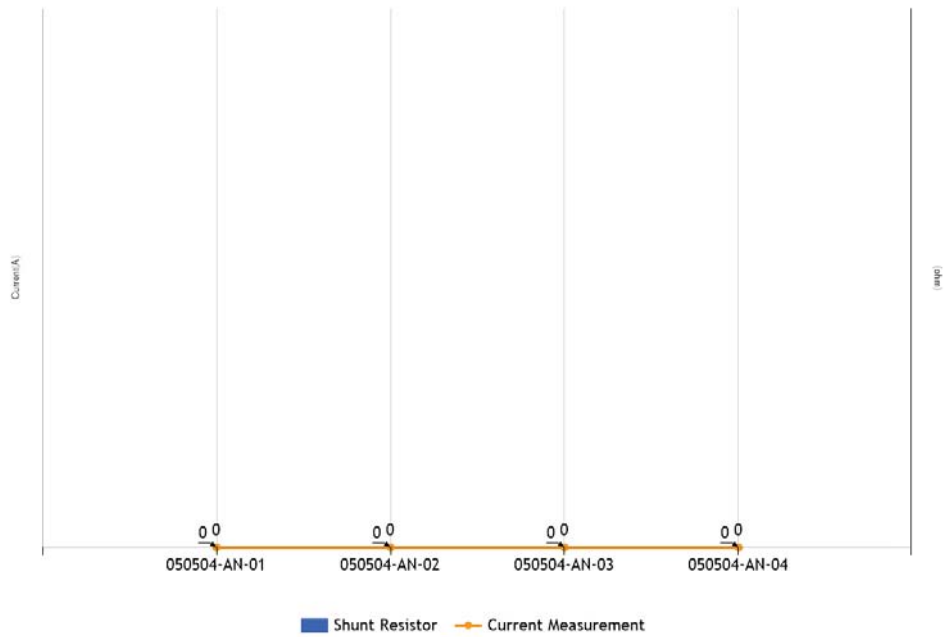
Asset owner : GSM\_Customer    Region : Region 9    RC : RC050504    License no : nn2310098





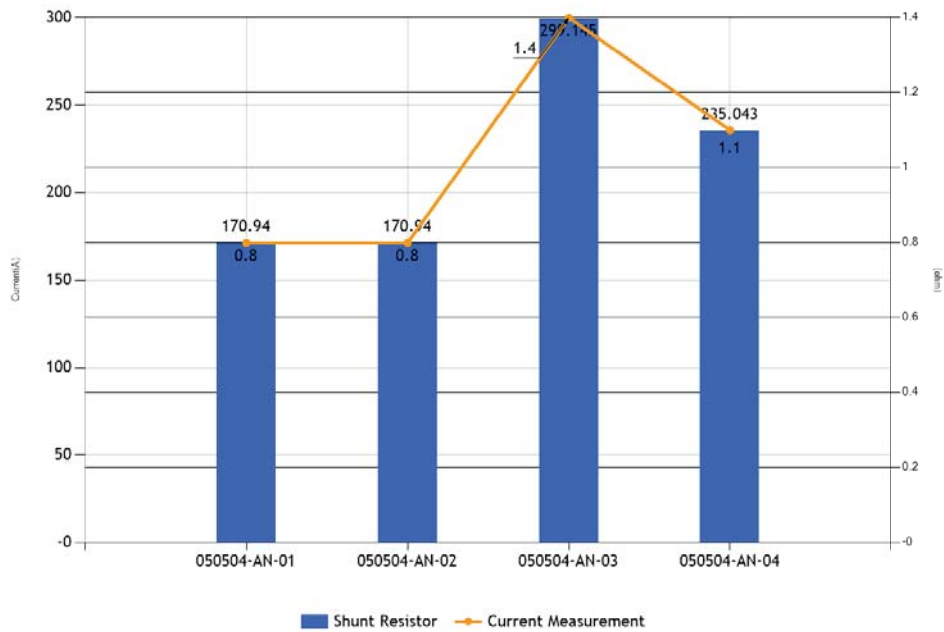
As Left Current Measurement And Shunt Resistor

Asset owner : GSM\_Customer    Region : Region 9    RC : RC050504    License no : nn2310098    KP : 12.57365000



As Found Current Measurement And Shunt Resistor

Asset owner : GSM\_Customer    Region : Region 9    RC : RC050504    License no : nn2310098    KP : 12.57365000



บันทึกการตรวจสอบระบบ AC Mitigation - Isolating Flange or Joint

Inspected by (ตรวจสอบโดย)

Digital Signed

30/05/2025

Checked by (ตรวจสอบโดย)

Digital Signed

05/06/2025

Approved by (รับรองโดย)

Digital Signed

06/06/2025

Division (หน่วย): Region 9

Maop :

Route Code: RC050504

Route Name: RC050504

KP: 12.57255000

ขนาดท่อ: 16 นิ้ว

เครื่องมือที่ใช้:

วิธีการวัด:

☒ Pipe-electrolyte Potential Method

☐ Insulation Tester Method

☐ Pipe Locator Method

☐ Ohm Resistance Method

MAOP:

1.1 บันทึกผลการตรวจวัด Isolating Flange or Joint (Pipe-electrolyte Potential Method)

| Item | Location | Isolation Type                      |                          | DC Volt (Vd)<br>Station Side | DC Volt (Vp)<br>Pipe Side | Vs-Vp<br>(mV) | Condition (Yes / No) |          |          |
|------|----------|-------------------------------------|--------------------------|------------------------------|---------------------------|---------------|----------------------|----------|----------|
|      |          | Joint                               | Flange                   |                              |                           |               | Insulator            | Gas Leak | Painting |
| 1    |          | <input checked="" type="checkbox"/> | <input type="checkbox"/> | -1.014                       | -0.454                    | 560           | Y                    | N        | Y        |
|      |          | <input type="checkbox"/>            | <input type="checkbox"/> |                              |                           |               |                      |          |          |
|      |          | <input type="checkbox"/>            | <input type="checkbox"/> |                              |                           |               |                      |          |          |
|      |          | <input type="checkbox"/>            | <input type="checkbox"/> |                              |                           |               |                      |          |          |
|      |          | <input type="checkbox"/>            | <input type="checkbox"/> |                              |                           |               |                      |          |          |
|      |          | <input type="checkbox"/>            | <input type="checkbox"/> |                              |                           |               |                      |          |          |
|      |          | <input type="checkbox"/>            | <input type="checkbox"/> |                              |                           |               |                      |          |          |
|      |          | <input type="checkbox"/>            | <input type="checkbox"/> |                              |                           |               |                      |          |          |

\*\* If Vs-Vp potential is lesser than 100 mV. The insulating condition might be short.

