

Realized Value of Tree Improvement

Mike Warjone



- What is a continued investment in tree improvement worth to a company?
- What is a pound of improved seed really worth?



Reforestation Costs (per acre)

Improved Seed	\$ 19
Seedlings	140
Spraying	60
Planting Labor	120
Maintenance	<u>50</u>
Total Reforestation \$/Acre	\$389

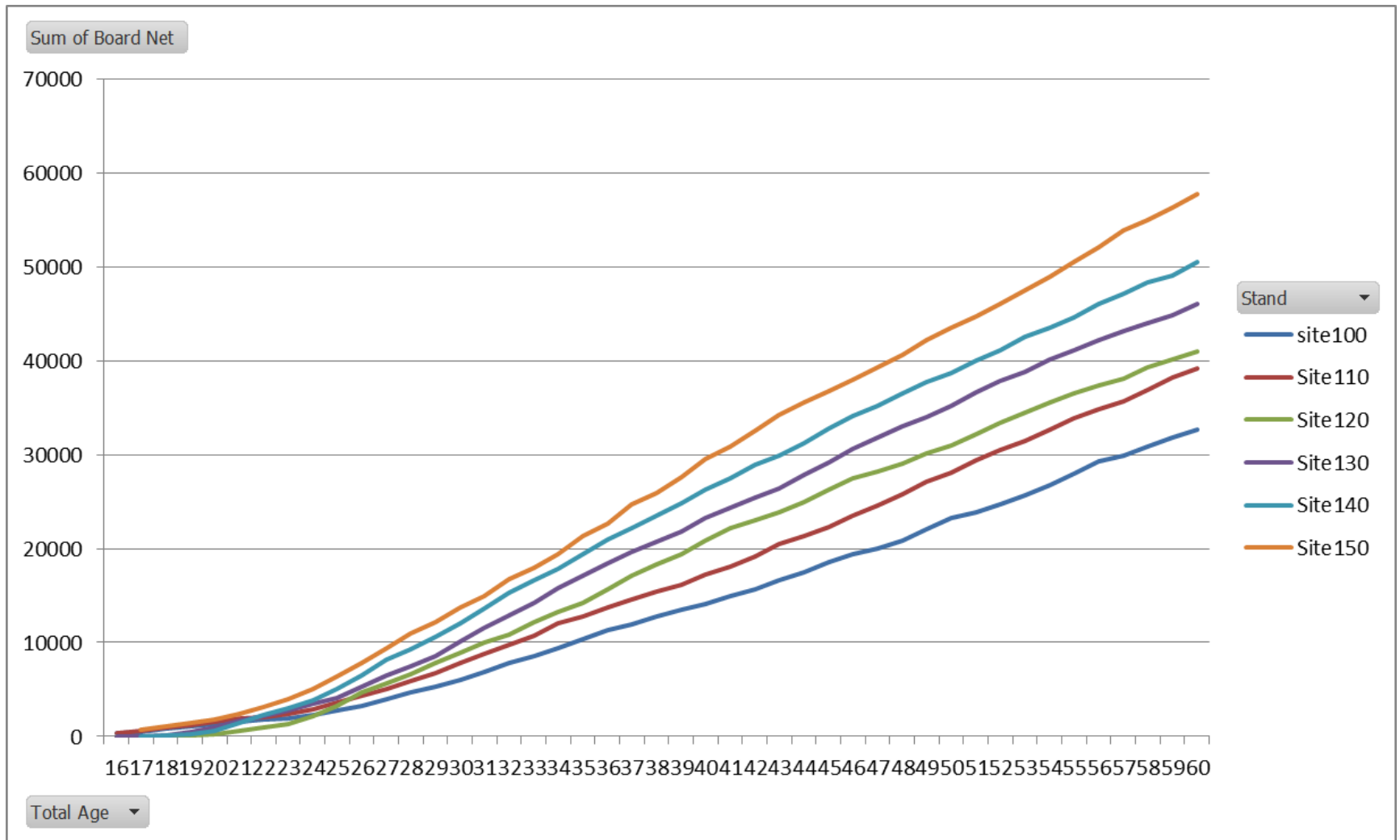




Reforestation Costs (per acre)

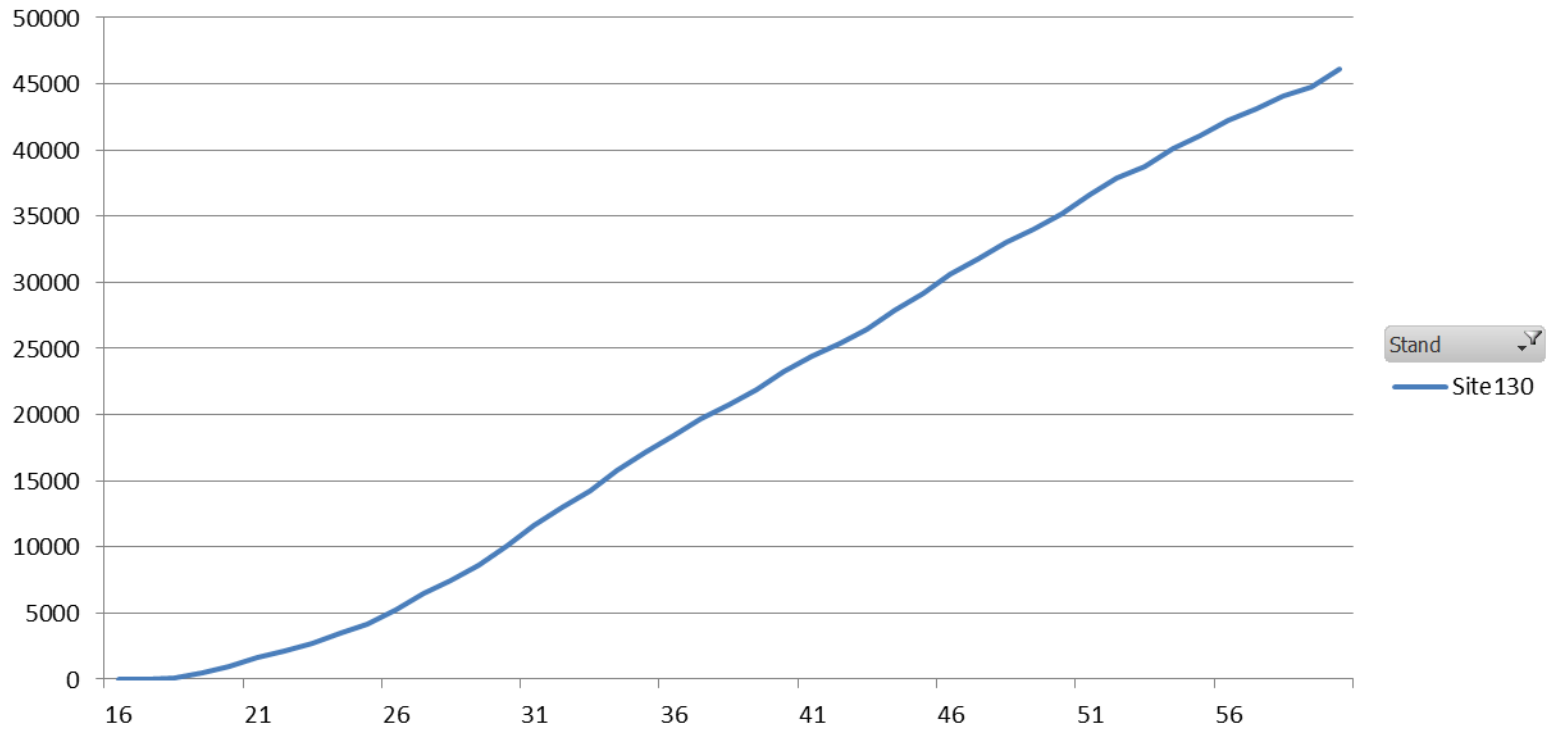
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Organon Yields (Unimproved)



