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## STUDY ON VALUATION OF PLANT AND MACHINERY – CASE STUDY OF HERBAL PLANT

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**Abstract:** Valuation is the analytical process of determining the current worth of an asset or a company. Simply, valuation is the technique of determining the current market value of the property such as industrial, residential, commercial, agricultural land. Value is determined on basis of its selling price and rent or income it can fetch. The purpose of this is to introduce people with general field practice of valuation. This study covers the methodology verified by the government approved valuer and concerned field expert. The finding of this study is likely to have important implications in the valuation profession. This study directly introduces users with actual practice of valuation carried out in the field so that they can compare the theories and actual methodology. This study will result in stimulating debate and a realization of a need for a theory which supports a validated process of valuation.

The objective of this is to identify the market value of plant and machinery properties for purpose To Assess the Fair Market Value of Oil Manufacturing Plant (Location- Sinner) which is situated in Nashik (Maharashtra), India. This study helps owner to know the actual condition of industry and simplify the finance amount of the property. The valuation of the property helps the owner of the property to know the actual rate of the property.

**Keywords - Methodology, Industrial Property, Field practice, Valuer, Valuation, Market Value, Finance.**

### I.INTRODUCTION

Valuation can be defined as the process of estimating value. Value of the property depends on the circumstances of the case such as structure, life, maintenance, location, etc. Valuation of firms and projects is the core topic in business and finance. Valuation is carried out basically for financial activities in the economy i.e. Investment, buying and selling, loan and mortgage etc.

A property valuation is an inspection carried out to help determine the current market value of a property. It is usually undertaken by an estate agent or an independent valuer, typically acting on the instructions of the vendor or a lending institution who are considering funding its purchase. Buyers may also request a property valuation if they are considering purchasing a property, in addition to structural surveys that assess its physical condition.

Before providing a mortgage or refinancing, a lending institution (such as a bank) may request a valuation to ensure the loan can be covered by the security value of the property. This gives them with the confidence to lend the capital, knowing that if the mortgage goes unpaid, they can recover any outstanding amount by re-selling the property.

Preferred licensed property valuers tend to be used by lending institutions. Estate agents tend to conduct property valuations for sellers of the property. The valuation provided by an estate agent and that provided by a licensed valuer may be different. This is because estate agents are working for the vendor (i.e. the seller), and receive commission based on the price that the property is sold at. They may, therefore, be more optimistic in their assessment of the property's worth than a licensed valuer who is legally responsible for the information provided by them, so must produce their valuation based on facts and accurate up-to-date data.

It is important that sellers ensure the property is in as clean and tidy a condition as possible prior to the valuation, as this can have an impact, as can the state and style of decorations, furnishings, and so on.

A property valuation is typically produced as a report and, in addition to photographs and plans may contain the following information:

- Age of the machine/equipment.
- A description of the construction of the industry.
- Size of the land and building for the industry.
- Utilization of the machine.
- Details of fixtures and fittings.
- Physical condition, wear and tear, etc.
- Details of any issues that need addressing.
- Deterioration due to environmental conditions.
- Comparative sales in the area.

- Use class and extant permissions such as planning permission.
- Development plans that might change the value of the property in the future.
- Impairment of functional capacity.
- Efficiency of the machine.
- Power Consumption of the equipment.
- Raw Material availability.

In order for the valuation to be as fair and accurate as possible, a property will typically be compared with other similar properties in the local area. Valuers will examine planning restrictions, by-laws, council zoning, and so on. Factors such as local infrastructure, reputation and attractiveness of the neighborhood, market demand, and amenities (e.g. schools, hospitals, green spaces, and so on), will also be taken into consideration.

## II. DEPRECIATION

### Methods of Depreciation and How to Calculate Depreciation:

In Accounting, there are various methods for calculating depreciation. A company can adopt any of these methods of calculating depreciation depending on its needs. Some of the methods for calculating depreciation are:

- Straight-line method
- Written down Value method
- Annuity method
- Sinking Fund method
- Production Unit method

So let us study the methods of calculating depreciation in detail.

#### Straight-line Method

The straight-line method of depreciation is the most simple and easy to use depreciation method. It is the most commonly used method of depreciation. It is also called the Original cost method, Fixed Installment method or Equal Installment method. Under this method, the depreciation calculation is done by deducting the residual value from the Cost of the asset and then the amount is divided by the number of years the asset was used for or its useful life. The same amount of depreciation is charged every year on the original cost of the asset. The amount of depreciation is charged to the Profit and Loss Account every year. For better understanding, we have given the straight-line depreciation formula.

