Camel Trucking has a long term shipping contract with Hopeless Ventures Inc. Hopeless produces industrial quality generators at four manufacturing plants in Easton, Westville, Northbrook, and Southburg. Output from the four plants is shipped to warehouses in Singleton, Duce, Tripoli, Foura, Quincy, Six Gun City, Savannah, and Ochoa. Weekly production capacity and shipping costs are shown in the tables below.

Use the current weekly demand shown in Table 3, find the cost minimizing routing of generators from the four plants to the nine warehouses. Your answer must include a model formulation and a shipping schedule, which includes a list of recommended shipments, cost of each shipment and total shipping cost.

**Table 1: Weekly Production Capacity by Plant**

|  |  |
| --- | --- |
|  | Production Capacity |
| Easton | 1885 |
| Westville | 1675 |
| Northbrook | 2100 |
| Southburg | 2250 |

**Table 2: Shipping Costs**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Singleton | Duce | Tripoli | Foura | Quincy | Six Gun City | Savannah | Ochoa | Nîmes |
| Easton | 36 | 45 | 31 | 38 | 46 | 27 | 25 | 48 | 50 |
| Westville | 34 | 34 | 41 | 33 | 24 | 30 | 31 | 32 | 20 |
| Northbrook | 31 | 47 | 36 | 42 | 25 | 28 | 30 | 37 | 47 |
| Southburg | 44 | 31 | 27 | 27 | 31 | 39 | 46 | 43 | 23 |

**Table 3: Current Weekly Demand**

|  |  |
| --- | --- |
| **City** | **Demand** |
| Singleton | 828 |
| Duce | 668 |
| Tripoli | 287 |
| Foura | 512 |
| Quincy | 552 |
| Six Gun City | 457 |
| Savannah | 697 |
| Ochoa | 745 |
| Nîmes | 593 |