Plan Validation Report

V_{AL}

April 2, 2014

1 Domain and Problem

Domain: yandi Problem: yandimine

2 Plan: /home/nirlipo/-Sandboxes/RIO/repository/yandi/classicalPlanningModel/PDDLmodel/demo/p

2.1 Plan

Plan size: 76

Time	Action
0:	(move loader_3 locloader_3 b_2_44) [3.63]
0:	(move loader_2 locloader_2 b_2_45) [5.35]
3.631:	(dig-block-b_2_44-build-1 loader_3) [265.98]
5.351:	(dig-block-b_2_45-build-1 loader_2) [407.26]
269.611:	(move loader_3 b_2_44 locloader_2) [3.63]
273.242:	(move loader_3 locloader_2 b_2_43) [3.98]
277.223:	(dig-block-b_2_43-build-0 loader_3) [473.08]
412.611:	(move loader_2 b_2_45 locloader_2) [5.35]
417.962:	(move loader_2 locloader_2 b_2_42) [3.42]
421.383:	(p-dig-block-b_2_42-build-1 loader_2) [93.123]
514.509:	(p-dig-block-b_2_42-build-0 loader_2) [127.223]
641.732:	(move loader_2 b_2_42 locloader_2) [3.42]
645.153:	(move loader_2 locloader_2 b_2_41) [3.94]

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(dig-block-b_2_41-build-1 loader_2) [159.98]
649.094:
           (move loader_3 b_2_43 locloader_2) [3.98]
750.303:
           (move loader_3 locloader_2 b_2_39) [3.86]
754.284:
758.145:
           (dig-block-b_2_39-build-2 loader_3) [165.96]
809.074:
           (move loader_2 b_2_41 locloader_2) [3.94]
           (move loader_2 locloader_2 b_2_40) [3.72]
813.015:
           (dig-block-b_2_40-build-1 loader_2) [321.2]
816.736:
           (move loader_3 b_2_39 locloader_2) [3.86]
924.105:
           (move loader_3 locloader_2 b_2_37) [3.58]
927.966:
931.547:
           (p-dig-block-b_2_37-build-1 loader_3) [166.123]
1097.67:
           (move loader_3 b_2_37 b_2_38) [1.19]
1098.86:
           (dig-block-b_2_38-build-1 loader_3) [200]
1137.94:
           (move loader_2 b_2_40 locloader_2) [3.72]
           (move loader_2 locloader_2 b_2_37) [3.58]
1141.66:
           (p-dig-block-b_2_37-build-0 loader_2) [51.054]
1145.24:
1196.29:
           (move loader_2 b_2_37 locloader_2) [3.58]
           (move loader_2 locloader_2 b_2_36) [3.46]
1199.87:
           (dig-block-b_2_36-build-0 loader_2) [276.2]
1203.33:
1298.86:
           (move loader_3 b_2_38 locloader_2) [3.56]
           (move loader_3 locloader_2 b_2_35) [6.62]
1302.42:
           (dig-block-b_2_35-build-2 loader_3) [289.98]
1309.04:
           (move loader_2 b_2_36 locloader_2) [3.46]
1479.53:
           (move loader_2 locloader_2 b_2_33) [6.51]
1482.99:
           (p-dig-block-b_2_33-build-1 loader_2) [295.744]
1489.51:
           (p-dig-block-b_2_33-build-0 loader_2) [222.251]
1489.51:
           (move loader_3 b_2_35 locloader_2) [6.62]
1599.02:
           (move loader_3 locloader_2 b_2_34) [6.57]
1605.64:
           (dig-block-b_2_34-build-2 loader_3) [302.64]
1612.21:
1785.25:
           (move loader_2 b_2_33 locloader_2) [6.51]
1791.76:
           (move loader_2 locloader_2 b_2_32) [6.45]
           (dig-block-b_2_32-build-2 loader_2) [200]
1798.21:
1914.86:
           (move loader_3 b_2_34 locloader_2) [6.57]
           (move loader_3 locloader_2 b_2_31) [6.25]
1921.43:
           (dig-block-b_2_31-build-2 loader_3) [100]
1927.68:
           (move loader_2 b_2_32 locloader_2) [6.45]
1998.21:
2004.66:
           (move loader_2 locloader_2 b_2_19) [6.67]
           (move loader_2 b_2_19 b_2_26) [7.45]
2011.33:
2018.79:
           (move loader_2 b_2_26 b_2_19) [7.45]
2026.24:
           (dig-block-b_2_19-build-0 loader_2) [985.26]
           (move loader_3 b_2_31 b_2_30) [1.18]
2027.68:
           (dig-block-b_2_30-build-2 loader_3) [100]
2028.86:
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(move loader_3 b_2_30 locloader_2) [6.02]
2128.86:
           (move loader_3 locloader_2 b_2_18) [6.58]
2134.88:
2141.46:
           (dig-block-b_2_18-build-1 loader_3) [799.88]
2941.34:
           (move loader_3 b_2_18 b_2_29) [11.62]
2952.96:
           (dig-block-b_2_29-build-2 loader_3) [100]
           (move loader_2 b_2_19 b_2_26) [7.45]
3011.5:
           (move loader_2 b_2_26 b_2_21) [6.27]
3018.95:
           (p-dig-block-b_2_21-build-1 loader_2) [839.481]
3025.22:
           (p-dig-block-b_2_21-build-0 loader_2) [11.22]
3025.22:
3036.44:
           (move loader_2 b_2_21 b_2_26) [6.27]
3042.71:
           (dig-block-b_2_26-build-2 loader_2) [160]
3052.96:
           (move loader_3 b_2_29 locloader_2) [5.83]
           (move loader_3 locloader_2 b_2_25) [7.37]
3058.79:
           (dig-block-b_2_25-build-2 loader_3) [160]
3066.16:
           (move loader_2 b_2_26 b_2_24) [1.78]
3202.71:
           (dig-block-b_2_24-build-2 loader_2) [200]
3204.49:
3226.16:
           (move loader_3 b_2_25 b_2_23) [1.84]
3228:
           (dig-block-b_2_23-build-2 loader_3) [160]
3388:
           (move loader_3 b_2_23 b_2_22) [2.96]
           (dig-block-b_2_22-build-2 loader_3) [160]
3390.97:
           (move loader_2 b_2_24 b_2_20) [4.82]
3404.49:
3409.31: (dig-block-b_2_20-build-0 loader_2) [959.92]
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2.2 Plan To Validate