Sum of Board Net

Site130



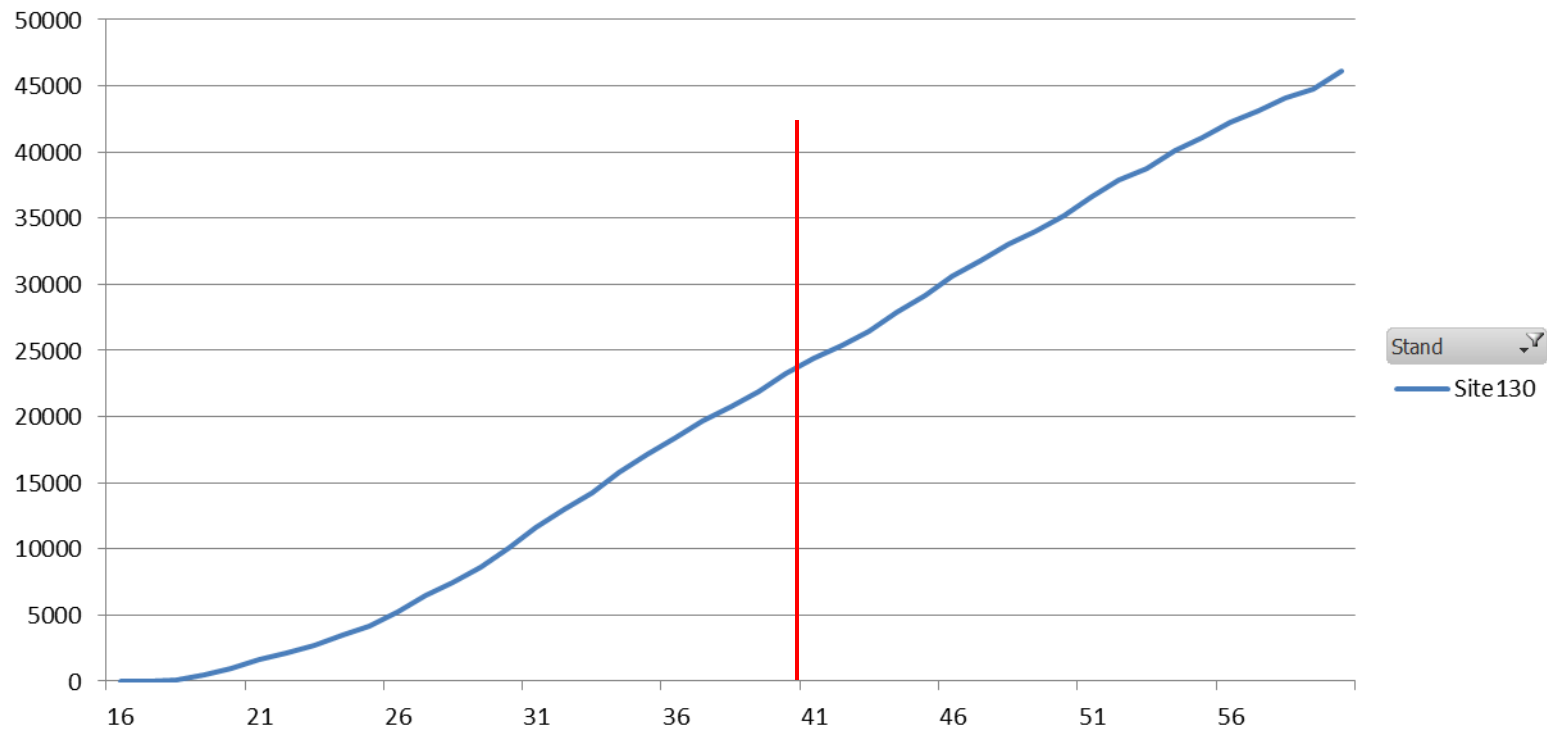
Stand

Site130

Total Age

Sum of Board Net

Site130



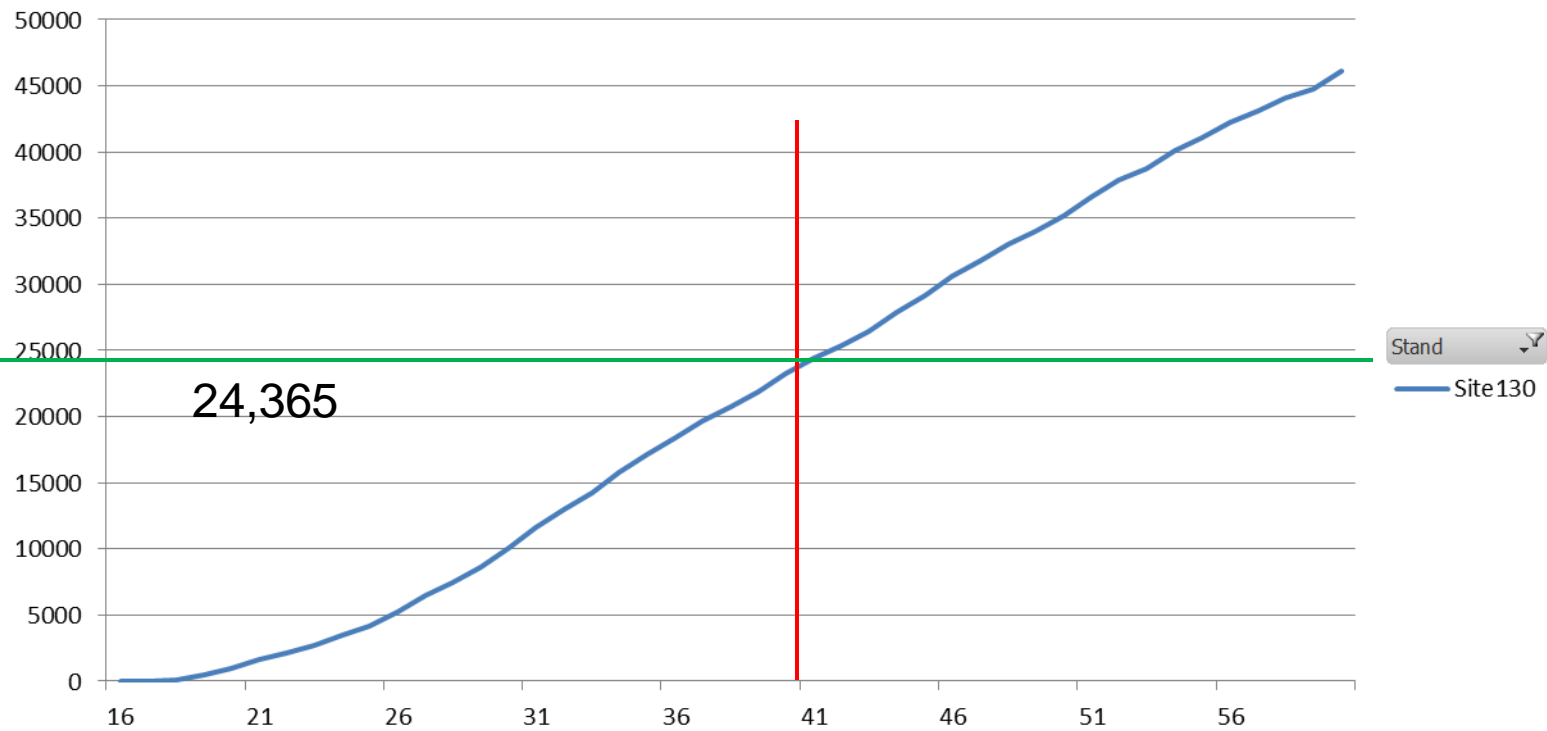
Stand

Site130