1.2 บันทึกผลการตรวจวัด Isolating Flange or Joint (Insulation Tester Method)

| Item | Location | Isolation type                      |                          | Insulation Resistant<br>(MOhm) | Bypass | Condition (Yes/No) |          |          |
|------|----------|-------------------------------------|--------------------------|--------------------------------|--------|--------------------|----------|----------|
|      |          | Joint                               | Flange                   |                                |        | Insulator          | Gas Leak | Painting |
| 1    |          | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                | N      | N                  | N        | N        |
|      |          | <input type="checkbox"/>            | <input type="checkbox"/> |                                |        |                    |          |          |
|      |          | <input type="checkbox"/>            | <input type="checkbox"/> |                                |        |                    |          |          |
|      |          | <input type="checkbox"/>            | <input type="checkbox"/> |                                |        |                    |          |          |
|      |          | <input type="checkbox"/>            | <input type="checkbox"/> |                                |        |                    |          |          |
|      |          | <input type="checkbox"/>            | <input type="checkbox"/> |                                |        |                    |          |          |
|      |          | <input type="checkbox"/>            | <input type="checkbox"/> |                                |        |                    |          |          |
|      |          | <input type="checkbox"/>            | <input type="checkbox"/> |                                |        |                    |          |          |

1.3 บันทึกผลการตรวจวัด Isolating Flange or Joint (Pipe locator method)

| Item | Location | Isolation type           |                          | Pipe Locator Mode<br>(Inductive / Conductive) | Pipe Locator<br>Frequency (Hz) | Condition (Yes/No) |          |          |
|------|----------|--------------------------|--------------------------|---|--------------------------------|--------------------|----------|----------|
|      |          | Joint                    | Flange                   |   |                                | Insulator          | Gas Leak | Painting |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |   |                                |                    |          |          |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |   |                                |                    |          |          |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |   |                                |                    |          |          |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |   |                                |                    |          |          |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |   |                                |                    |          |          |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |   |                                |                    |          |          |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |   |                                |                    |          |          |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |   |                                |                    |          |          |

1.4 บันทึกผลการตรวจวัด Isolating Flange or Joint (Ohm Resistance Method)

| Item | Location | Isolation type           |                          | Insulation Resistant<br>(Ohm or OO) | Bypass | Condition (Yes/No) |          |          |
|------|----------|--------------------------|--------------------------|-------------------------------------|--------|--------------------|----------|----------|
|      |          | Joint                    | Flange                   |                                     |        | Insulator          | Gas Leak | Painting |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |                                     |        |                    |          |          |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |                                     |        |                    |          |          |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |                                     |        |                    |          |          |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |                                     |        |                    |          |          |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |                                     |        |                    |          |          |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |                                     |        |                    |          |          |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |                                     |        |                    |          |          |
|      |          | <input type="checkbox"/> | <input type="checkbox"/> |                                     |        |                    |          |          |

\*\* This method could be used only when insulating flange or joint are not electrically installed with under ground structure.

บันทึกการตรวจสอบระบบ AC Mitigation - DC Decoupler

Inspected by (ตรวจสอบโดย)

Digital Signed

30/05/2025

Checked by (ตรวจสอบโดย)

Digital Signed

05/06/2025

Approved by (รับรองโดย)

Digital Signed

06/06/2025

Division (หน่วย): Region 9

Maop :

Route Code: RC050504

Route Name: RC050504

KP: 12.57255000

ขนาดท่อ: 16 นิ้ว

เครื่องมือที่ใช้:

1.1 บันทึกผลการตรวจวัด DC Decoupler (DC Decoupler Inspection)

| Item | Location | DC Decoupler Type | Measurement            |                           |                        |                           | Condition<br>(Pass/Fail) |
|------|----------|-------------------|------------------------|---------------------------|------------------------|---------------------------|--------------------------|
|      |          |                   | AC Voltage Drop<br>(V) | AC Leakage<br>Current (A) | DC Voltage Drop<br>(V) | DC Voltage<br>Current (A) |                          |
| 1    |          | DC DECOUPLER      | 0.0240                 | 0.7000                    | 0.5580                 | 0.0000                    | TRUE                     |
|      |          |                   |                        |                           |                        |                           |                          |
|      |          |                   |                        |                           |                        |                           |                          |
|      |          |                   |                        |                           |                        |                           |                          |
|      |          |                   |                        |                           |                        |                           |                          |
|      |          |                   |                        |                           |                        |                           |                          |
|      |          |                   |                        |                           |                        |                           |                          |
|      |          |                   |                        |                           |                        |                           |                          |
|      |          |                   |                        |                           |                        |                           |                          |

1.2 บันทึกการตรวจสอบ DC Decoupler (DC Decoupler Visual Inspection (Polarization cell))

| Item | Location | Solution Purity | Tightening               | Greasing                 | Rust At Case             | ROH Flow level | Correction | Remark |
|------|----------|-----------------|--------------------------|--------------------------|--------------------------|----------------|------------|--------|
| 1    |          |                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                |            |        |

INSPECTION AND MAINTENANCE RECORD FORM OF TRANSFORMER RECTIFIER

(แบบฟอร์มบันทึกการตรวจสอบและบำรุงรักษาหม้อแปลงไฟฟ้าเรียงกระแส)

Region : Region 9

Route Code : RC050504

Location : 12+574

License no: ๓๓2310098

License Name: โครงการก่อสร้างขั้วสายรวมชาติไปยังโครงการผลิตพลังงานน้ำและไฟฟ้าขนาดเล็กของบริษัท เอสเอสยูที จำกัด