\mathbf{Time}	Happening
0:	(move loader_2 locloader_2 b_2_45) - $start$ (move loader_3 locloader_3 b_2_44) - $start$
3.63:	Invariant for (move loader_2 locloader_2 b_2_45) Invariant for (move loader_3 locloader_3 b_2_44)
3.63:	(move loader_3 locloader_3 b_2_44) - end
3.631: 3.631:	Invariant for (move loader_2 locloader_2 b_2_45) (dig-block-b_2_44-build-1 loader_3) - start
5.35:	Invariant for (move loader_2 locloader_2 b_2_45) Invariant for (dig-block-b_2_44-build-1 loader_3)
5.35:	Update of changing Primitive Numerical Expressions

(move loader_2 locloader_2 b_2_45) - end 5.35: 5.351: Invariant for (dig-block-b_2_44-build-1 loader_3) 5.351: Update of changing Primitive Numerical Expressions 5.351: (dig-block-b_2_45-build-1 loader_2) - start 269.611: Invariant for (dig-block-b_2_44-build-1 loader_3) Invariant for (dig-block-b_2_45-build-1 loader_2) **269.611:** Update of changing Primitive Numerical Expressions **269.611:** (dig-block-b_2_44-build-1 loader_3) - end (move loader_3 b_2_44 locloader_2) - start 273.241: Invariant for (dig-block-b_2_45-build-1 loader_2) Invariant for (move loader_3 b_2_44 locloader_2) **273.241:** Update of changing Primitive Numerical Expressions **273.241:** (move loader_3 b_2_44 locloader_2) - end 273.242: Invariant for (dig-block-b_2_45-build-1 loader_2) **273.242:** Update of changing Primitive Numerical Expressions **273.242:** (move loader_3 locloader_2 b_2_43) - start 277.222: Invariant for (dig-block-b_2_45-build-1 loader_2) Invariant for (move loader_3 locloader_2 b_2_43) **277.222:** Update of changing Primitive Numerical Expressions **277.222:** (move loader_3 locloader_2 b_2_43) - end 277.223: Invariant for (dig-block-b_2_45-build-1 loader_2) 277.223: Update of changing Primitive Numerical Expressions **277.223:** (dig-block-b_2_43-build-0 loader_3) - start 412.611: Invariant for (dig-block-b_2_45-build-1 loader_2) Invariant for (dig-block-b_2_43-build-0 loader_3) **412.611:** Update of changing Primitive Numerical Expressions **412.611:** (dig-block-b_2_45-build-1 loader_2) - end (move loader_2 b_2_45 locloader_2) - start 417.961: Invariant for (dig-block-b_2_43-build-0 loader_3) Invariant for (move loader_2 b_2_45 locloader_2) **417.961:** Update of changing Primitive Numerical Expressions