Total Age

Sum of Board Net

Site130



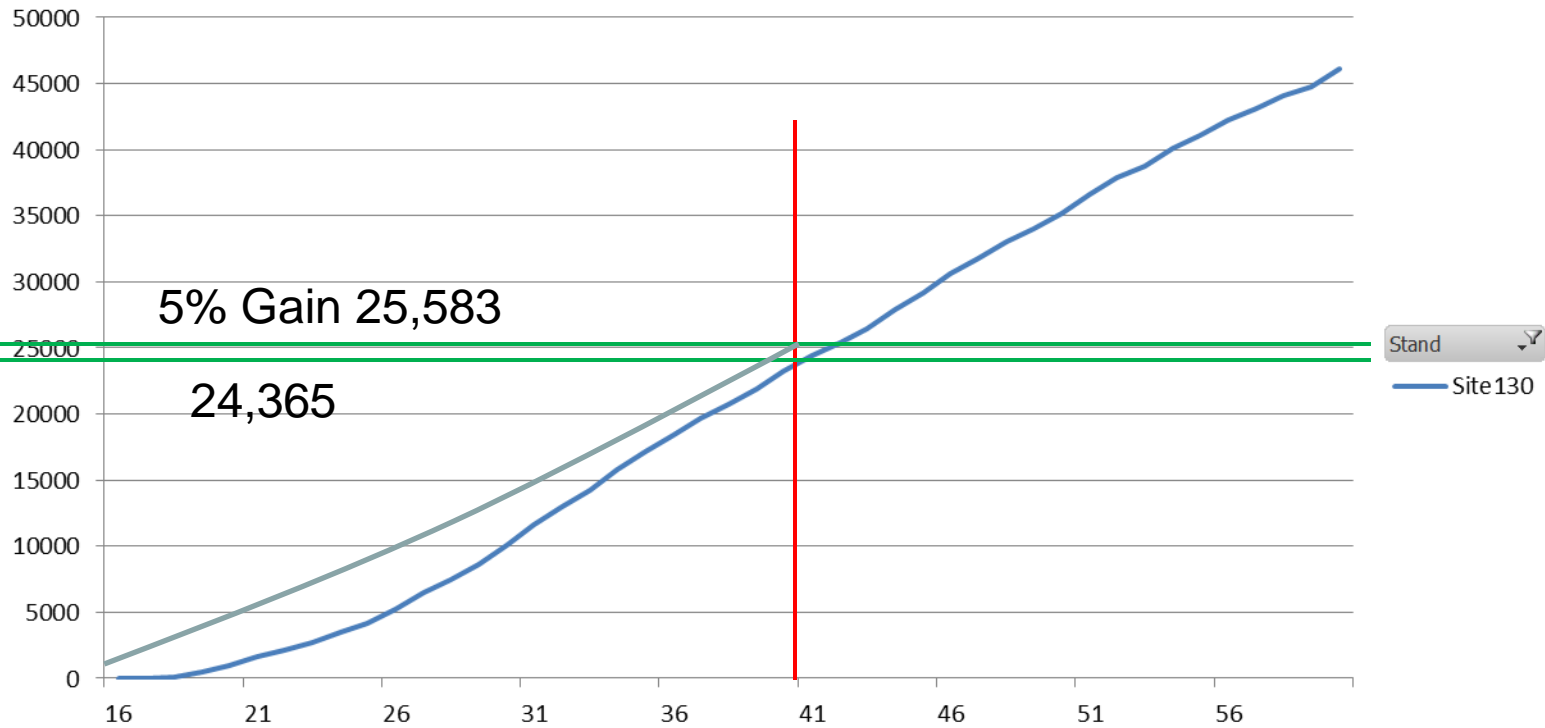
Stand

Site130

Total Age

Sum of Board Net

Site130



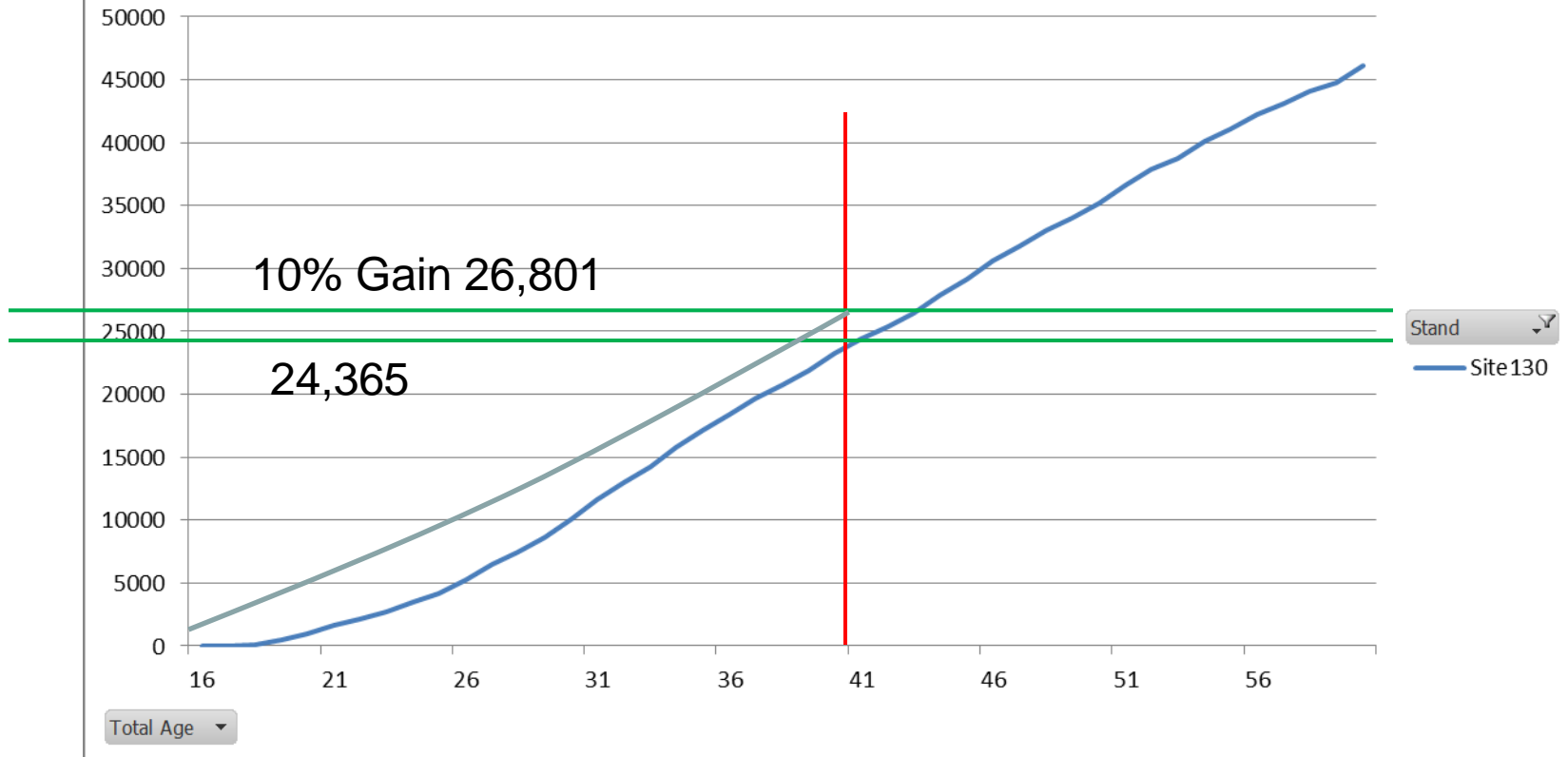
Stand

Site130