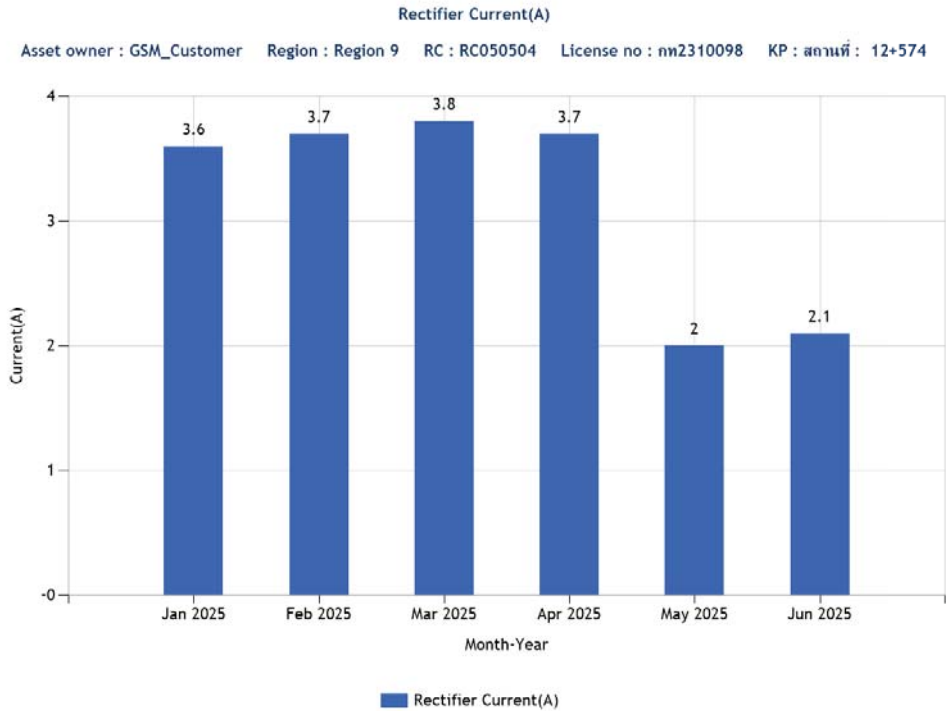
Transformer TAG : 050504-TR-01

Transformer Type :

MAOP:

|                              |                      |  |  |  |  |  |  |        |  |  |  |  |  |  |  |
|------------------------------|----------------------|--|--|--|--|--|--|--------|--|--|--|--|--|--|--|
| DATE                         |                      | 27/01/2025                                   | 27/02/2025                                   | 25/03/2025                                   | 30/04/2025                                   | 02/06/2025                                   | 20/06/2025                                   |        |  |  |  |  |  |  |  |
| AS FOUND                     | Input                | Vac(V)                                       | 230  | 233  | 232  | 230  | 230  | 231    |  |  |  |  |  |  |  |
|                              |                      | Iac(A)                                       | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5    |  |  |  |  |  |  |  |
|                              | Output               | Vdc(V)                                       | 4.69   | 4.71   | 4.68   | 4.65   | 4.64   | 4.7    |  |  |  |  |  |  |  |
|                              |                      | Iac(A)                                       | 3.6  | 3.7  | 3.8  | 3.7  | 2  | 2.1    |  |  |  |  |  |  |  |
|                              | P/S                  | On Vdc(-V)                                   | -1.015                                       | -1.006                                       | -1.012                                       | -1.027                                       | -1.022                                       | -1.028 |  |  |  |  |  |  |  |
|                              |                      | Off Vdc(-V)                                  | -0.92  | -0.998                                       | -0.914                                       | -0.932                                       | -0.924                                       | -0.935 |  |  |  |  |  |  |  |
|                              | Tap Status/Set Point | C1F3   | C1F3   | C1F3   | C1F3   | C1F3   | C1F3   | C1F3   |  |  |  |  |  |  |  |
| CLEANING                     |                      | <input type="checkbox"/>                     | <input checked="" type="checkbox"/>          | <input checked="" type="checkbox"/>          | <input checked="" type="checkbox"/>          | <input checked="" type="checkbox"/>          | <input checked="" type="checkbox"/>          |        |  |  |  |  |  |  |  |
| FUSE & BREAKER               |                      | <input type="checkbox"/>                     | <input type="checkbox"/>                     | <input type="checkbox"/>                     | <input type="checkbox"/>                     | <input type="checkbox"/>                     | <input type="checkbox"/>                     |        |  |  |  |  |  |  |  |
| ARRESTOR                     |                      | <input type="checkbox"/>                     | <input type="checkbox"/>                     | <input type="checkbox"/>                     | <input type="checkbox"/>                     | <input type="checkbox"/>                     | <input type="checkbox"/>                     |        |  |  |  |  |  |  |  |
| AS LEFT                      | Input                | Vac(V)                                       |  |  |  |  |  |        |  |  |  |  |  |  |  |
|                              |                      | Iac(A)                                       |  |  |  |  |  |        |  |  |  |  |  |  |  |
|                              | Output               | Vdc(V)                                       |  |  |  |  |  |        |  |  |  |  |  |  |  |
|                              |                      | Iac(A)                                       |  |  |  |  |  |        |  |  |  |  |  |  |  |
|                              | P/S                  | On Vdc(-V)                                   |  |  |  |  |  |        |  |  |  |  |  |  |  |
|                              |                      | Off Vdc(-V)                                  |  |  |  |  |  |        |  |  |  |  |  |  |  |
|                              | Tap Status/Set Point |  |  |  |  |  |  |        |  |  |  |  |  |  |  |
| KWH                          |                      |  |  |  |  |  |  |        |  |  |  |  |  |  |  |
| Frequency (Hz)               |                      |  |  |  |  |  |  |        |  |  |  |  |  |  |  |
| REMARKS                      |                      |  |  |  |  |  |  |        |  |  |  |  |  |  |  |
| Equipment Name               |                      |  |  |  |  |  |  |        |  |  |  |  |  |  |  |
| Cer No/Serial No             |                      |  |  |  |  |  |  |        |  |  |  |  |  |  |  |
| Cal Date                     |                      |  |  |  |  |  |  |        |  |  |  |  |  |  |  |
| Next Cal Date                |                      |  |  |  |  |  |  |        |  |  |  |  |  |  |  |
| Inspected by<br>(ตรวจวัดโดย) |                      | Digital Signed<br>(MR.JACKKIT<br>HOMPA )     | Digital Signed<br>(MR.JACKKIT<br>HOMPA )     | Digital Signed<br>(MR.JACKKIT<br>HOMPA )     | Digital Signed<br>(MR.JACKKIT<br>HOMPA )     | Digital Signed<br>(MR.JACKKIT<br>HOMPA )     | Digital Signed<br>(MR.JACKKIT<br>HOMPA )     |        |  |  |  |  |  |  |  |
|                              |                      | 21/01/2025                                   | 19/02/2025                                   | 20/03/2025                                   | 24/04/2025                                   | 15/05/2025                                   | 17/06/2025                                   |        |  |  |  |  |  |  |  |
| Checked by<br>(ตรวจสอบโดย)   |                      | Digital Signed<br>(MR.PAKASIT<br>NOUNSND )   | Digital Signed<br>(MR.PAKASIT<br>NOUNSND )   | Digital Signed<br>(MR.PAKASIT<br>NOUNSND )   | Digital Signed<br>(MR.PAKASIT<br>NOUNSND )   | Digital Signed<br>(MR.PAKASIT<br>NOUNSND )   | Digital Signed<br>(MR.PAKASIT<br>NOUNSND )   |        |  |  |  |  |  |  |  |
|                              |                      | 31/01/2025                                   | 27/02/2025                                   | 27/03/2025                                   | 01/05/2025                                   | 04/06/2025                                   | 20/06/2025                                   |        |  |  |  |  |  |  |  |
| Approved by<br>(รับรองโดย)   |                      | Digital Signed<br>(MR.LANUPONG<br>BANGKIEW ) | Digital Signed<br>(MR.LANUPONG<br>BANGKIEW ) | Digital Signed<br>(MR.LANUPONG<br>BANGKIEW ) | Digital Signed<br>(MR.LANUPONG<br>BANGKIEW ) | Digital Signed<br>(MR.LANUPONG<br>BANGKIEW ) | Digital Signed<br>(MR.LANUPONG<br>BANGKIEW ) |        |  |  |  |  |  |  |  |
|                              |                      | 03/02/2025                                   | 04/03/2025                                   | 01/04/2025                                   | 02/05/2025                                   | 05/06/2025                                   | 30/06/2025                                   |        |  |  |  |  |  |  |  |

