ABSTRAK

PT Pertamina Yogyakarta bertanggungjawab untuk memenuhi kebutuhan BBM, khususnya wilayah Yogyakarta. Distribusi dilakukan dengan menggunakan tiga jenis kendaraan yaitu kendaraan berkapasitas 32 kl, 24 kl dan 16 kl. Dalam menentukan rute distribusi, operator memilih SPBU berdasarkan order pertama dan jenis kendaraan yang ditentukan berdasarkan kemampuan kendaraan melakukan manuver di SPBU tersebut. Penentuan rute belum mempertimbangkan waktu yang mempengaruhi distribusi seperti rata-rata kencapatan, waktu loading, waktu discharging serta adanya batasan waktu penyelesaian tur. Sehingga saat permintaan tinggi distribusi BBM mengalami keterlambatan sebanyak 3 SPBU dari 29 SPBU pada cluster I.

Penelitian ini menganalisis distribusi BBM pada 17 Mei 2018 pada cluster 1 untuk produk Premium dan Bio-Solar. Dalam menentukan rute distribusi dan waktu distribusi menggunakan metode VRP dengan mempertimbangkan Heteregeneous Fleet, Split Delivery, Multiple Product, Multiple Trip dan Time Windows. Perhitungan dilakukan dengan cara squential insertion dimana pelanggan terpilih berdasarkan CT terkecil.

Hasil dari penelitian ini menunjukkan bahwa setelah dilakukan pengolahan didapatkan bahwa pelanggan yang terlambat berkurang menjadi 1 dari 3 pelanggan yang terlambat. Total jarak tempuh berkurang menjadi 693,3 km dari 701,5 km. Total waktu penyelesaian tur berkurang menjadi 71,819 jam dari 81,819 jam. Serta biaya distribusi bertambah menjadi Rp 20.754.119.875,00 dari Rp 18.511.210.625.00.

Kata Kunci: ***Distribusi, VRP, Squential insertion, PT Pertamina, BBM, Premium, Bio-Solar, heteregeneous fleet, split delivery, multiple product, mutliple trip, tiwe windows***

ABSTRAK

PT Pertamina Yogyakarta is responsible to fulfil the demand of fuel oil, especially in Yogyakarta region. They distribute the fuel oil using 3 type of trucks where each truck type has a different capacity that can cater 32 kilo liter, 24 kilo liter and 16 kilo liter. To determine the distribution route, the operator sorts the gas station based on the first order, and the type of the truck is determined based on the truck feature and possibility to do a maneuver in that station.The route distribution has not factored in the external variables that can affect the time of the whole operation, such as the average swiftness of loading time, discharging time and the limitation of time to complete the entire route distribution. Currently, the distribution to serve the high demand of fuel oil tend to have delay in 3 stations out of 29 stations in the first cluster.

This research analyzed the fuel oil BBM on the 17th May 2018 of the first cluster for the Premium and Bio-Solar product. VRP method is used to determine the route and time of distribution where Heterogenous Fleet, Split Delivery, Multiple Product, Multiple Trip and Time Windows are factored in into the consideration. The calculation is done with sequential insertion where the customer was selected based on the lowest CT.

The result of this research showing the number of late customer reduced, from three to one. The total number of mileage travelled shortened from 701,50 km to 693.30 km. The total time it takes to finish the route fastened to 71,819 hours from 81,819 hours while the distribution cost raised to Rp 20.754.119.875,00 from Rp 18.511.210.625.00.

Keywords : Distribution, VRP, Sequential Insertion, PT Pertamina, BBM, Premium, Bio-Solar, Heterogeneous Fleet, Split Delivery, Multiple Product, Multiple Trip, Time Windows.