Total Age

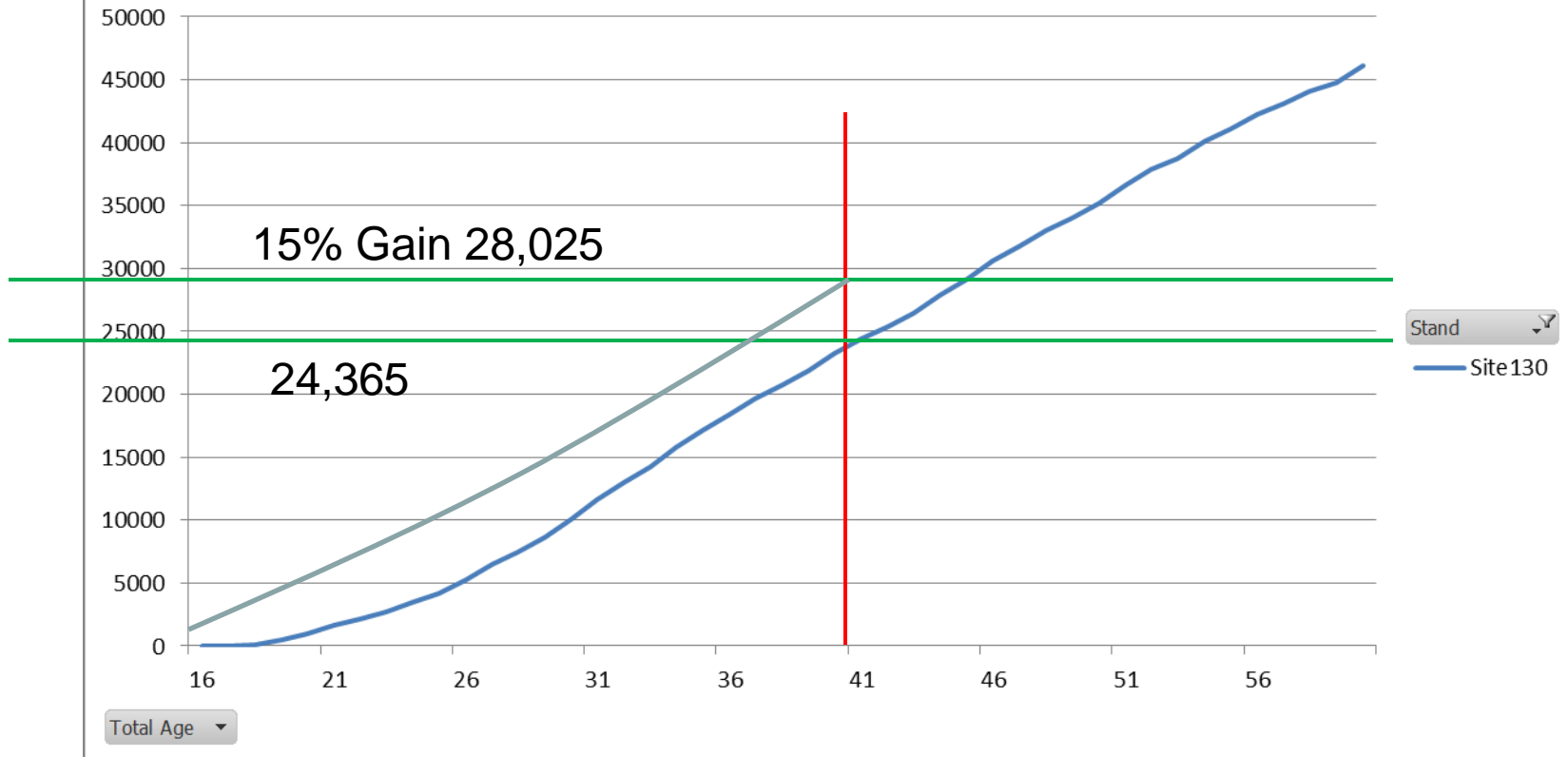
Sum of Board Net

Site130



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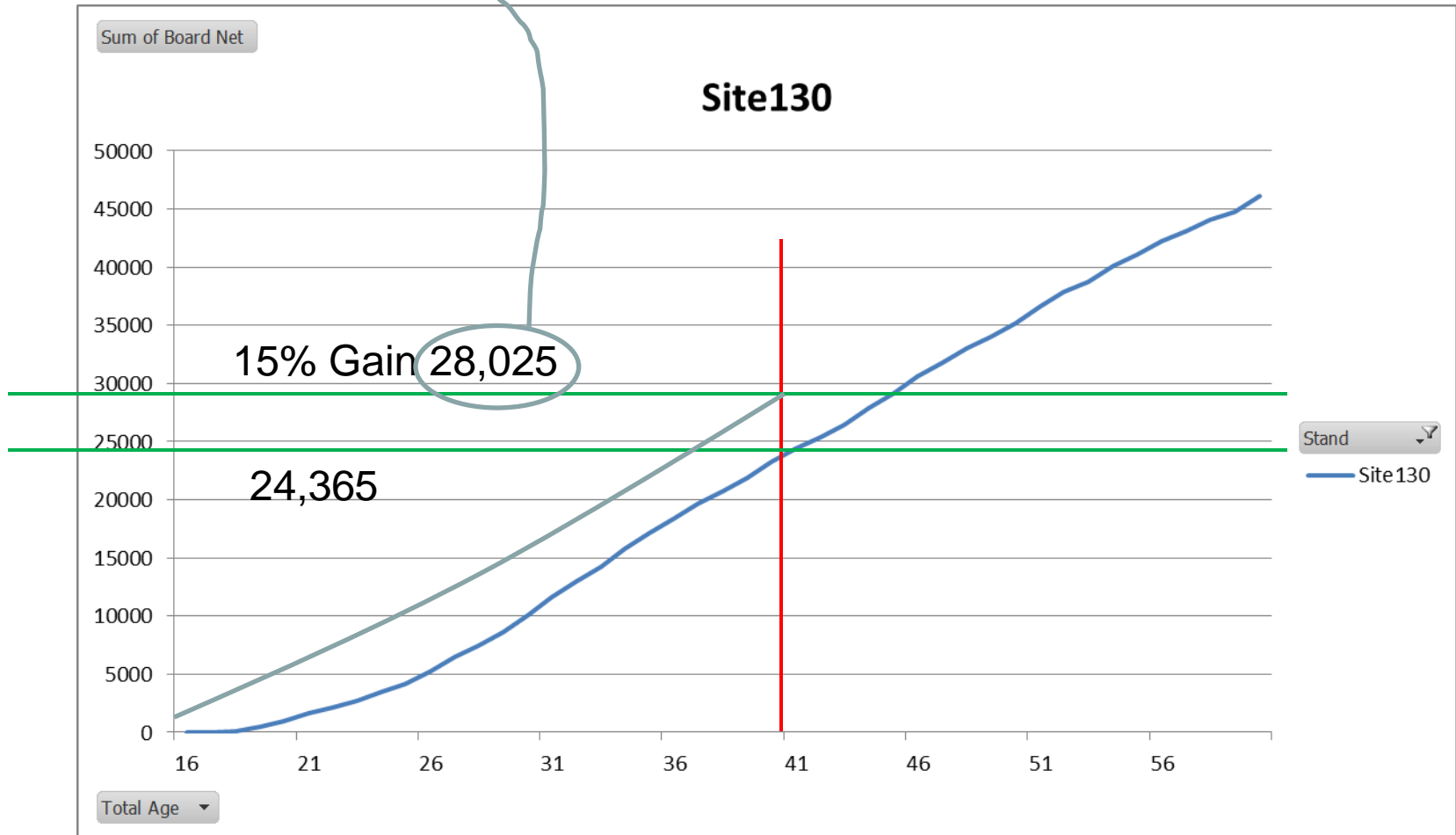
Stand

