

**LAMPIRAN**

Kepada Yth.  
Calon Responden  
Di tempat

Assalamu'alaikum Warahmatullahi Wabarakatuh

Saya yang bertanda tangan di bawah ini:

Nama : Gagaz Jalu Fauzi  
NIM : 14522016  
Program Studi : Teknik Industri FTI UII

Bermaksud untuk membuat penelitian “Implementasi Manajemen Resiko dan Manajemen Aset pada Rumah Air Kanoman 1 PDAM Kota Magelang”.

Penelitian ini sama sekali tidak akan menimbulkan merugikan bagi responden. Semua informasi dari hasil penelitian hanya akan digunakan untuk kepentingan penelitian dan akan dijaga kerahasiaannya. Jika saudara/I berkenan, maka saya mohon Anda untuk menandatangani lembar persetujuan yang sudah saya lampirkan.

Atas perhatian dan kesediaannya menjadi responden saya ucapkan terima kasih.

Wassalamu'alaikum Warahmatullahi Wabarakatuh

Hormat saya,

Gagaz Jalu Fauzi

Saya yang bertandatangan dibawah ini telah bersedia menjadi responden, setelah mendapatkan penjelasan dalam penelitian yang dilakukan oleh peneliti:

Nama : Gagaz Jalu Fauzi  
NIM : 14522016  
Topik : Implementasi Manajemen Resiko dan Manajemen Aset pada Rumah  
Air Kanoman 1 PDAM Kota Magelang

Demikianlah surat persetujuan ini saya buat dan saya tandatangani tanpa adanya paksaan dari pihak manapun. Saya juga menyadari bahwa penelitian ini tidak akan menimbulkan kerugian kepada saya sebagai responden, maka dari itu saya bersedia menjadi responden

Responden  
Magelang, Januari 2019

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Mohon memberi tanda silang (x) pada jawaban yang Bapak / Ibu anggap tepat dan mohon mengisi bagian yang membutuhkan jawaban tertulis.

| No | Risiko                  | <i>Likelihood</i> |   |   |   |   |   | <i>Consequence</i> |   |   |   |   |   | <i>Exposure</i> |   |   |   |   |   |
|----|-------------------------|-------------------|---|---|---|---|---|--------------------|---|---|---|---|---|-----------------|---|---|---|---|---|
|    |                         | 1                 | 2 | 3 | 4 | 5 | 6 | 1                  | 2 | 3 | 4 | 5 | 6 | 1               | 2 | 3 | 4 | 5 | 6 |
| 1  | As Pompa Bengkok        |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 2  | Baut Chasis Aus         |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 3  | Bearing Aus             |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 4  | Bearing Pojok Aus       |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 5  | Chassis Pompa           |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 6  | Elektromotor            |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 7  | Flexibel Pendingin      |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 8  | Kapasitor Rusak         |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 9  | Karet Kopling Aus       |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 10 | Kopel Pompa             |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 11 | Magnetikkontaktor       |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 12 | Pipa Produksi Bocor     |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 13 | Pipa Distribusi Bocor   |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 14 | Pipa Produksi Pecah     |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 15 | Pipa Distribusi Pecah   |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 16 | Pompa Sentrifugal Rusak |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 17 | Pompa Over Heat         |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 18 | Pompa Submersible Rusak |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 19 | Prepak                  |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 20 | Purifikasi oil Trafo    |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 21 | Sumber Mata Air Kering  |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |
| 22 | Pemadaman Listrik       |                   |   |   |   |   |   |                    |   |   |   |   |   |                 |   |   |   |   |   |

*Likelihood* : Probabilitas terjadinya bahaya yang menyertai suatu kejadian  
*Consequence* : Akibat yang mungkin ditimbulkan dari suatu kejadian/peristiwa  
*Exposure* : Frekuensi pemaparan terhadap bahaya atau sumber resiko

|   | <b>Keterangan</b>                     | <b>Kategori</b>               | <b>Niali</b> | <b>Deskripsi</b>   |                   |
|---|---------------------------------------|-------------------------------|--------------|--|-------------------|
| 1 | <b>Hampir Pasti</b>                   | <i>Almost Certain</i>         | <b>10</b>    | Kejadian yang hampir pasti terjadi jika ada kontak dengan bahaya               | <b>Likelihood</b> |
| 2 | <b>Mungkin</b>                        | <i>Likely</i>                 | <b>6</b>     | Kemungkinan terjadi 50:50  |                   |
| 3 | <b>Tidak Biasa tapi Mungkin</b>       | <i>Unusual but Possible</i>   | <b>3</b>     | Suatu kejadian yang tidak biasa namun masih memiliki kemungkinan untuk terjadi |                   |
| 4 | <b>Sedikit Kemungkinan Terjadinya</b> | <i>Remotely Possible</i>      | <b>1</b>     | Suatu kejadian yang sangat kecil kemungkinan terjadinya                        |                   |
| 5 | <b>Mungkin Terjadi</b>                | <i>Conceivable</i>            | <b>0,5</b>   | Tidak pernah terjadi walaupun telah bertahun-tahun tetapi mungkin terjadi      |                   |
| 6 | <b>Praktis Tidak Mungkin</b>          | <i>Practically Impossible</i> | <b>0,1</b>   | Sangat tidak mungkin terjadi   |                   |