417.961: (move loader_2 b_2_45 locloader_2) - end

- 417.962: Invariant for (dig-block-b_2_43-build-0 loader_3)
- **417.962:** Update of changing Primitive Numerical Expressions
- **417.962:** (move loader_2 locloader_2 b_2_42) start
- **421.382:** *Invariant for* (dig-block-b_2_43-build-0 loader_3) *Invariant for* (move loader_2 locloader_2 b_2_42)
- **421.382:** Update of changing Primitive Numerical Expressions
- **421.382:** (move loader_2 locloader_2 b_2_42) end
- **421.383:** Invariant for (dig-block-b_2_43-build-0 loader_3)
- **421.383:** Update of changing Primitive Numerical Expressions
- **421.383:** (p-dig-block-b_2_42-build-1 loader_2) start
- 514.506: Invariant for (dig-block-b_2_43-build-0 loader_3)
 Invariant for (p-dig-block-b_2_42-build-1 loader_2)
- **514.506:** Update of changing Primitive Numerical Expressions
- **514.506:** (p-dig-block-b_2_42-build-1 loader_2) end
- **514.509:** *Invariant for* (dig-block-b_2_43-build-0 loader_3)
- **514.509:** Update of changing Primitive Numerical Expressions
- **514.509:** (p-dig-block-b_2_42-build-0 loader_2) start
- 641.732: Invariant for (dig-block-b_2_43-build-0 loader_3)
 Invariant for (p-dig-block-b_2_42-build-0 loader_2)
- **641.732:** Update of changing Primitive Numerical Expressions
- **641.732:** (p-dig-block-b_2_42-build-0 loader_2) end (move loader_2 b_2_42 locloader_2) start
- 645.152: Invariant for (dig-block-b_2_43-build-0 loader_3)
 Invariant for (move loader_2 b_2_42 locloader_2)
- **645.152:** Update of changing Primitive Numerical Expressions
- **645.152:** (move loader_2 b_2_42 locloader_2) end
- 645.153: Invariant for (dig-block-b_2_43-build-0 loader_3)
- **645.153:** Update of changing Primitive Numerical Expressions
- **645.153:** (move loader_2 locloader_2 b_2_41) start
- 649.093: Invariant for (dig-block-b_2_43-build-0 loader_3)
 Invariant for (move loader_2 locloader_2 b_2_41)
- **649.093:** Update of changing Primitive Numerical Expressions
- **649.093:** (move loader_2 locloader_2 b_2_41) end

- **649.094:** *Invariant for* (dig-block-b_2_43-build-0 loader_3)
- **649.094:** Update of changing Primitive Numerical Expressions
- **649.094:** (dig-block-b_2_41-build-1 loader_2) start
- **750.303:** *Invariant for* (dig-block-b_2_43-build-0 loader_3) *Invariant for* (dig-block-b_2_41-build-1 loader_2)
- **750.303:** Update of changing Primitive Numerical Expressions
- **750.303:** (dig-block-b_2_43-build-0 loader_3) end (move loader_3 b_2_43 locloader_2) start
- 754.283: Invariant for (dig-block-b_2_41-build-1 loader_2)
 Invariant for (move loader_3 b_2_43 locloader_2)
- **754.283:** Update of changing Primitive Numerical Expressions
- **754.283:** (move loader_3 b_2_43 locloader_2) end
- **754.284:** Invariant for (dig-block-b_2_41-build-1 loader_2)
- **754.284:** Update of changing Primitive Numerical Expressions
- **754.284:** (move loader_3 locloader_2 b_2_39) start
- **758.144:** *Invariant for* (dig-block-b_2_41-build-1 loader_2) *Invariant for* (move loader_3 locloader_2 b_2_39)
- **758.144:** Update of changing Primitive Numerical Expressions
- **758.144:** (move loader_3 locloader_2 b_2_39) end
- 758.145: Invariant for (dig-block-b_2_41-build-1 loader_2)
- **758.145:** Update of changing Primitive Numerical Expressions
- **758.145:** (dig-block-b_2_39-build-2 loader_3) start
- 809.074: Invariant for (dig-block-b_2_41-build-1 loader_2)
 Invariant for (dig-block-b_2_39-build-2 loader_3)
- **809.074:** Update of changing Primitive Numerical Expressions
- 809.074: (move loader_2 b_2_41 locloader_2) start (dig-block-b_2_41-build-1 loader_2) end
- 813.014: Invariant for (dig-block-b_2_39-build-2 loader_3)
 Invariant for (move loader_2 b_2_41 locloader_2)
- **813.014:** Update of changing Primitive Numerical Expressions
- **813.014:** (move loader_2 b_2_41 locloader_2) end
- **813.015:** *Invariant for* (dig-block-b_2_39-build-2 loader_3)