Site130

Total Age

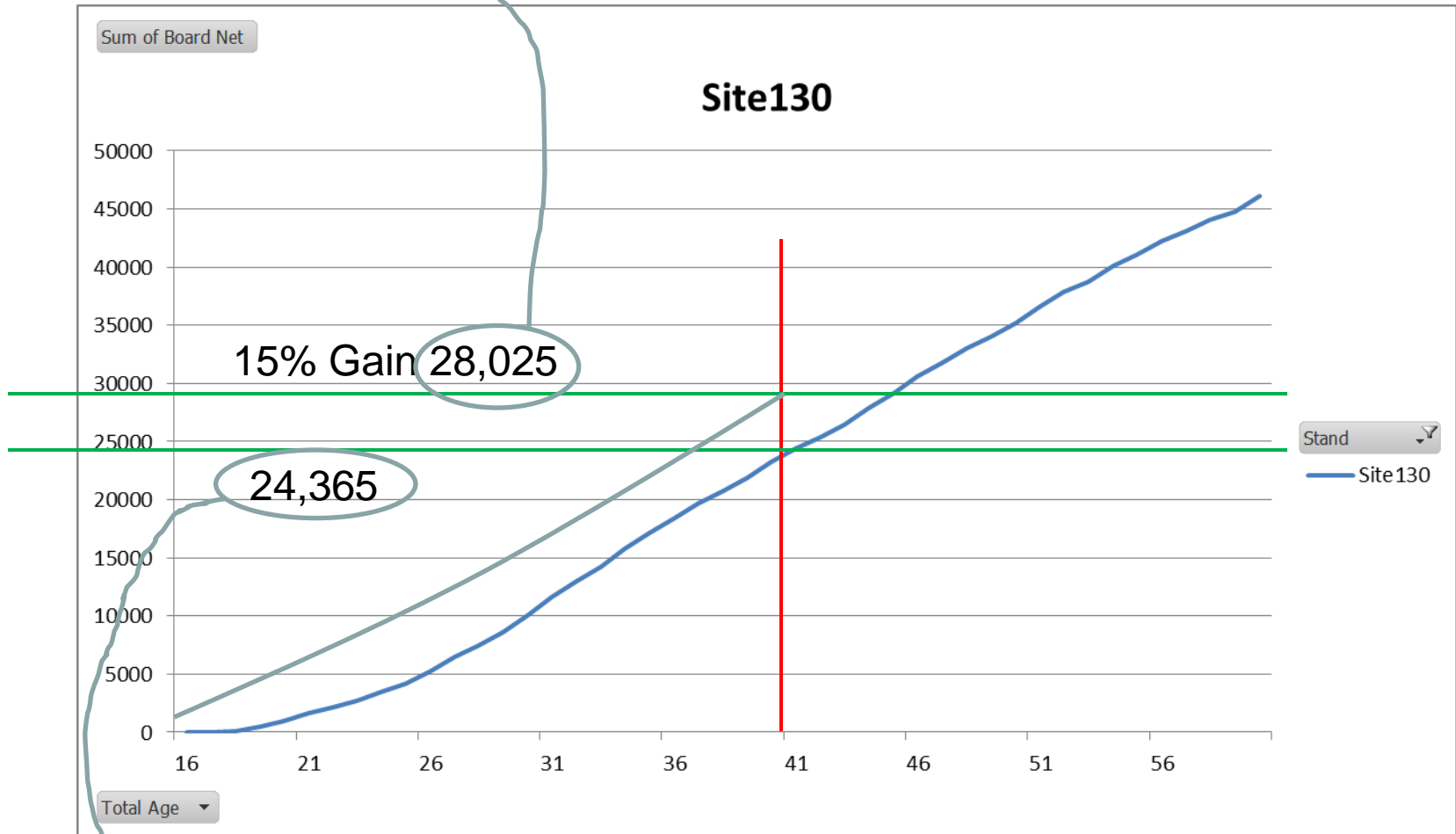
$$28,025 \times \$400/\text{MBF} = \$11,210$$

Site130



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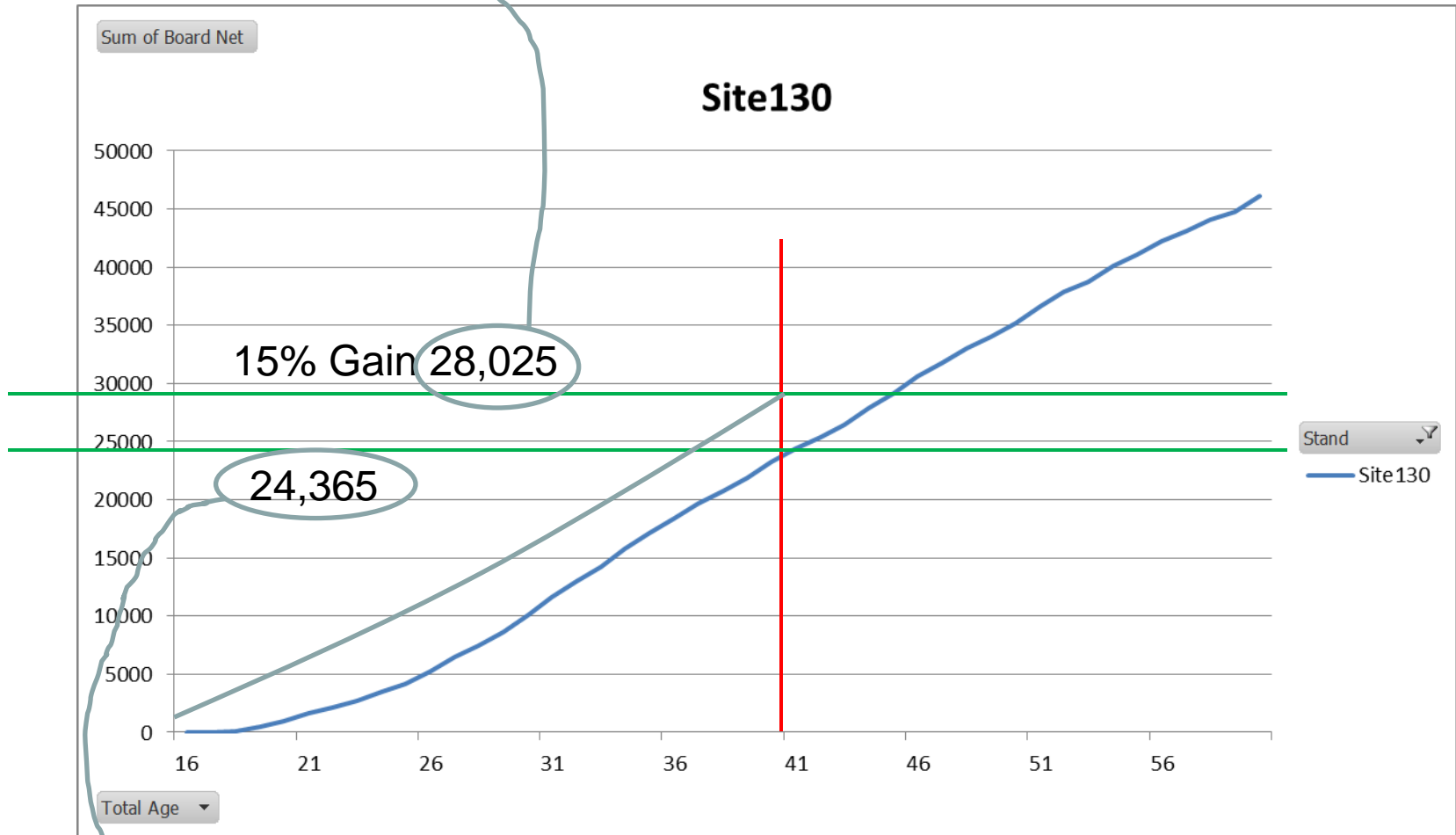
Site130