#### Straight-line Method Formula is:

$$\text{Depreciation Formula: } \frac{\text{Cost of Asset - Residual Value}}{\text{Useful life of the asset}}$$

$$\text{Depreciation Rate Formula: } \frac{\text{Amount of Depreciation}}{\text{Original Cost of the Asset}} \times 100$$

#### Written Down Value Method

The written down value method also known as diminishing balance method or reducing balance method is a method of calculating depreciation in which a fixed percentage of depreciation is charged on the reducing value of the asset every year. While calculating depreciation in the diminishing balance method, the salvage value of the asset is not taken into consideration. The amount of depreciation decreases every year under this method. The diminishing depreciation method is calculated by the formula:

$$\text{Depreciation, reducing balance method: } \frac{\text{Rate of Depreciation}}{100} \times \text{Book Value}$$

$$\text{Calculation of depreciation rate under diminishing balance method: } 1 - (s/c)^{1/n} \times 100$$

Where, S is the scrap value of the asset

C is the cost of the asset and n is the useful life of the asset.

Some companies or organizations also use the double-declining balance method, which results in a large amount of depreciation expense. Double declining balance method is a type of diminishing balance method in which the depreciation factor is 2X than the straight-line method.

Double Declining Balance Method Formula:

$$\text{Depreciation} = 2 \times \text{SLDP} \times \text{BV}$$

Where, SLDP is Straight-line Depreciation Percentage

BV is Book Value

#### Annuity Method

The annuity method of depreciation calculates depreciation on the asset by calculating its rate of return. This method considers the asset as an investment. It takes into consideration the internal rate of returns on the cash outflows and inflows of the asset.

Depreciation cost formula under the annuity method is:

$$\text{Depreciation} = (\text{Cost of the Asset} - \text{Residual Value}) \times \text{Annuity factor}$$

**Sinking Fund Method**

The Sinking fund method of depreciation is a method of calculating depreciation where enough amounts is accumulated at the end to replace the asset at the end of its useful life. Here the amount of depreciation is charged to a sinking fund account which is invested in various government bonds and securities. The interest earned from these securities is used to replace the asset.

Sinking Fund Depreciation Method Formula:

Depreciation Value Formula:  $(\text{Cost of the asset} - \text{Residual value}) \times \text{Present value of Rs. 1 at sinking fund tables for a given rate of interest}$

**Production Unit Method**

The Production unit method takes into consideration the number of units that the machine has produced in a year. The depreciation cost depends on how much the machine or asset has been used over a year. The amount of depreciation formula under this method is:

$$\text{Depreciation} = \frac{\text{Estimated Total Cost} - \text{Residual Value}}{\text{Estimated Total Output}} \times \text{Actual Output during the year}$$

**III. CASE STUDY**

TABLE 1- BASIC DETAILS OF PROPERTY

VALUATION REPORT	
Year	2021-2022
Company name	KHOJATI HERBAL
Property Owner Name	Mr. Zahid Banatwalla
Property Address	No.B/52, MIDC, Malegaon Taluka Sinnar, Nashik, Maharashtra, 422103, India
If the asset is under joint Ownership/Co-ownership, share of each owner	Joint Ownership
Latitude, Longitude	19.88530° N, 73.97905° E
Reference Date	2021
Valuer	XYZ
Whether indigenous or imported	indigenous
Date of Inspection	May 2022
Valuation for	Study Purpose
Purpose of Valuation	To Assess the Fair Market Value of Oil manufacturing plant
Brief Description	This Industry is Located in the well-known areaof Sinner Near to TI Cycle It is Near Highway.
Age of Company	20 years

## VALUATION OF PLANT AND MACHINERY (KHOJATI HERBAL)

Khojati herbal oil manufacturing machines having Technical Specification and various Auxiliary Equipment/Accessories detailed as under:

TABLE 2: VALUATION REPORT OF PROPERTY

Sr. No.	Description of M/C	Qty.	Present day Replacement value of identical M/C	Age of M/C	expected life of M/C	Assessed fair Market Value As on 2022
			(Rs.)	(Yrs.)	(Yrs.)	(Rs.)
1	Heating kettle Capacity – 50 kg Material – SS304 Sr. no.- 1451 Frequency – 50-60 Hz Surface treatment- polished Automation grade- semi automatic	1	2,50,000	6	15	1,60,000
2	OIL FEELING,CAPPING AND LABELING MACHINE Capacity- 40-60 BPH Feeling head – 4 nozzles Material – SS304 Sr. no.- 3093-19 Frequency – 50-60 Hz Surface treatment- polished Automation grade-fully automatic	1	6,20,000	3	10	4,52,600
3	OIL CONTAINER Capacity- 100 Ltr Material- SS304 Surface treatment- polished Automation grade- manual	2	2,05,000	6	20	1,49,650
Auxiliary Equipment/Accessories:						
4	Pipes and valves Material – SS304 Surface treatment- polished	lot	21000	6	10	9660

5	Flameless motor Capacity – 1 HP Voltage -415 volt Frequency -50 Hz Ambient temp. – 50 °C	1	12000	6	10	5520
					Total	Rs:7,77,430
	Less obsolescence factor **@ 7.5 % - on Rs: 612600 (Not considered item Sr. Nos.-3,4 and 5)  OBSOLESCENCEFACTOR** With the rapidtechnological development Modern day Machines with advanced Features and latest design are more precise, faster in production, economicalin working, less labor oriented and morereliable. As such anObsolescence factor of 7.5% has been adopted to arrive at the fair Assessed Value.					(-)Rs:45945  Rs:731485  SUB TOTAL SAY,  Rs:7,32,000

### BASIS OF VALUATION

1. This refers to assess the Fair Market Value of Oil Manufacturing Plant (Location- Sinner) which is situated in Nashik (Maharashtra), India. This study helps owner to know the actual condition of industry and simplify the finance amount of the property. The valuation of the property helps the owner of the property to know the actual rate of the property. The Equipment's are of reputed 'Make' and have been found well maintained and in satisfactory working condition.

2. Column No.4 shows the replacement value of a new and almost identical Machine. This is the price one is required to incur-if Equipment having almost identical specification is procured as on date of valuation. This has been arrived at adding the basic price (as given by supplier/manufacture with the freight and transit insurance charges and also includes the installation expenses).

3. Column No.5 shows the age of machine and Col. No.6 in the report shows its expected Useful working life-depending on the plant-load duty and the overall condition. The Estimated Useful life of a Machine/Equipment is the period/duration of time the asset is productively employed. The Equipment may be operated even beyond the estimated Useful life-which is known as its "Physical Life"-but only at a heavy maintenance cost, high fuel/energy consumption and unreliable output because of frequent breakdowns.

For calculating depreciation, straight line method of depreciation has been adopted, a suitable and reasonable usable future expected life of Equipment has been presumed after giving strictly due consideration to its actual present day overall operating condition, maintenance, extent of wear sustained owing to the nature of plant duty and the formula used to arrive at the depreciation is as:

$$\text{Depreciation "F" = } \frac{\text{Age in year}}{\text{(Age in year + Future life expectancy in years)}} \times 0.90^*$$

\* Salvage value has been considered as 10%

Total Depreciation = Replacement Value x F

And, Fair Assessed Value = (Replacement Value - Total Depreciation)

#### IV. RESULT AND DISCUSSION:

As a result of thorough inspection, appraisal and analysis and taking into consideration present day replacement cost of similar machines, their general overall condition, upkeep and other factors such as age, obsolescence and economy of operation-viz-a-viz latest and new items incorporating improved design/ technique, in my considered opinion, Fair Market Value of machines under reference as on date works out as Rs 7.32 lakhs (seven Lakhs thirty two thousand rupee Only).

#### V. CONCLUSION:

- This project is done for understanding the valuation process of plant and machinery in guidance of Mr. Amol Raundal my project guide.
- This project gives the knowledge of calculating the Fair Market Value of the property.
- The assessment of the Fair Market value was carried out at asset level. The aggregate of the individual Fair Values presented here takes account of the marketing period and the transaction costs of the individual assets and does not reflect any discounts or premiums on the sales of the whole portfolio or if part of the portfolio were to be marketed simultaneously or in lots.
- The industry under valuation is khojati herbal, No.B/52, MIDC, Malegaon Taluka Sinnar, Nashik, Maharashtra, 422103, India
- The age of company is approx. 20 years This Industry is Located in the well-known of sinner near to TI cycle it is near highway.
- To Assess the Fair Market Value of oil manufacturing plant.
- There are no negative values to the report.

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