F-รท.วรต.-0005 บันทึกการตรวจสอบและบำรุงรักษา Transformer Rectifier ประกาศใช้ครั้งที่ 2



# Cathodic Protection Module Calibration Report

**Location:** BV SSUT

### Test Result of Pipe-to-Soil Voltage Module

|                        |                 |                     |
|------------------------|-----------------|---------------------|
| TAG. No.:              | Range: 0-5 Volt | Accuracy: 0.2% (FS) |
| Manufacturer: Red Lion | Model: IAMS0001 | S/N:                |

| Standard Signal |        | Converter Output |         |          | SCADA Output |        |        |
|-----------------|--------|------------------|---------|----------|--------------|--------|--------|
| Applied         | Normal | As Found         | As Left | As Found | As Left      |        |        |
| %               | (mA)   | (mA)             | %Error  | (mA)     | %Error       | (Volt) | %Error |
| 0               | 0.000  | 4.002            | 0.012   |          |              | 0.000  | 0.00   |
| 25              | 1.250  | 8.00             | -0.006  |          |              | 1.248  | -0.01  |
| 50              | 2.500  | 12.00            | -0.044  |          |              | 2.500  | 0.00   |
| 75              | 3.750  | 16.00            | -0.044  |          |              | 3.750  | 0.00   |
| 100             | 5.000  | 20.00            | -0.066  |          |              | 5.000  | 0.00   |

### Test Result of Rectifier Voltage Module

|                        |                  |                     |
|------------------------|------------------|---------------------|
| TAG. No.:              | Range: 0-20 Volt | Accuracy: 0.2% (FS) |
| Manufacturer: Red Lion | Model: IAMA3535  | S/N:                |

| Standard Signal |        | Converter Output |         |          | SCADA Output |        |        |
|-----------------|--------|------------------|---------|----------|--------------|--------|--------|
| Applied         | Normal | As Found         | As Left | As Found | As Left      |        |        |
| %<br>(Voll)     | (mA)   | (mA)             | %Error  | (mA)     | %Error       | (Voll) | %Error |
| 0               | 0.00   | 3.997            | -0.019  |          |              | 0.000  | 0.00   |
| 25              | 5.00   | 7.992            | -0.050  |          |              | 7.482  | 15.51  |
| 50              | 10.00  | 11.989           | -0.069  |          |              | 14.992 | 31.20  |
| 75              | 15.00  | 16.00            | -0.069  |          |              | 22.480 | 46.75  |
| 100             | 20.00  | 19.987           | -0.081  |          |              | 29.962 | 65.39  |

### Test Result of Rectifier Current Module

|                        |                        |                     |
|------------------------|------------------------|---------------------|
| TAG. No.:              | Range: 0-50 mV (0-30A) | Accuracy: 0.2% (FS) |
| Manufacturer: Red-Lion | Model: IAMA3535        | S/N:                |

| Standard | Signal       | Converter Output |        |         |        | SCADA Output |        |         |        |
|----------|--------------|------------------|--------|---------|--------|--------------|--------|---------|--------|
|          |              | As Found         | %Error | As Left | %Error | As Found     | %Error | As Left | %Error |
| %        | Applied (mV) | Normal (mA)      |        |         |        |              |        |         |        |
| 0        | 0.0          | 4.011            | 0.069  |         | 0.000  | 0.00         |        |         |        |
| 25       | 12.5         | 8.00             | 0.025  |         | 12.500 | 0.00         |        |         |        |
| 50       | 25.0         | 12.00            | 0.013  |         | 24.986 | -0.03        |        |         |        |
| 75       | 37.5         | 16.00            | -0.019 |         | 37.486 | -0.02        |        |         |        |
| 100      | 50.0         | 20.00            | 0.000  |         | 50.000 | 0.00         |        |         |        |

### Process Verification Check

| Process Verification Check | Process Value                 |        | Replacement |        |           |       |          |
|----------------------------|-------------------------------|--------|-------------|--------|-----------|-------|----------|
|                            | Field                         | SCADA  | %Error      | Relay  | Converter | Surge | Isolator |
|                            |                               |        |             |        |           |       |          |
|                            | Loop Pipe-to-Soil Voltage (V) | -1.022 | -1.024      | -0.04% |           |       |          |
|                            | Loop Rectifier Voltage (V)    | 4.600  | 4.640       | 0.20%  | -         |       |          |
| Loop Rectifier Current (A) | 2.000                         | 2.00   | 0.00%       | -      |           |       |          |