|   |                      |                     |            |  |                     |
|---|----------------------|---------------------|------------|--|---------------------|
| 1 | <b>Malapetaka</b>    | <i>Catastrophe</i>  | <b>100</b> | Kerusakan fatal beragam fasilitas lebih dari \$1 juta, aktifitas dihentikan, terjadi kerusakan lingkungan yang sangat luas | <b>Consequences</b> |
| 2 | <b>Bencana</b>       | <i>Disaster</i>     | <b>50</b>  | Kematian, kerusakan permanen yang bersifat lokal terhadap lingkungan, kerugian \$ 500.000 - \$200.000                      |                     |
| 3 | <b>Sangat Serius</b> | <i>Very Serious</i> | <b>25</b>  | Terjadinya cacat permanen/penyakit parah, kerusakan lingkungan yang tidak permanen dengan kerugian \$ 50.000 - \$ 500.000  |                     |
| 4 | <b>Serius</b>        | <i>Serious</i>      | <b>15</b>  | Terjadi dampak yang serius tapi bukan cedera dan penyakit parah yang permanen, sedikit berakibat buruk pada                |                     |

|   |                |                   |   |   |  |
|---|----------------|-------------------|---|---|--|
|   |                |                   |   | lingkungan, dengan kerugian \$5000-\$50.000   |  |
| 5 | <b>Penting</b> | <i>Important</i>  | 5 | Membutuhkan penanganan medis, terjadi emisi buangan diluar lokasi, tetapi tidak mengakibatkan kerusakan dengan kerugian \$ 500 - \$ 5000  |  |
| 6 | <b>Nyata</b>   | <i>Noticeable</i> | 1 | Terjadi cedera atau penyakit ringan, memar bagian tubuh, kerusakan kecil kurang dari \$500, kerusakan ringan atau terhentinya proses kerja sementara waktu, tetapi tidak mengakibatkan pencemaran diluar lokasi |  |

|   |                      |                     |     |   |                 |
|---|----------------------|---------------------|-----|---|-----------------|
| 1 | <b>Terus-menerus</b> | <i>Continously</i>  | 10  | Beberapa Kali terjadi dalam sehari                | <i>Exposure</i> |
| 2 | <b>Sering</b>        | <i>Frequenty</i>    | 6   | Sekali terjadi dalam sehari                       |                 |
| 3 | <b>Kadang-kadang</b> | <i>Ossasionally</i> | 3   | Sekali dalam seminggu sampai sekali dalam sebulan |                 |
| 4 | <b>Tidak Sering</b>  | <i>Infrequent</i>   | 1   | sekali dalam sebulan sampai sekali dalam setahun  |                 |
| 5 | <b>Jarang</b>        | <i>Rare</i>         | 0,5 | Diketahui kapan terjadinya                        |                 |
| 6 | <b>Sangat Jarang</b> | <i>Very Rare</i>    | 0,1 | Tidak diketahui terjadinya                        |                 |