- **813.015:** Update of changing Primitive Numerical Expressions
- **813.015:** (move loader_2 locloader_2 b_2_40) start
- 816.735: Invariant for (dig-block-b_2_39-build-2 loader_3)
 Invariant for (move loader_2 locloader_2 b_2_40)
- **816.735:** Update of changing Primitive Numerical Expressions
- **816.735:** (move loader_2 locloader_2 b_2_40) end
- **816.736:** Invariant for (dig-block-b_2_39-build-2 loader_3)
- 816.736: Update of changing Primitive Numerical Expressions
- **816.736:** (dig-block-b_2_40-build-1 loader_2) start
- **924.105:** *Invariant for* (dig-block-b_2_39-build-2 loader_3) *Invariant for* (dig-block-b_2_40-build-1 loader_2)
- **924.105:** Update of changing Primitive Numerical Expressions
- **924.105:** (dig-block-b_2_39-build-2 loader_3) end (move loader_3 b_2_39 locloader_2) start
- **927.965:** *Invariant for* (dig-block-b_2_40-build-1 loader_2) *Invariant for* (move loader_3 b_2_39 locloader_2)
- 927.965: Update of changing Primitive Numerical Expressions
- **927.965:** (move loader_3 b_2_39 locloader_2) end
- 927.966: Invariant for (dig-block-b_2_40-build-1 loader_2)
- **927.966:** Update of changing Primitive Numerical Expressions
- **927.966:** (move loader_3 locloader_2 b_2_37) start
- 931.546: Invariant for (dig-block-b_2_40-build-1 loader_2)
 Invariant for (move loader_3 locloader_2 b_2_37)
- **931.546:** Update of changing Primitive Numerical Expressions
- **931.546:** (move loader_3 locloader_2 b_2_37) end
- 931.547: Invariant for (dig-block-b_2_40-build-1 loader_2)
- **931.547:** Update of changing Primitive Numerical Expressions
- **931.547:** (p-dig-block-b_2_37-build-1 loader_3) start
- 1097.67: Invariant for (dig-block-b_2_40-build-1 loader_2)
 Invariant for (p-dig-block-b_2_37-build-1 loader_3)
- **1097.67:** Update of changing Primitive Numerical Expressions
- **1097.67:** (p-dig-block-b_2_37-build-1 loader_3) end (move loader_3 b_2_37 b_2_38) start

- 1098.86: Invariant for (dig-block-b_2_40-build-1 loader_2)
 - Invariant for (move loader_3 b_2_37 b_2_38)
- 1098.86: Update of changing Primitive Numerical Expressions
- **1098.86:** (move loader_3 b_2_37 b_2_38) end
- 1098.86: Invariant for (dig-block-b_2_40-build-1 loader_2)
- 1098.86: Update of changing Primitive Numerical Expressions
- **1098.86:** (dig-block-b_2_38-build-1 loader_3) *start*
- 1137.94: Invariant for (dig-block-b_2_40-build-1 loader_2)
 Invariant for (dig-block-b_2_38-build-1 loader_3)
- 1137.94: Update of changing Primitive Numerical Expressions
- 1137.94: (dig-block-b_2_40-build-1 loader_2) end (move loader_2 b_2_40 locloader_2) start
- 1141.66: Invariant for (dig-block-b_2_38-build-1 loader_3)
 Invariant for (move loader_2 b_2_40 locloader_2)
- 1141.66: Update of changing Primitive Numerical Expressions
- **1141.66:** (move loader_2 b_2_40 locloader_2) end
- 1141.66: Invariant for (dig-block-b_2_38-build-1 loader_3)
- **1141.66:** Update of changing Primitive Numerical Expressions
- **1141.66:** (move loader_2 locloader_2 b_2_37) start
- 1145.24: Invariant for (dig-block-b_2_38-build-1 loader_3)
 Invariant for (move loader_2 locloader_2 b_2_37)
- 1145.24: Update of changing Primitive Numerical Expressions
- 1145.24: (move loader_2 locloader_2 b_2_37) end
- 1145.24: Invariant for (dig-block-b_2_38-build-1 loader_3)
- **1145.24:** Update of changing Primitive Numerical Expressions
- 1145.24: (p-dig-block-b_2_37-build-0 loader_2) start
- 1196.29: Invariant for (dig-block-b_2_38-build-1 loader_3)
 Invariant for (p-dig-block-b_2_37-build-0 loader_2)
- **1196.29:** Update of changing Primitive Numerical Expressions
- 1196.29: (move loader_2 b_2_37 locloader_2) start (p-dig-block-b_2_37-build-0 loader_2) end
- 1199.87: Invariant for (dig-block-b_2_38-build-1 loader_3)