### Information of Test Equipment

|                |           |          |              |
|----------------|-----------|----------|--------------|
| Equipment Name | SIMULATOR | DMM      | Power Supply |
| Manufacturer   | YOKOGAWA  | Fluke    | -            |
| Model no.      | CA71-E    | 789      | -            |
| Serial no.     | TP8061    | 42890003 |              |

**Comment :** SCADA Voltage Range 0-50 but Field 0-20

Tested by:

Witnessed by:

Date: 20 / 3 / 2022

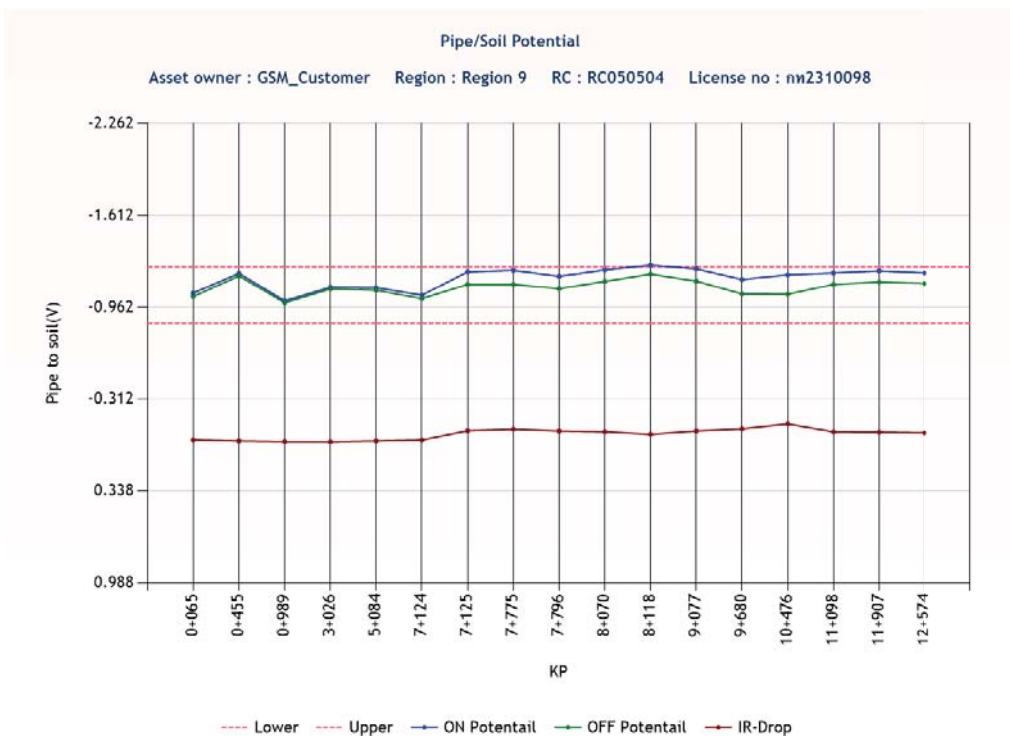
Date: 28 / 5 / 68





F-รท.วรด.-0039 ประกาศใช้ครั้งที่ 1




[illegible]


| Equipment             | LDMM   | Calibration Date                 |
|-----------------------|--|----------------------------------|
| 2-reference Electrode | <input checked="" type="checkbox"/> Cu/CuSO <sub>4</sub>   | <input type="checkbox"/> Ag/AgCl |
| Note:                 | TP type: A = Typical, AA = $\beta$ Anodic, AR = $\beta$ reference cell, AC = $\beta$ AC mitigation, ARS = $\beta$ AC mitigation & reference cell, B = Casing<br>Soil Conductivity (mhos) = $w \cdot \text{an} / (\text{an} + \text{d})$ , D = $\text{Rin} / \text{R}C$ = $\text{min} \text{Conc} \cdot \text{RA} = (\text{min} \text{an} + \text{R}) \cdot \text{RL} = \text{an} / \text{an} + \text{d}$<br>Failure Status: N = Normal, F = Failure, P = Problem Found |                                  |

| MP    | LOCATION | GPS Coordinate |            | Voltage Rating (v)<br>efficiency (v) (KV) | Space (mmxv) (m) | Type of TP |       | Physical Protection |    | Catalytic Potential |    | Zinc Potency (V) | Gas Leak (% LEL) | Soil condition (mm) | Failure Status | REMARKS |        |    |
|-------|----------|----------------|------------|---|------------------|------------|-------|---------------------|----|---------------------|----|------------------|------------------|---------------------|----------------|---------|--------|----|
|       |          | N              | E          |   |                  | on DC      |       | off DC              |    | on DC               |    |                  |                  |                     |                |         | off DC |    |
|       |          |                |            |   |                  | AC         | DC    | AC                  | DC | AC                  | DC |                  |                  |                     |                |         | AC     | DC |
| 0.00  | 020015   | 13.040523      | 100.007934 | AA  | AA               | -0.64      | -0.69 | 0.20                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 0.00  | 020403   | 13.027407      | 100.007921 | AA  | AA               | -2.50      | -1.83 | 0.10                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 0.00  | 020704   | 13.000279      | 100.007793 | AA  | AA               | -0.69      | -0.96 | 0.06                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 1.00  | 020705   | 13.279540      | 100.0069   | AA  | AA               | -1.00      | -1.03 | 0.06                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 0.00  | 020904   | 13.040098      | 100.007972 | AA  | AA               | -1.00      | -1.04 | 0.04                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 1.10  | 020710   | 13.240408      | 100.007813 | AA  | AA               | -0.60      | -0.62 | 0.10                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 1.10  | 020715   | 13.240410      | 100.007813 | AA  | AA               | -1.10      | -1.13 | 0.10                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 1.70  | 020716   | 13.240092      | 100.007863 | AA  | AA               | -2.29      | -1.23 | 0.10                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 1.70  | 020716   | 13.240092      | 100.007863 | AA  | AA               | -1.82      | -1.04 | 0.07                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 0.00  | 020906   | 13.240256      | 100.007771 | AA  | AA               | -1.29      | -1.06 | 0.10                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 0.10  | 020908   | 13.001290      | 100.007043 | AA  | AA               | -2.52      | -1.08 | 0.08                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 0.07  | 020905   | 13.250047      | 100.007403 | AA  | AA               | -1.28      | -1.48 | 0.16                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 0.00  | 020906   | 13.240304      | 100.007403 | AA  | AA               | 1.10       | -1.04 | 0.08                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 14.20 | 020906   | 13.240093      | 100.007829 | AA  | AA               | -1.19      | -1.04 | 1.12                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 1.00  | 020710   | 13.240402      | 100.007813 | AA  | AA               | -1.30      | -1.12 | 0.30                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 1.10  | 020710   | 13.240402      | 100.007813 | AA  | AA               | -1.21      | -1.42 | 0.06                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |
| 1.10  | 020715   | 13.240410      | 100.007813 | AA  | AA               | -1.20      | -1.12 | 0.00                |    |                     |    |                  |                  | DOV                 | N              |         |        |    |