$$24,365 \times \$400/\text{MBF} = \$9,746$$

$$28,025 \times \$400/\text{MBF} = \$11,210$$

Site130



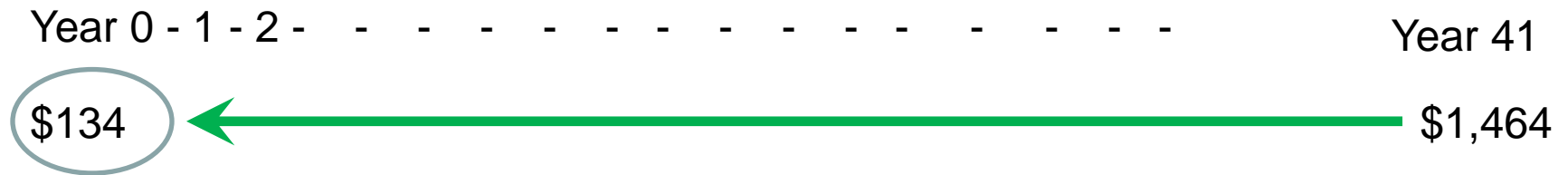
$$24,365 \times \$400/\text{MBF} = \$9,746$$

\$11,210

-\$9,746

\$1,464

At a 6% real discount rate a 15% genetic gain on Site 130 soil at age 41 is worth....



\$134 per acre

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What a deal!



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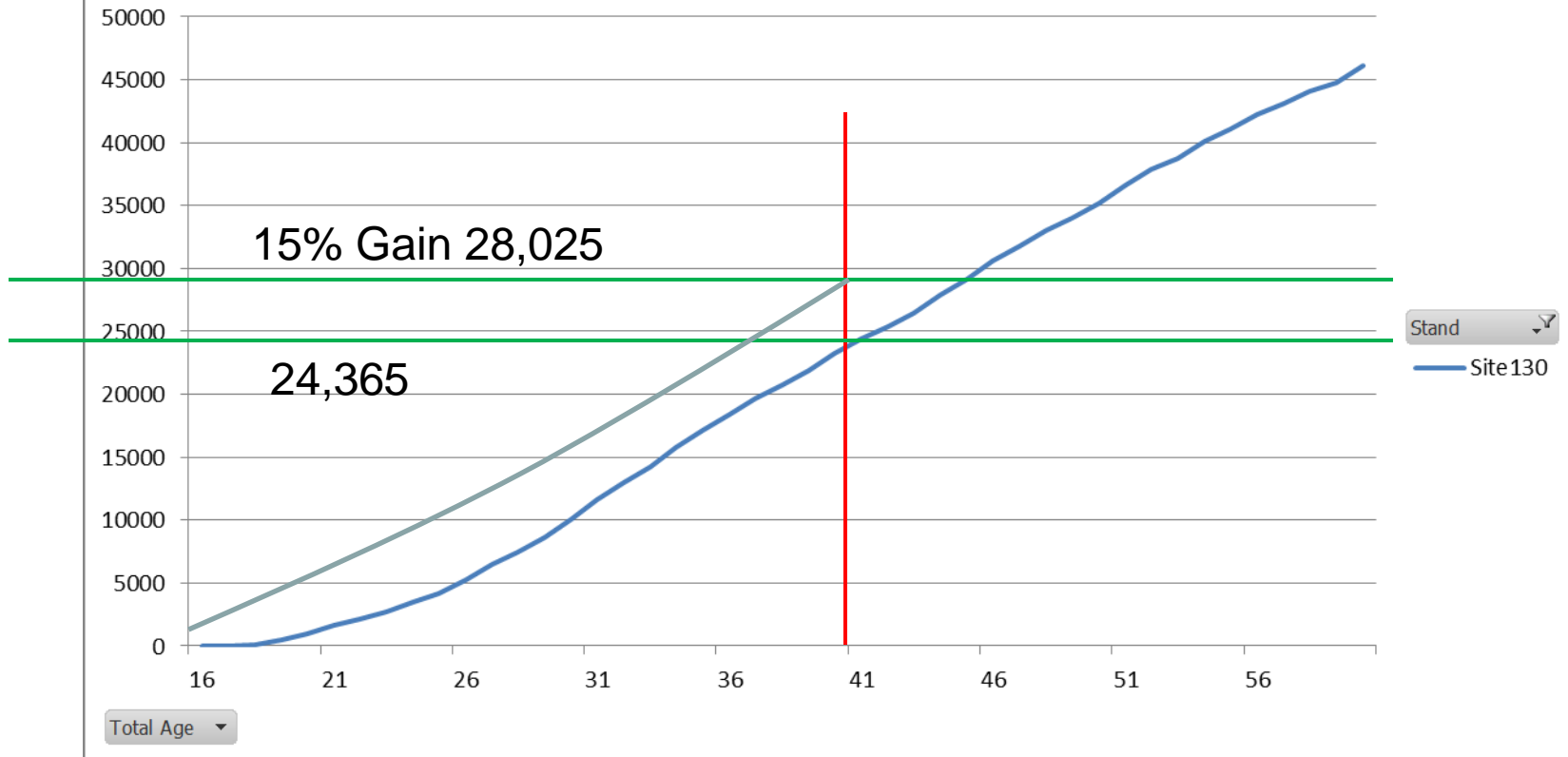
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Yield	Volume Gain	Value Added	NPV
5% Gain @ age 41	1218	\$ 487	\$ 45
10% Gain @ age 41	2436	\$ 974	\$ 89
15% Gain @ age 41	3660	\$ 1,464	\$ 134