Invariant for (move loader_2 b_2_37 locloader_2) 1199.87: Update of changing Primitive Numerical Expressions **1199.87:** (move loader_2 b_2_37 locloader_2) - end 1199.87: Invariant for (dig-block-b_2_38-build-1 loader_3) **1199.87:** Update of changing Primitive Numerical Expressions 1199.87: (move loader_2 locloader_2 b_2_36) - start 1203.33: Invariant for (dig-block-b_2_38-build-1 loader_3) Invariant for (move loader_2 locloader_2 b_2_36) **1203.33:** Update of changing Primitive Numerical Expressions **1203.33:** (move loader_2 locloader_2 b_2_36) - end 1203.33: Invariant for (dig-block-b_2_38-build-1 loader_3) **1203.33:** Update of changing Primitive Numerical Expressions **1203.33:** (dig-block-b_2_36-build-0 loader_2) - start 1298.86: Invariant for (dig-block-b_2_38-build-1 loader_3) Invariant for (dig-block-b_2_36-build-0 loader_2) **1298.86:** Update of changing Primitive Numerical Expressions **1298.86:** (dig-block-b_2_38-build-1 loader_3) - end (move loader_3 b_2_38 locloader_2) - start **1302.42:** *Invariant for* (dig-block-b_2_36-build-0 loader_2) Invariant for (move loader_3 b_2_38 locloader_2) **1302.42:** Update of changing Primitive Numerical Expressions **1302.42:** (move loader_3 b_2_38 locloader_2) - end 1302.42: Invariant for (dig-block-b_2_36-build-0 loader_2) **1302.42:** Update of changing Primitive Numerical Expressions **1302.42:** (move loader_3 locloader_2 b_2_35) - start 1309.04: Invariant for (dig-block-b_2_36-build-0 loader_2) Invariant for (move loader_3 locloader_2 b_2_35) **1309.04:** Update of changing Primitive Numerical Expressions **1309.04:** (move loader_3 locloader_2 b_2_35) - end 1309.04: Invariant for (dig-block-b_2_36-build-0 loader_2) **1309.04:** Update of changing Primitive Numerical Expressions

1309.04: (dig-block-b_2_35-build-2 loader_3) - start

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Invariant for (dig-block-b_2_35-build-2 loader_3)
1479.53:
          Update of changing Primitive Numerical Expressions
1479.53: (dig-block-b_2_36-build-0 loader_2) - end
           (move loader_2 b_2_36 locloader_2) - start
1482.99: Invariant for (dig-block-b_2_35-build-2 loader_3)
           Invariant for (move loader_2 b_2_36 locloader_2)
1482.99: Update of changing Primitive Numerical Expressions
1482.99: (move loader_2 b_2_36 locloader_2) - end
1482.99: Invariant for (dig-block-b_2_35-build-2 loader_3)
          Update of changing Primitive Numerical Expressions
1482.99:
1482.99: (move loader_2 locloader_2 b_2_33) - start
1489.5:
           Invariant for (dig-block-b_2_35-build-2 loader_3)
           Invariant for (move loader_2 locloader_2 b_2_33)
1489.5:
           Update of changing Primitive Numerical Expressions
1489.5:
           (move loader_2 locloader_2 b_2_33) - end
1489.51: Invariant for (dig-block-b_2_35-build-2 loader_3)
          Update of changing Primitive Numerical Expressions
1489.51:
1489.51: (p-dig-block-b_2_33-build-1 loader_2) - start
1489.51: Invariant for (dig-block-b_2_35-build-2 loader_3)
           Invariant for (p-dig-block-b_2_33-build-1 loader_2)
1489.51: Update of changing Primitive Numerical Expressions
1489.51: (p-dig-block-b_2_33-build-0 loader_2) - start
1599.02: Invariant for (dig-block-b_2_35-build-2 loader_3)
           Invariant for (p-dig-block-b_2_33-build-1 loader_2)
           Invariant for (p-dig-block-b_2_33-build-0 loader_2)
1599.02: Update of changing Primitive Numerical Expressions
1599.02: (dig-block-b_2_35-build-2 loader_3) - end
           (move loader_3 b_2_35 locloader_2) - start
1605.64: Invariant for (p-dig-block-b_2_33-build-1 loader_2)
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1479.53: Invariant for (dig-block-b_2_36-build-0 loader_2)

Invariant for (p-dig-block-b_2_33-build-0 loader_2)
Invariant for (move loader_3 b_2_35 locloader_2)