|   |   |   |
|---|---|---|
| COATING INSPECTION – DATA COLLECTION FORM   |   |   |
| พื้นที่งาน : Region 9   |   |   |
| สถานที่ตรวจ : <input checked="" type="checkbox"/> ISO 9002 <input type="checkbox"/> ISO 14001 <input checked="" type="checkbox"/> ISO 45001 <input type="checkbox"/> อื่นๆ  |   |   |
| Location Details : SSUT1  | Route Name : RC350504   | Drawing :   |
| 720   |   |   |
| - PIPING <input checked="" type="checkbox"/> NORMAL INSPECTION (1 YEAR INTERVAL)  |   |   |
| - PIPERACK <input type="checkbox"/> NORMAL INSPECTION (1 YEAR INTERVAL) <input type="checkbox"/> FULL INSPECTION (5 YEAR INTERVAL)  |   |   |
| รูปที่ 1 Pipe Description or Line ID : RC350504   |   |   |
| Wall thickness : 1  | Pipe OD. : 16.0000  | Pipe Grade : X42 (42000) MAOP :                                     |
| Photo/ภาพ :<br> <br>  |   |   |
| General condition / สภาพโดยทั่วไป :<br>Water condensed / มีหยดน้ำเกาะ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Surface temperature / อุณหภูมิผิว : 0 °C   |   |   |
| Coating condition / สภาพ Coating :<br><input type="checkbox"/> Good <input checked="" type="checkbox"/> Local Disbonding <input type="checkbox"/> Extensive Disbonding<br><input type="checkbox"/> Cracked <input type="checkbox"/> อื่นๆ   |   |   |
| Holiday Tester / Holiday Detector :<br><input type="checkbox"/> ผ่าน <input type="checkbox"/> ไม่ผ่าน <input checked="" type="checkbox"/> ไม่ได้ตรวจ  |   |   |
| Corrosion condition / สภาพการกัดกร่อน Corrosion :<br><input type="checkbox"/> No corrosion <input checked="" type="checkbox"/> <20% w.t. <input type="checkbox"/> 30-60% w.t. <input type="checkbox"/> >60% w.t. <input type="checkbox"/> Defect อื่นๆ เช่น "dent" "crack" "etc."   |   |   |
| Corrosion size (if depth >20% w.t.) / ขนาด :<br>Depth mm. Length mm. Width mm.  |   |   |
| Inspection method / วิธีการที่ตรวจสอบ :<br><input checked="" type="checkbox"/> VT <input type="checkbox"/> UT <input type="checkbox"/> อื่นๆ  |   |   |
| Repair / การแก้ไข :<br><input type="checkbox"/> No repair <input checked="" type="checkbox"/> Coating With <input type="checkbox"/> อื่นๆ   |   |   |
| Next inspection interval / ตรวจสอบครั้งต่อไปภายใน :<br><input checked="" type="checkbox"/> 1 ปี <input type="checkbox"/> 3 ปี <input type="checkbox"/> 5 ปี <input type="checkbox"/> อื่นๆ  |   |   |
| Comment / หมายเหตุอื่นๆ<br>มีรายการ CM อยู่   |   |   |
| ผู้ตรวจ<br>Digital Signed<br><br>MR.JAKKRIT HROMPA<br><br>4/4/2025  | ตรวจสอบ<br>Digital Signed<br><br>MR.PAKASIT NOUNNIM<br><br>4/4/2025 | รับงาน<br>Digital Signed<br><br>MR.ANUPONG BANGKIEW<br><br>5/4/2025 |

|   |   |   |
|---|---|---|
| COATING INSPECTION – DATA COLLECTION FORM   |   |   |
| พื้นที่งาน : Region 9   |   |   |
| สถานที่ตรวจ : <input checked="" type="checkbox"/> ISO 9002 <input type="checkbox"/> ISO 14001 <input checked="" type="checkbox"/> ISO 45001 <input type="checkbox"/> อื่นๆ  |   |   |
| Location Details : SSUT2  | Route Name : RC350504   | Drawing :   |
| 720   |   |   |
| - PIPING <input checked="" type="checkbox"/> NORMAL INSPECTION (1 YEAR INTERVAL)  |   |   |
| - PIPERACK <input type="checkbox"/> NORMAL INSPECTION (1 YEAR INTERVAL) <input type="checkbox"/> FULL INSPECTION (5 YEAR INTERVAL)  |   |   |
| รูปที่ 1 Pipe Description or Line ID : RC350504   |   |   |
| Wall thickness : 1  | Pipe OD. : 16.0000  | Pipe Grade : X42 (42000) MAOP :                                     |
| Photo/ภาพ :<br> <br>     |   |   |
| General condition / สภาพโดยทั่วไป :<br>Water condensed / มีหยดน้ำเกาะ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Surface temperature / อุณหภูมิผิว : 0 °C   |   |   |
| Coating condition / สภาพ Coating :<br><input checked="" type="checkbox"/> Good <input type="checkbox"/> Local Disbonding <input type="checkbox"/> Extensive Disbonding<br><input type="checkbox"/> Cracked <input type="checkbox"/> อื่นๆ   |   |   |
| Holiday Tester / Holiday Detector :<br><input type="checkbox"/> ผ่าน <input type="checkbox"/> ไม่ผ่าน <input checked="" type="checkbox"/> ไม่ได้ตรวจ  |   |   |
| Corrosion condition / สภาพการกัดกร่อน Corrosion :<br><input checked="" type="checkbox"/> No corrosion <input type="checkbox"/> <20% w.t. <input type="checkbox"/> 30-60% w.t. <input type="checkbox"/> >60% w.t. <input type="checkbox"/> Defect อื่นๆ เช่น "dent" "crack" "etc." |   |   |
| Corrosion size (if depth >20% w.t.) / ขนาด :<br>Depth mm. Length mm. Width mm.  |   |   |
| Inspection method / วิธีการที่ตรวจสอบ :<br><input type="checkbox"/> VT <input type="checkbox"/> UT <input type="checkbox"/> อื่นๆ   |   |   |
| Repair / การแก้ไข :<br><input checked="" type="checkbox"/> No repair <input type="checkbox"/> Coating With <input type="checkbox"/> อื่นๆ   |   |   |
| Next inspection interval / ตรวจสอบครั้งต่อไปภายใน :<br><input checked="" type="checkbox"/> 1 ปี <input type="checkbox"/> 3 ปี <input type="checkbox"/> 5 ปี <input type="checkbox"/> อื่นๆ  |   |   |
| Comment / หมายเหตุอื่นๆ   |   |   |
| ผู้ตรวจ<br>Digital Signed<br><br>MR.JAKKRIT HROMPA<br><br>4/4/2025  | ตรวจสอบ<br>Digital Signed<br><br>MR.PAKASIT NOUNNIM<br><br>4/4/2025 | รับงาน<br>Digital Signed<br><br>MR.ANUPONG BANGKIEW<br><br>5/4/2025 |