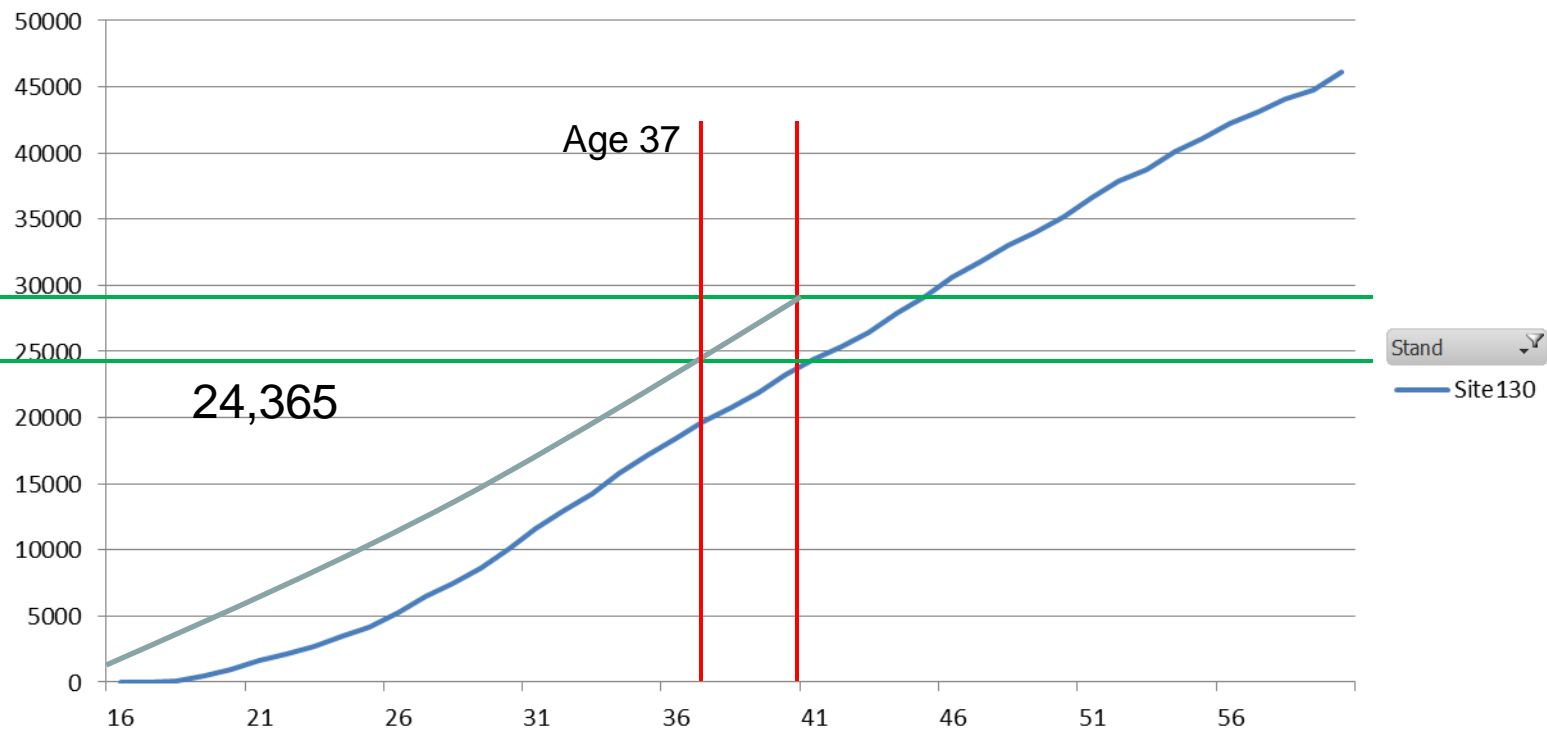
Sum of Board Net

Site130



Sum of Board Net

Site130



Stand

Site130

Total Age

24,365 Board Feet at age 41 has a NPV of \$ **894**

24,365 Board Feet at age 37 has a NPV of \$ **1,129**

$$1,129 - 894 = \$235$$

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15% Gain @ age 37	0	0	\$ 235

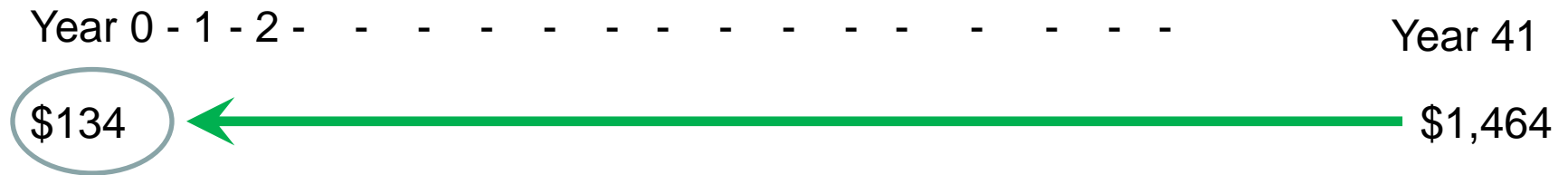
1 Pound of Seed = 20,000 Trees = 40 acres

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40 acres of unimproved timber at age 40 is worth $\$9,746 \times 40 = 389,840$

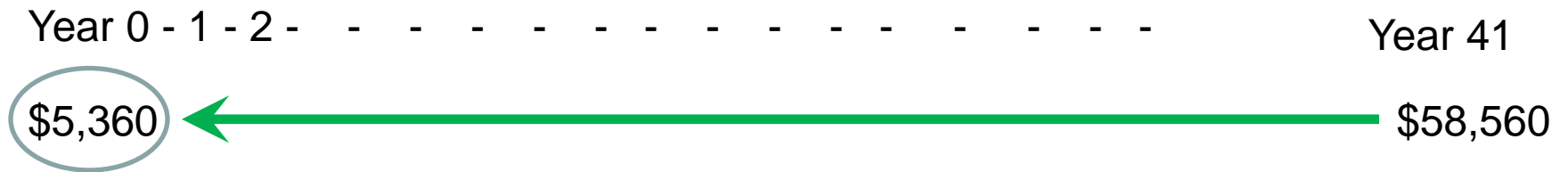
40 acres of improved timber at age 40 is worth $\$11,210 \times 40 = 448,400$

At a 6% real discount rate a 15% genetic gain on Site 130 soil at age 41 is worth....



\$134 per acre

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\$5,360 per Pound

What About An Entire Tree Farm?