**NARASUMBER:** Pak Saeful Widayat

| <i>Likelihood</i> |   |   |   |   |   | <i>Consequence</i> |   |   |   |   |   | <i>Exposure</i> |   |   |   |   |   |
|-------------------|---|---|---|---|---|--------------------|---|---|---|---|---|-----------------|---|---|---|---|---|
| 1                 | 2 | 3 | 4 | 5 | 6 | 1                  | 2 | 3 | 4 | 5 | 6 | 1               | 2 | 3 | 4 | 5 | 6 |
|                   | X |   |   |   |   |                    |   |   |   | X |   |                 |   |   | X |   |   |
| X                 |   |   |   |   |   |                    |   |   | X |   |   |                 |   |   |   | X |   |
| X                 |   |   |   |   |   |                    |   |   | X |   |   |                 |   |   |   | X |   |
| X                 |   |   |   |   |   |                    |   |   | X |   |   |                 |   |   |   | X |   |
|                   |   |   |   | X |   |                    |   | X |   |   |   |                 |   |   |   |   | X |
| X                 |   |   |   |   |   |                    |   | X |   |   |   |                 |   |   | X |   |   |
|                   | X |   |   |   |   |                    |   |   | X |   |   |                 |   | X |   |   |   |
|                   |   |   |   | X |   |                    |   | X |   |   |   |                 |   |   | X |   |   |
|                   |   |   | X |   |   |                    |   |   | X |   |   |                 |   |   | X |   |   |
|                   |   |   | X |   |   |                    |   |   | X |   |   |                 |   |   | X |   |   |
|                   |   | X |   |   |   |                    |   |   | X |   |   |                 |   | X |   |   |   |
|                   | X |   |   |   |   |                    |   |   | X |   |   |                 |   | X |   |   |   |
|                   | X |   |   |   |   |                    |   |   | X |   |   |                 |   | X |   |   |   |
| X                 |   |   |   |   |   |                    |   |   | X |   |   |                 |   | X |   |   |   |
|                   | X |   |   |   |   |                    |   |   | X |   |   |                 |   | X |   |   |   |
|                   |   | X |   |   |   |                    |   | X |   |   |   |                 |   |   | X |   |   |
|                   |   |   | X |   |   |                    |   |   | X |   |   |                 |   |   |   | X |   |
|                   |   |   | X |   |   |                    | X |   |   |   |   |                 |   |   |   |   | X |
|                   |   |   | X |   |   |                    |   |   | X |   |   |                 |   |   |   |   | X |
|                   |   | X |   |   |   |                    |   | X |   |   |   |                 |   |   | X |   |   |
|                   | X |   |   |   |   |                    | X |   |   |   |   |                 |   |   |   |   | X |
|                   | X |   |   |   |   |                    |   | X |   |   |   |                 |   | X |   |   |   |

**NARASUMBER:** Pak Sriono

| <i>Likelihood</i> |   |   |   |   |   | <i>Consequence</i> |   |   |   |   |   | <i>Exposure</i> |   |   |   |   |   |
|-------------------|---|---|---|---|---|--------------------|---|---|---|---|---|-----------------|---|---|---|---|---|
| 1                 | 2 | 3 | 4 | 5 | 6 | 1                  | 2 | 3 | 4 | 5 | 6 | 1               | 2 | 3 | 4 | 5 | 6 |
| X                 |   |   |   |   |   |                    |   | X |   |   |   |                 |   |   |   | X |   |
|                   |   |   | X |   |   |                    |   |   | X |   |   |                 |   |   |   |   | X |
| X                 |   |   |   |   |   |                    |   | X |   |   |   |                 |   |   | X |   |   |
| X                 |   |   |   |   |   |                    |   |   | X |   |   |                 |   |   | X |   |   |
|                   | X |   |   |   |   |                    |   | X |   |   |   |                 |   |   |   |   | X |
|                   | X |   |   |   |   |                    |   | X |   |   |   |                 |   |   |   | X |   |
|                   |   |   | X |   |   |                    |   | X |   |   |   |                 |   |   |   |   | X |
|                   |   |   | X |   |   |                    | X |   |   |   |   |                 |   |   |   | X |   |
|                   | X |   |   |   |   |                    |   |   |   | X |   |                 |   |   | X |   |   |
|                   | X |   |   |   |   |                    |   | X |   |   |   |                 |   |   | X |   |   |
|                   |   | X |   |   |   |                    |   | X |   |   |   |                 |   |   |   | X |   |
|                   | X |   |   |   |   |                    |   | X |   |   |   |                 |   |   | X |   |   |
|                   | X |   |   |   |   |                    |   | X |   |   |   |                 |   | X |   |   |   |
|                   | X |   |   |   |   |                    |   | X |   |   |   |                 |   |   | X |   |   |
|                   | X |   |   |   |   |                    |   | X |   |   |   |                 |   |   | X |   |   |
|                   |   |   |   | X |   |                    |   |   |   | X |   |                 |   |   | X |   |   |
|                   | X |   |   |   |   |                    |   | X |   |   |   |                 |   |   | X |   |   |
|                   | X |   |   |   |   |                    |   | X |   |   |   |                 |   |   |   |   | X |
|                   | X |   |   |   |   |                    |   |   | X |   |   |                 |   |   | X |   |   |
|                   |   | X |   |   |   |                    | X |   |   |   |   |                 |   |   |   | X |   |
|                   | X |   |   |   |   |                    |   | X |   |   |   |                 |   | X |   |   |   |