1605.64: Update of changing Primitive Numerical Expressions

1605.64: (move loader_3 b_2_35 locloader_2) - end

- 1605.64: Invariant for (p-dig-block-b_2_33-build-1 loader_2)
 - Invariant for (p-dig-block-b_2_33-build-0 loader_2)
- **1605.64:** Update of changing Primitive Numerical Expressions
- **1605.64:** (move loader_3 locloader_2 b_2_34) start
- **1612.21:** *Invariant for* (p-dig-block-b_2_33-build-1 loader_2) *Invariant for* (p-dig-block-b_2_33-build-0 loader_2)
 - Invariant for (move loader_3 locloader_2 b_2_34)
- **1612.21:** Update of changing Primitive Numerical Expressions
- **1612.21:** (move loader_3 locloader_2 b_2_34) end
- **1612.21:** *Invariant for* (p-dig-block-b_2_33-build-1 loader_2) *Invariant for* (p-dig-block-b_2_33-build-0 loader_2)
- **1612.21:** Update of changing Primitive Numerical Expressions
- **1612.21:** (dig-block-b_2_34-build-2 loader_3) start
- 1711.76: Invariant for (p-dig-block-b_2_33-build-1 loader_2)
 Invariant for (p-dig-block-b_2_33-build-0 loader_2)
 Invariant for (dig-block-b_2_34-build-2 loader_3)
- 1711.76: Update of changing Primitive Numerical Expressions
- **1711.76:** (p-dig-block-b_2_33-build-0 loader_2) end
- 1785.25: Invariant for (p-dig-block-b_2_33-build-1 loader_2)
 Invariant for (dig-block-b_2_34-build-2 loader_3)
- 1785.25: Update of changing Primitive Numerical Expressions
- 1785.25: (p-dig-block-b_2_33-build-1 loader_2) end (move loader_2 b_2_33 locloader_2) start
- 1791.76: Invariant for (dig-block-b_2_34-build-2 loader_3)
 Invariant for (move loader_2 b_2_33 locloader_2)
- **1791.76:** Update of changing Primitive Numerical Expressions
- **1791.76:** (move loader_2 b_2_33 locloader_2) end
- 1791.76: Invariant for (dig-block-b_2_34-build-2 loader_3)
- **1791.76:** Update of changing Primitive Numerical Expressions
- **1791.76:** (move loader_2 locloader_2 b_2_32) start
- 1798.21: Invariant for (dig-block-b_2_34-build-2 loader_3)
 Invariant for (move loader_2 locloader_2 b_2_32)
- 1798.21: Update of changing Primitive Numerical Expressions

- **1798.21:** (move loader_2 locloader_2 b_2_32) *end*
- 1798.21: Invariant for (dig-block-b_2_34-build-2 loader_3)
- 1798.21: Update of changing Primitive Numerical Expressions
- **1798.21:** (dig-block-b_2_32-build-2 loader_2) start
- 1914.86: Invariant for (dig-block-b_2_34-build-2 loader_3)
 Invariant for (dig-block-b_2_32-build-2 loader_2)
- 1914.86: Update of changing Primitive Numerical Expressions
- **1914.86:** (dig-block-b_2_34-build-2 loader_3) end (move loader_3 b_2_34 locloader_2) start
- 1921.42: Invariant for (dig-block-b_2_32-build-2 loader_2)
 Invariant for (move loader_3 b_2_34 locloader_2)
- **1921.42:** Update of changing Primitive Numerical Expressions
- **1921.42:** (move loader_3 b_2_34 locloader_2) end
- **1921.43:** *Invariant for* (dig-block-b_2_32-build-2 loader_2)
- **1921.43:** Update of changing Primitive Numerical Expressions
- **1921.43:** (move loader_3 locloader_2 b_2_31) start
- 1927.68: Invariant for (dig-block-b_2_32-build-2 loader_2)
 Invariant for (move loader_3 locloader_2 b_2_31)
- **1927.68:** Update of changing Primitive Numerical Expressions
- **1927.68:** (move loader_3 locloader_2 b_2_31) end
- 1927.68: Invariant for (dig-block-b_2_32-build-2 loader_2)
- **1927.68:** Update of changing Primitive Numerical Expressions
- **1927.68:** (dig-block-b_2_31-build-2 loader_3) start
- 1998.21: Invariant for (dig-block-b_2_32-build-2 loader_2)
 Invariant for (dig-block-b_2_31-build-2 loader_3)
- **1998.21:** Update of changing Primitive Numerical Expressions
- **1998.21:** (dig-block-b_2_32-build-2 loader_2) end (move loader_2 b_2_32 locloader_2) start
- **2004.66:** *Invariant for* (dig-block-b_2_31-build-2 loader_3) *Invariant for* (move loader_2 b_2_32 locloader_2)
- **2004.66:** Update of changing Primitive Numerical Expressions
- **2004.66:** (move loader_2 b_2_32 locloader_2) end