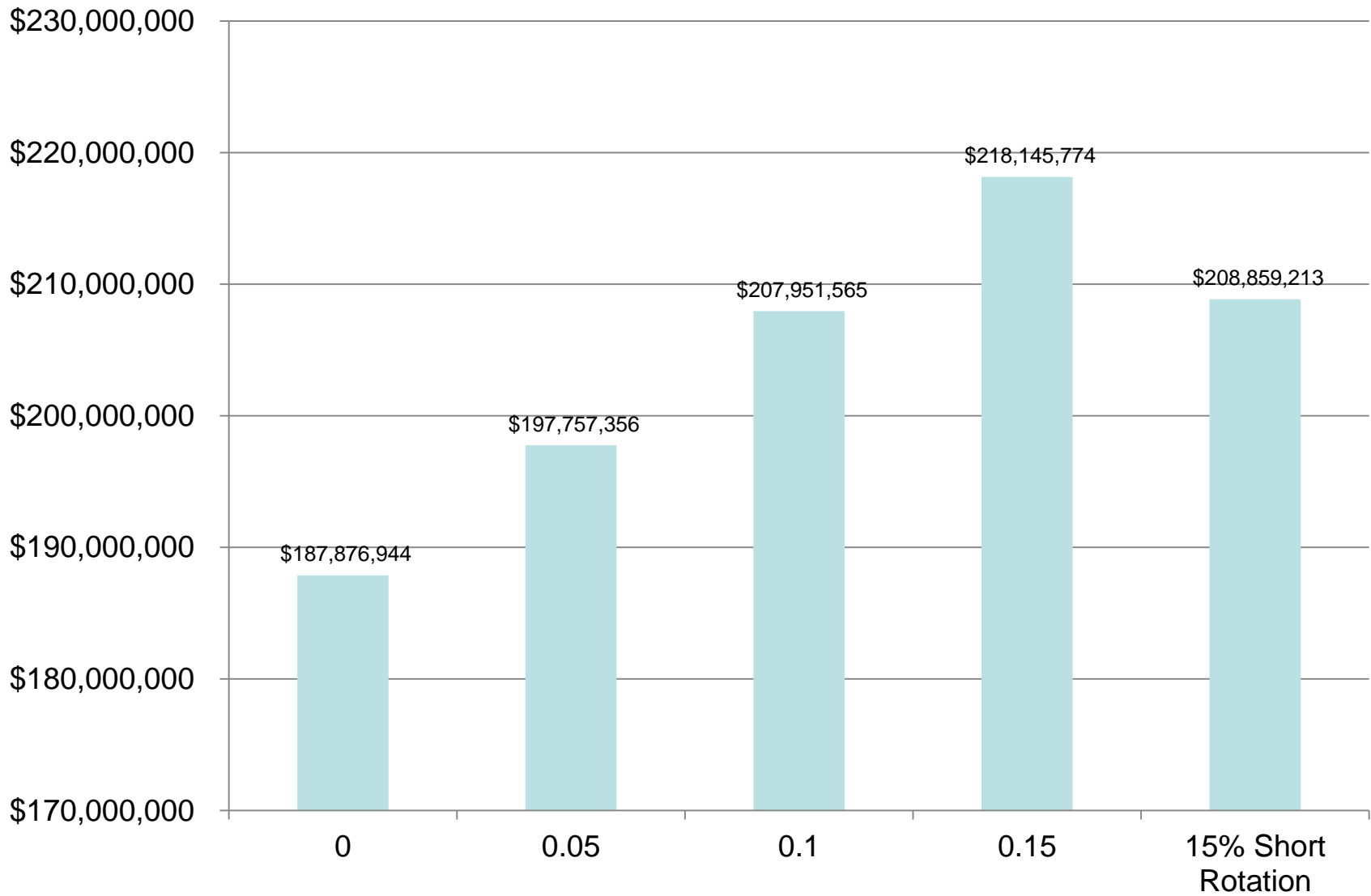


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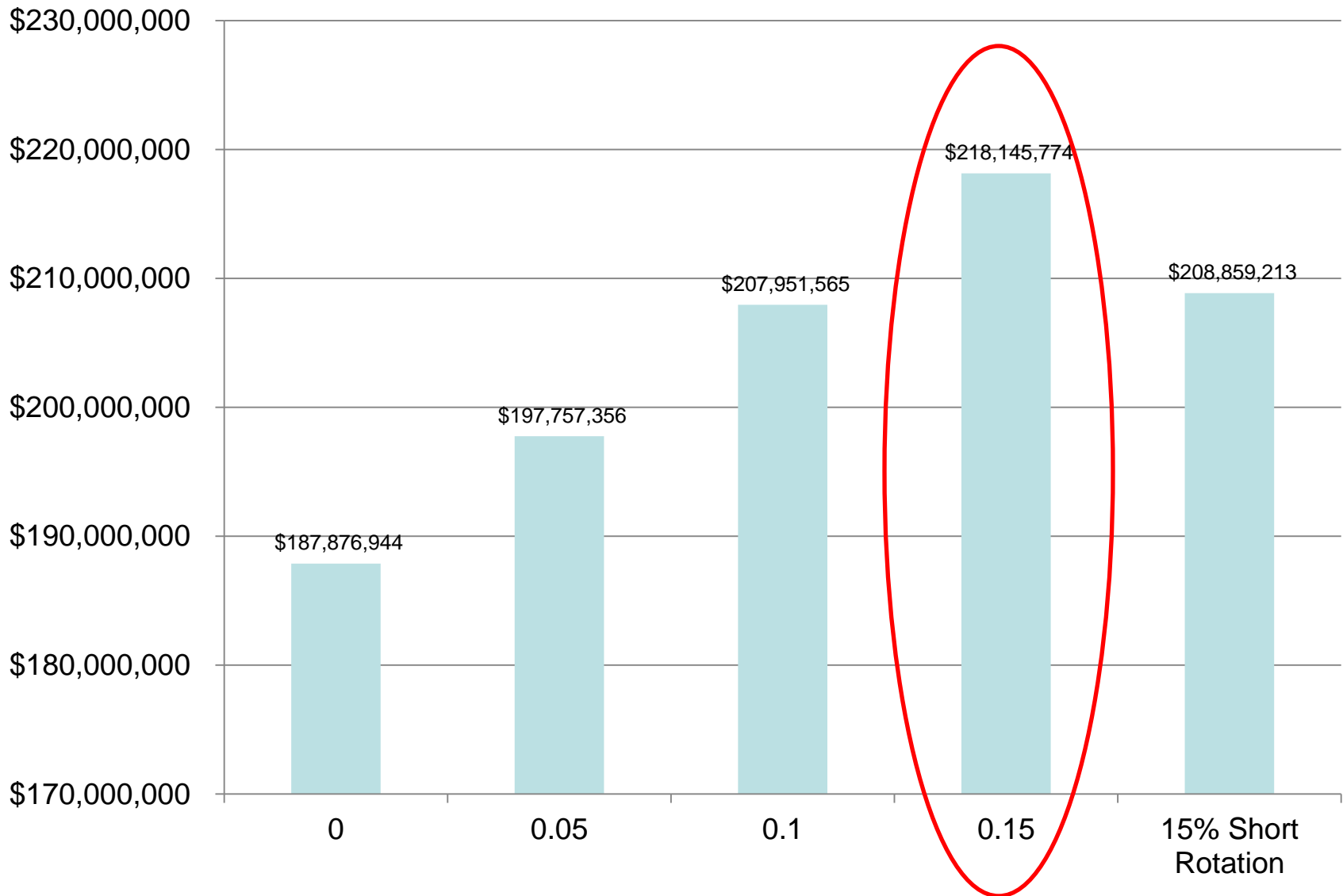
50,000 Acres
Even Age Distribution
41 Year Rotation
1,220 acres harvested/year

Site	Gain	Volume	Revenue	Total Revenue	Variable costs	Overhead	Net Revenue	NPV TreeFARM
100	0%	14985	5994	7,306,686	432,745	500,000	6,373,941	127,028,116
100	5%	15734.25	6293.7	7,672,020	451,030	500,000	6,720,990	133,944,562
100	10%	16483.5	6593.4	8,037,355	451,030	500,000	7,086,325	141,225,415
100	15%	17232.75	6893.1	8,402,689	451,030	500,000	7,451,659	148,506,268
110	0%	18093	7237.2	8,822,147	432,745	500,000	7,889,402	157,230,173
110	5%	18997.65	7599.06	9,263,254	451,030	500,000	8,312,224	165,656,721
110	10%	19902.3	7960.92	9,704,361	451,030	500,000	8,753,331	174,447,677
110	15%	20806.95	8322.78	10,145,469	451,030	500,000	9,194,439	183,238,633
120	0%	22225	8890	10,836,910	432,745	500,000	9,904,165	197,382,972
120	5%	23336.25	9334.5	11,378,756	451,030	500,000	10,427,726	207,817,161
120	10%	24447.5	9779	11,920,601	451,030	500,000	10,969,571	218,615,756
120	15%	25558.75	10223.5	12,462,447	451,030	500,000	11,511,417	229,414,352
130	0%	24365	9746	11,880,374	432,745	500,000	10,947,629	218,178,468
130	5%	25583.25	10233.3	12,474,393	451,030	500,000	11,523,363	229,652,432
130	10%	26801.5	10720.6	13,068,411	451,030	500,000	12,117,381	241,490,802
130	15%	28019.75	11207.9	13,662,430	451,030	500,000	12,711,400	253,329,173
140	0%	27483	10993.2	13,400,711	432,745	500,000	12,467,966	248,477,700
140	5%	28857.15	11542.86	14,070,746	451,030	500,000	13,119,716	261,466,625
140	10%	30231.3	12092.52	14,740,782	451,030	500,000	13,789,752	274,819,958
140	15%	31605.45	12642.18	15,410,817	451,030	500,000	14,459,787	288,173,290
150	0%	30870	12348	15,052,212	432,745	500,000	14,119,467	281,390,946
150	5%	32413.5	12965.4	15,804,823	451,030	500,000	14,853,793	296,025,533
150	10%	33957	13582.8	16,557,433	451,030	500,000	15,606,403	311,024,528
150	15%	35500.5	14200.2	17,310,044	451,030	500,000	16,359,014	326,023,522
130	15% Short Rotation	24365	9746	13,170,270	500,000	500,000	12,170,270	242,544,840

50,000 Acre Tree Farm Site 130



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TE MATAI TREE FARM

FIRE REPORTS Ph: 111

**ALL ENTRY
BY PERMIT ONLY**

ENQUIRIES: BLAKELY PACIFIC LTD
PHONE (07) 379 3217
MON - FRI 8.30am - 5.00pm

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Questions?

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