**NARASUMBER:** Pak Yani Eko Nugroho

| <i>Likelihood</i> |   |   |   |   |   | <i>Consequence</i> |   |   |   |   |   | <i>Exposure</i> |   |   |   |   |   |
|-------------------|---|---|---|---|---|--------------------|---|---|---|---|---|-----------------|---|---|---|---|---|
| 1                 | 2 | 3 | 4 | 5 | 6 | 1                  | 2 | 3 | 4 | 5 | 6 | 1               | 2 | 3 | 4 | 5 | 6 |
|                   | X |   |   |   |   |                    |   |   |   | X |   |                 |   |   |   | X |   |
| X                 |   |   |   |   |   |                    |   |   | X |   |   |                 |   |   |   |   | X |
| X                 |   |   |   |   |   |                    |   |   | X |   |   |                 |   |   | X |   |   |
| X                 |   |   |   |   |   |                    |   |   | X |   |   |                 |   |   | X |   |   |
|                   |   |   |   | X |   |                    |   | X |   |   |   |                 |   |   |   |   | X |
|                   | X |   |   |   |   |                    |   | X |   |   |   |                 |   |   |   | X |   |
|                   |   |   | X |   |   |                    |   |   | X |   |   |                 |   |   |   |   | X |
|                   |   |   | X |   |   |                    |   |   | X |   |   |                 |   |   |   |   | X |
|                   | X |   |   |   |   |                    |   |   | X |   |   |                 |   |   | X |   |   |
|                   | X |   |   |   |   |                    |   |   | X |   |   |                 |   |   | X |   |   |
|                   |   | X |   |   |   |                    |   |   | X |   |   |                 |   |   |   | X |   |
|                   | X |   |   |   |   |                    |   |   | X |   |   |                 |   |   | X |   |   |
|                   | X |   |   |   |   |                    |   |   | X |   |   |                 |   |   | X |   |   |
|                   |   |   |   | X |   |                    |   |   | X |   |   |                 |   |   | X |   |   |
|                   | X |   |   |   |   |                    |   | X |   |   |   |                 |   |   | X |   |   |
|                   | X |   |   |   |   |                    |   |   | X |   |   |                 |   |   | X |   |   |
| X                 |   |   |   |   |   |                    |   |   | X |   |   |                 |   | X |   |   |   |
|                   | X |   |   |   |   |                    |   |   | X |   |   |                 |   | X |   |   |   |
|                   | X |   |   |   |   |                    |   |   | X |   |   |                 |   | X |   |   |   |
|                   | X |   |   |   |   |                    |   |   | X |   |   |                 |   | X |   |   |   |
|                   | X |   |   |   |   |                    |   | X |   |   |   |                 |   | X |   |   |   |
|                   |   | X |   |   |   |                    |   |   | X |   |   |                 |   | X |   |   |   |



**Kapasitas Distribusi**

| No | Bulan         | 2015             |                  | 2016             |                  | 2017             |                  |
|----|---------------|------------------|------------------|------------------|------------------|------------------|------------------|
|    |               | Kanoman I (M3)   | Kanoman II (M3)  | Kanoman I (M3)   | Kanoman II (M3)  | Kanoman I (M3)   | Kanoman II (M3)  |
| 1  | Januari       | 193.621          | 180.417          | 162.337          | 202.270          | 161.360          | 167.890          |
| 2  | Februari      | 194.450          | 175.301          | 191.456          | 194.290          | 165.391          | 176.900          |
| 3  | Maret         | 176.800          | 173.420          | 176.853          | 181.630          | 147.700          | 161.570          |
| 4  | April         | 190.680          | 197.310          | 191.040          | 197.520          | 179.065          | 184.109          |
| 5  | Mei           | 153.320          | 189.490          | 171.592          | 191.030          | 187.833          | 174.978          |
| 6  | Juni          | 201.816          | 192.050          | 201.816          | 192.050          | 198.130          | 178.520          |
| 7  | Juli          | 190.728          | 191.580          | 190.728          | 191.580          | 203.660          | 181.029          |
| 8  | Agustus       | 163.418          | 197.840          | 163.418          | 197.840          | 193.621          | 190.273          |
| 9  | September     | 181.760          | 181.760          | 181.760          | 191.458          | 172.000          | 175.990          |
| 10 | Oktober       | 185.518          | 191.730          | 185.518          | 191.730          | 168.300          | 170.446          |
| 11 | Nopember      | 179.262          | 171.386          | 179.262          | 171.386          | 206.236          | 157.250          |
| 12 | Desember      | 178.984          | 184.290          | 178.984          | 184.290          | 160.700          | 166.160          |
|    | <b>Jumlah</b> | <b>2.190.357</b> | <b>2.226.574</b> | <b>2.174.764</b> | <b>2.287.074</b> | <b>2.143.996</b> | <b>2.085.115</b> |