- **2004.66:** *Invariant for* (dig-block-b_2_31-build-2 loader_3)
- **2004.66:** Update of changing Primitive Numerical Expressions
- **2004.66:** (move loader_2 locloader_2 b_2_19) start
- 2011.33: Invariant for (dig-block-b_2_31-build-2 loader_3)
- Invariant for (move loader_2 locloader_2 b_2_19) **2011.33:** Update of changing Primitive Numerical Expressions
- **2011.33:** (move loader_2 locloader_2 b_2_19) end
- **2011.33:** *Invariant for* (dig-block-b_2_31-build-2 loader_3)
- **2011.33:** Update of changing Primitive Numerical Expressions
- **2011.33:** (move loader_2 b_2_19 b_2_26) start
- 2018.78: Invariant for (dig-block-b_2_31-build-2 loader_3)
 Invariant for (move loader_2 b_2_19 b_2_26)
- **2018.78:** Update of changing Primitive Numerical Expressions
- **2018.78:** (move loader_2 b_2_19 b_2_26) end
- 2018.79: Invariant for (dig-block-b_2_31-build-2 loader_3)
- **2018.79:** Update of changing Primitive Numerical Expressions
- **2018.79:** (move loader_2 b_2_26 b_2_19) start
- 2026.24: Invariant for (dig-block-b_2_31-build-2 loader_3)
 Invariant for (move loader_2 b_2_26 b_2_19)
- **2026.24:** Update of changing Primitive Numerical Expressions
- **2026.24:** (move loader_2 b_2_26 b_2_19) end
- 2026.24: Invariant for (dig-block-b_2_31-build-2 loader_3)
- 2026.24: Update of changing Primitive Numerical Expressions
- **2026.24:** (dig-block-b_2_19-build-0 loader_2) start
- **2027.68:** *Invariant for* (dig-block-b_2_31-build-2 loader_3) *Invariant for* (dig-block-b_2_19-build-0 loader_2)
- **2027.68:** Update of changing Primitive Numerical Expressions
- **2027.68:** (dig-block-b_2_31-build-2 loader_3) *end* (move loader_3 b_2_31 b_2_30) *start*
- 2028.86: Invariant for (dig-block-b_2_19-build-0 loader_2)
 Invariant for (move loader_3 b_2_31 b_2_30)
- **2028.86:** Update of changing Primitive Numerical Expressions
- **2028.86:** (move loader_3 b_2_31 b_2_30) end

- 2028.86: Invariant for (dig-block-b_2_19-build-0 loader_2)
- **2028.86:** Update of changing Primitive Numerical Expressions
- **2028.86:** (dig-block-b_2_30-build-2 loader_3) *start*
- **2128.86:** *Invariant for* (dig-block-b_2_19-build-0 loader_2) *Invariant for* (dig-block-b_2_30-build-2 loader_3)
- 2128.86: Update of changing Primitive Numerical Expressions
- **2128.86:** (dig-block-b_2_30-build-2 loader_3) end (move loader_3 b_2_30 locloader_2) start
- **2134.88:** *Invariant for* (dig-block-b_2_19-build-0 loader_2) *Invariant for* (move loader_3 b_2_30 locloader_2)
- **2134.88:** Update of changing Primitive Numerical Expressions
- 2134.88: (move loader_3 b_2_30 locloader_2) end
- 2134.88: Invariant for (dig-block-b_2_19-build-0 loader_2)
- **2134.88:** Update of changing Primitive Numerical Expressions
- 2134.88: (move loader_3 locloader_2 b_2_18) start
- **2141.46:** *Invariant for* (dig-block-b_2_19-build-0 loader_2) *Invariant for* (move loader_3 locloader_2 b_2_18)
- **2141.46:** Update of changing Primitive Numerical Expressions
- **2141.46:** (move loader_3 locloader_2 b_2_18) end
- 2141.46: Invariant for (dig-block-b_2_19-build-0 loader_2)
- **2141.46:** Update of changing Primitive Numerical Expressions
- **2141.46:** (dig-block-b_2_18-build-1 loader_3) start
- **2941.34:** *Invariant for* (dig-block-b_2_19-build-0 loader_2) *Invariant for* (dig-block-b_2_18-build-1 loader_3)
- **2941.34:** Update of changing Primitive Numerical Expressions
- **2941.34:** (dig-block-b_2_18-build-1 loader_3) *end* (move loader_3 b_2_18 b_2_29) *start*
- **2952.96:** Invariant for (dig-block-b_2_19-build-0 loader_2) Invariant for (move loader_3 b_2_18 b_2_29)
- **2952.96:** Update of changing Primitive Numerical Expressions
- **2952.96:** (move loader_3 b_2_18 b_2_29) end
- 2952.96: Invariant for (dig-block-b_2_19-build-0 loader_2)