|   |                               |          |          |
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## ILI Inspection Summary Report

### For pipeline NPS16 BV10-SSUT

Prepared by  
Piman Nenkaew

Verified by  
Krissada Chundang

Approved by  
Sanit Athasart

|   |                               |          |          |
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## ILI Inspection Summary Report in 2023

### For pipeline NPS16 BV10-SSUT

#### Scope of the report

The report is the summary of ILI pigging inspection result of pipeline NPS16 BV10-SSUT which start from launcher station on BV10 to SSUT metering station as shown in picture 1 below. This is report is not included nether integrity assessment nor fitness on service.

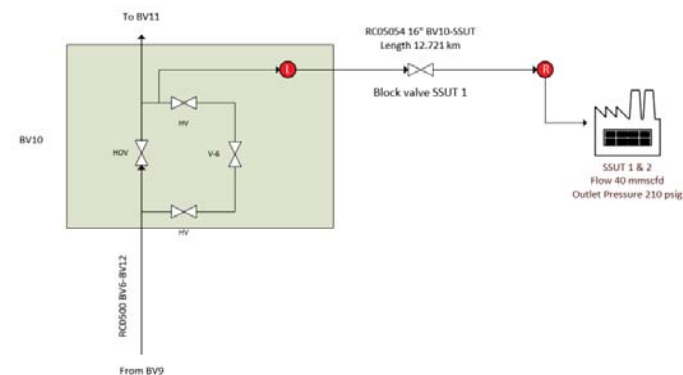



Figure 1 Simplified diagram of pipeline NPS16 BV10-SSUT


#### Basic Pipeline information

|                       |                     |                     |                     |
|-----------------------|---------------------|---------------------|---------------------|
| Size                  | 16 inch             | Length              | 11.0 Km             |
| Nominal WT            | 0.438"              | Type of seam weld   | ERW                 |
| SMYS                  | 42,000 psig         | UTS                 | 60,000 psig         |
| Year of commissioning | 2017                | Class location      | 4                   |
| Current MAOP          | 720 psig (~31%SMYS) | NOP                 | 350 psig (~15%SMYS) |
| ILI Operation date    | 2-3 Feb 2023        | Type of ILI PIG     | MFL+GEO+Mapping     |
| Vendor                | PIPECARE            | Previous inspection | Never               |

|   |                               |          |          |
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## 1. Summary

| Feature                         | Feature detail  | Feature Analysis   |
|---------------------------------|---|--|
| Internal metal loss             | Deep > 60% of wt: ไม่พบ   | <ul style="list-style-type: none"><li>ไม่พบ internal corrosion</li><li>พบ Internal mill anomaly จำนวน 34 จุดความลึกสูงสุด 13% of wt</li></ul>  |
|                                 | Deep < 60% of wt: ไม่พบ   |  |
|                                 | Deepest: -  |  |
|                                 | Min safe pressure > MAOP: Yes   |  |
|                                 | Max growth rate: 0.0 mm/year  |  |
|                                 | Avg. growth rate: 0.0 mm/year   |  |
| External metal loss             | Deep > 60% of wt: ไม่พบ   | <ul style="list-style-type: none"><li>ไม่พบ external corrosion</li><li>พบ external mill anomaly จำนวน 561 จุดความลึกสูงสุด 17% of wt</li></ul>   |
|                                 | Deep < 60% of wt: ไม่พบ   |  |
|                                 | Deepest: -  |  |
|                                 | Min safe pressure > MAOP: Yes   |  |
|                                 | Max growth rate: 0.0 mm/year  |  |
|                                 | Avg. growth rate: 0.0 mm/year   |  |
| Mechanical damage               | Plain dent: ไม่พบ   | <ul style="list-style-type: none"><li>Wrinkle 1 จุดที่พบความลึก 1.4% of OD ระยะ 2 m upstream จาก hot bend ลงด้านล่าง อาจจะเป็นไปได้ที่จะมาจาก manufacturer หรืองานก่อสร้าง หรืออาจจะไม่ได้มาจากทั้งคู่ที่กล่าวมา เนื่องจาก wrinkle พบที่บริเวณ 3 นาฬิกา ไม่ใช่ 6 นาฬิกาแบบที่ควรจะเป็น ควรติดตามตรวจสอบเพิ่มเติม</li></ul> |
|                                 | Max depth: -  |  |
|                                 | Dent with metal loss: ไม่พบ   |  |
|                                 | Max depth: -  |  |
|                                 | Dent with weld and metal loss: ไม่พบ  |  |
| Max depth: -                    |   |  |
| อื่น ๆ: พบ wrinkle 1 จุด        |   |  |
| อื่น ๆ                          | Metal object: 12 จุด  | <ul style="list-style-type: none"><li>Touch pipeline 3 จุด</li><li>Close to pipeline 9 จุด</li><li>ทั้ง 12 จุดไม่พบ anomaly or defect ใกล้เคียง</li></ul>  |
| Strain                          | Vertical strain event: ไม่พบ  | <ul style="list-style-type: none"><li>-</li></ul>  |
|                                 | Horizontal strain event: ไม่พบ  | <ul style="list-style-type: none"><li>-</li></ul>  |
|                                 | Horizontal/Vertical strain event: ไม่พบ   | <ul style="list-style-type: none"><li>-</li></ul>  |
| GW Assessment                   | GW Anomaly: 1 จุด   | <ul style="list-style-type: none"><li>ความลึกสูงสุด 14% of wt</li></ul>  |
|                                 | GW crack: ไม่พบ   | <ul style="list-style-type: none"><li>-</li></ul>  |
|                                 | GW ที่ควรติดตามเพิ่มเติม: ไม่พบ   | <ul style="list-style-type: none"><li>-</li></ul>  |
| จุดที่ควรตรวจสอบหรือติดตามต่อไป | จุดที่ควรติดตามต่อ<br>1. Wrinkle 1 จุดที่พบความลึก 1.4% of OD ระยะ 5,070 m จาก launcher |  |

