Date: Thursday, 10 March 2016

SCOPE OF WORK (VACUUM CLEANING SERVICES FOR SMELTER AND REFINERY)

1. **Service to be rendered:**
   - Vacuum cleaning of different materials and dump them at a dumping area provided by the end-user (onsite).

2. **Areas of Service:**
   - Reverb furnace
   - Coal mill house
   - Waste heat boilers
   - Refinery boiler room
   - Refinery coal hoppers
   - Reverb and convertors, main structural beams and platforms

3. **Hours to be worked:**
   - As and when required, end-user to create an order number before work commences.
   - Supplier to have standby personnel and equipment.
   - Contractor to bill the actual vacuuming hours, NB!! The erecting of equipment on site is not included in as part of the vacuuming.

4. **Legal/SHEQ requirements:**
   - All tools and equipment must be cleared by contract management.
   - All personnel to be medically fit and to have all training requirements as per Palabora Copper Standards.
   - While on site, follow the policies and procedure of PMC for safe execution

5. **Equipment required:**
   - Mobile 75 to 90 KW Vacuum units (electrical 550V or diesel) of 3000-4000m³/hour flow and suction of -70 to -80kpa pressure.
   - Mobile 5 to 10 tones tanker.
   - Flexible hoses and coupling.
   - Portable vacuuming machines to access areas where there is space limitations.
6. **Required number of laborers:**

- Five (5) equipment operators and one supervisor.

7. **Technical info of material to be vacuumed:**

- Temperature: Ambient to 260°C.
- Size: 1mm to 20mm.
- Moisture: Wet and dry
- Highest Suction Point: 40m.
- Lowest Suction Point: -3m i.e. hoppers, bins etc.
- Shortest suction distance: 5m
- Longest floor distance: 10m
- Material to be vacuumed: Coal, hot ash, silica flux, concentrate and dust.

Signatures:

Itumeleng Ngoae
Smelter and Refinery Maintenance Manager