**Kapasitas Produksi**

| No | Bulan         | 2015             |                  | 2016             |                  | 2017             |                  |
|----|---------------|------------------|------------------|------------------|------------------|------------------|------------------|
|    |               | Kanoman I (M3)   | Kanoman II (M3)  | Kanoman I (M3)   | Kanoman II (M3)  | Kanoman I (M3)   | Kanoman II (M3)  |
| 1  | Januari       | 194.398          | 180.417          | 164.497          | 202.270          | 154.000          | 161.360          |
| 2  | Februari      | 194.810          | 175.301          | 191.456          | 194.290          | 135.071          | 216.950          |
| 3  | Maret         | 176.800          | 173.420          | 176.853          | 181.630          | 135.300          | 147.700          |
| 4  | April         | 191.400          | 197.310          | 191.400          | 197.520          | 125.349          | 182.131          |
| 5  | Mei           | 154.400          | 189.490          | 172.600          | 191.030          | 104.198          | 193.233          |
| 6  | Juni          | 202.176          | 192.050          | 202.176          | 192.050          | 123.018          | 199.200          |
| 7  | Juli          | 191.808          | 191.580          | 191.808          | 191.580          | 114.644          | 204.560          |
| 8  | Agustus       | 164.498          | 197.840          | 164.498          | 197.840          | 117.956          | 193.621          |
| 9  | September     | 191.458          | 182.120          | 164.498          | 245.877          | 143.710          | 172.000          |
| 10 | Oktober       | 185.518          | 192.450          | 185.518          | 192.450          | 124.200          | 168.300          |
| 11 | Nopember      | 179.982          | 174.290          | 179.982          | 174.290          | 121.893          | 206.236          |
| 12 | Desember      | 181.684          | 184.290          | 181.684          | 184.290          | 136.600          | 160.700          |
|    | <b>Jumlah</b> | <b>2.208.932</b> | <b>2.230.558</b> | <b>2.166.970</b> | <b>2.345.117</b> | <b>1.535.939</b> | <b>2.205.991</b> |

**Kapasitas Sumber**

| No | Bulan         | 2015              |                  | 2016              |                  | 2017              |                  |
|----|---------------|-------------------|------------------|-------------------|------------------|-------------------|------------------|
|    |               | Kanoman I (M3)    | Kanoman II (M3)  | Kanoman I (M3)    | Kanoman II (M3)  | Kanoman I (M3)    | Kanoman II (M3)  |
| 1  | Januari       | 1.362.529         | 180.417          | 1.332.628         | 202.270          | 1.439.144         | 167.890          |
| 2  | Februari      | 1.362.941         | 175.301          | 1.359.587         | 194.290          | 1.385.081         | 176.900          |
| 3  | Maret         | 1.231.885         | 173.420          | 1.231.938         | 181.630          | 1.276.498         | 161.570          |
| 4  | April         | 1.555.562         | 197.310          | 1.291.329         | 197.520          | 1.282.060         | 187.500          |
| 5  | Mei           | 1.520.472         | 189.490          | 1.303.048         | 191.030          | 1.370.908         | 176.256          |
| 6  | Juni          | 1.332.624         | 192.050          | 1.264.008         | 179.820          | 1.292.160         | 178.520          |
| 7  | Juli          | 1.322.256         | 191.580          | 1.368.625         | 204.230          | 1.393.367         | 184.809          |
| 8  | Agustus       | 1.351.377         | 197.840          | 1.385.845         | 203.630          | 1.386.366         | 190.273          |
| 9  | September     | 1.336.770         | 191.458          | 1.366.445         | 192.657          | 1.366.445         | 175.990          |
| 10 | Oktober       | 1.340.168         | 192.450          | 1.413.233         | 182.350          | 1.396.533         | 176.660          |
| 11 | November      | 1.373.120         | 174.290          | 1.385.138         | 189.680          | 1.242.133         | 157.250          |
| 12 | Desember      | 1.374.822         | 184.290          | 1.329.876         | 194.140          | 1.354.243         | 166.160          |
|    | <b>Jumlah</b> | <b>16.464.526</b> | <b>2.239.896</b> | <b>16.031.700</b> | <b>2.313.247</b> | <b>16.184.938</b> | <b>2.099.778</b> |



Lampiran 1 Rumah Air Kanoman



Lampiran 2 Bak Pelepas Tekanan



Lampiran 3 Rumah Air Kanoman



Lampiran 4 Sumber Air Kanoman



Lampiran 5 Kantor PDAM Kota Magelang