|   |                               |          |          |
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| Feature    | Feature detail  | Feature Analysis |
|------------|---|------------------|
| Conclusion | <ul style="list-style-type: none"> <li>Metal loss และ mechanical damage ทั้งหมดอยู่ในเกณฑ์ที่ยอมรับได้</li> <li>ควรติดตามติดตามตรวจสอบ wrinkle 1 จุด</li> </ul> |                  |

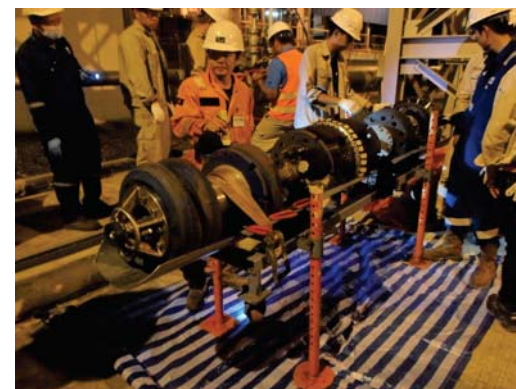
## 2. รายชื่อผู้ปฏิบัติงาน

| No | Name                  | Position         | Company |
|----|-----------------------|------------------|---------|
| 1  | Piman Nankaew         | Engineer         | PTT     |
| 2  | Manasavee Techocha    | Field specialist | PTT     |
| 3  | Panithi Nissaitrong   | Field specialist | PTT     |
| 4  | Khrongrat Thammatinna | Field specialist | PTT     |


## 3. สรุปผลการปฏิบัติงาน

- Kick: 2 Feb 23 23:51
- Receive: 3 Feb 23 0:48
- Debris: N/A
- Liquid: N/A
- PIG Condition: Good. No physical damaged from visual inspection
- Data: Complete
- ปัญหาที่พบ: N/A

ILI Tool after run





|   |                                |          |          |
|---|--------------------------------|----------|----------|
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#### 4. Metal Loss 10 most severe base on ASME B31.G Modified

| distance (m) | Up weld dist. (m) | Anomaly dimension class | Clock position (hh:mm) | Nominal t (mm) | Length (mm) | Width (mm) | Depth (%) | Surface loc. | ERF(B31G) |
|--------------|-------------------|-------------------------|------------------------|----------------|-------------|------------|-----------|--------------|-----------|
| -            | -                 | -                       | -                      | -              | -           | -          | -         | -            | -         |

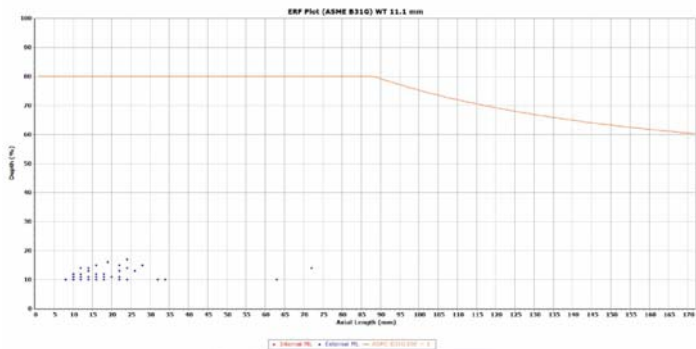


Figure 2 Shows pressure sentence plot

#### 5. Interested point need to be verified

ตรวจพบ wrinkle 1 จุด ขนาด 1.4% of OD ที่ระยะ 5,070.2 m ตามแสดงในรูปที่ 3 โดยจุด wrinkle อยู่บน pipe spool กับ HDD ที่มี hot bend 16 degree ในทิศทางลง และอยู่ก่อนถึงทางโค้งลง 2 m แสดงตามรูปที่ 4 ดังนั้นจุดนี้ที่มีความประมาณ 2.5 -3.0 m อยู่ในพิสัยที่สามารถตรวจสอบได้


|   |                                |          |          |
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Figure 3 Show wrinkle point

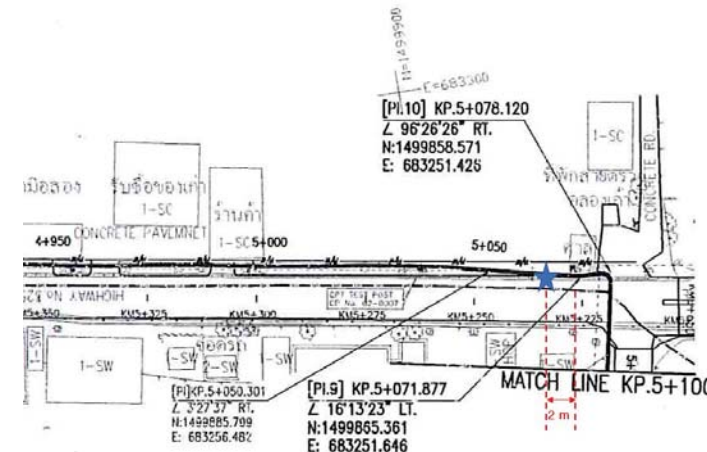


Figure 4 show wrinkle point with downward bend from alignment sheet (★ = wrinkle point)