- 2952.96: Update of changing Primitive Numerical Expressions
- **2952.96:** (dig-block-b_2_29-build-2 loader_3) start
- 3011.5: Invariant for (dig-block-b_2_19-build-0 loader_2)
 Invariant for (dig-block-b_2_29-build-2 loader_3)
- **3011.5:** Update of changing Primitive Numerical Expressions
- **3011.5:** (dig-block-b_2_19-build-0 loader_2) end (move loader_2 b_2_19 b_2_26) start
- 3018.95: Invariant for (dig-block-b_2_29-build-2 loader_3)
 Invariant for (move loader_2 b_2_19 b_2_26)
- **3018.95:** Update of changing Primitive Numerical Expressions
- **3018.95:** (move loader_2 b_2_19 b_2_26) end
- 3018.95: Invariant for (dig-block-b_2_29-build-2 loader_3)
- **3018.95:** Update of changing Primitive Numerical Expressions
- **3018.95:** (move loader_2 b_2_26 b_2_21) start
- 3025.22: Invariant for (dig-block-b_2_29-build-2 loader_3)
 Invariant for (move loader_2 b_2_26 b_2_21)
- **3025.22:** Update of changing Primitive Numerical Expressions
- **3025.22:** (move loader_2 b_2_26 b_2_21) end
- 3025.22: Invariant for (dig-block-b_2_29-build-2 loader_3)
- **3025.22:** Update of changing Primitive Numerical Expressions
- **3025.22:** (p-dig-block-b_2_21-build-1 loader_2) start
- **3025.22:** Invariant for (dig-block-b_2_29-build-2 loader_3)
 Invariant for (p-dig-block-b_2_21-build-1 loader_2)
- **3025.22:** Update of changing Primitive Numerical Expressions
- **3025.22:** (p-dig-block-b_2_21-build-0 loader_2) start
- 3036.44: Invariant for (dig-block-b_2_29-build-2 loader_3)
 Invariant for (p-dig-block-b_2_21-build-1 loader_2)
 Invariant for (p-dig-block-b_2_21-build-0 loader_2)
- **3036.44:** Update of changing Primitive Numerical Expressions
- **3036.44:** (p-dig-block-b_2_21-build-0 loader_2) end (move loader_2 b_2_21 b_2_26) start
- 3042.71: Invariant for (dig-block-b_2_29-build-2 loader_3)
 Invariant for (p-dig-block-b_2_21-build-1 loader_2)

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Invariant for (move loader_2 b_2_21 b_2_26)
3042.71: Update of changing Primitive Numerical Expressions
3042.71: (move loader_2 b_2_21 b_2_26) - end
3042.71: Invariant for (dig-block-b_2_29-build-2 loader_3)
           Invariant for (p-dig-block-b_2_21-build-1 loader_2)
3042.71: Update of changing Primitive Numerical Expressions
3042.71: (dig-block-b_2_26-build-2 loader_2) - start
3052.96: Invariant for (dig-block-b_2_29-build-2 loader_3)
           Invariant for (p-dig-block-b_2_21-build-1 loader_2)
           Invariant for (dig-block-b_2_26-build-2 loader_2)
3052.96: Update of changing Primitive Numerical Expressions
3052.96: (dig-block-b_2_29-build-2 loader_3) - end
           (move loader_3 b_2_29 locloader_2) - start
3058.79: Invariant for (p-dig-block-b_2_21-build-1 loader_2)
           Invariant for (dig-block-b_2_26-build-2 loader_2)
           Invariant for (move loader_3 b_2_29 locloader_2)
3058.79: Update of changing Primitive Numerical Expressions
3058.79: (move loader_3 b_2_29 locloader_2) - end
3058.79: Invariant for (p-dig-block-b_2_21-build-1 loader_2)
           Invariant for (dig-block-b_2_26-build-2 loader_2)
3058.79: Update of changing Primitive Numerical Expressions
3058.79: (move loader_3 locloader_2 b_2_25) - start
3066.16: Invariant for (p-dig-block-b_2_21-build-1 loader_2)
           Invariant for (dig-block-b_2_26-build-2 loader_2)
           Invariant for (move loader_3 locloader_2 b_2_25)
3066.16: Update of changing Primitive Numerical Expressions
3066.16: (move loader_3 locloader_2 b_2_25) - end
3066.16: Invariant for (p-dig-block-b_2_21-build-1 loader_2)
           Invariant for (dig-block-b_2_26-build-2 loader_2)
3066.16: Update of changing Primitive Numerical Expressions
3066.16: (dig-block-b_2_25-build-2 loader_3) - start
3202.71: Invariant for (p-dig-block-b_2_21-build-1 loader_2)
           Invariant for (dig-block-b_2_26-build-2 loader_2)
```

Invariant for (dig-block-b_2_25-build-2 loader_3)

3202.71: Update of changing Primitive Numerical Expressions **3202.71:** (dig-block-b_2_26-build-2 loader_2) - end (move loader_2 b_2_26 b_2_24) - start **3204.49:** *Invariant for* (p-dig-block-b_2_21-build-1 loader_2) Invariant for (dig-block-b_2_25-build-2 loader_3) Invariant for (move loader_2 b_2_26 b_2_24) **3204.49:** Update of changing Primitive Numerical Expressions **3204.49:** (move loader_2 b_2_26 b_2_24) - end **3204.49:** *Invariant for* (p-dig-block-b_2_21-build-1 loader_2) Invariant for (dig-block-b_2_25-build-2 loader_3) **3204.49:** Update of changing Primitive Numerical Expressions **3204.49:** (dig-block-b_2_24-build-2 loader_2) - start **3226.16:** *Invariant for* (p-dig-block-b_2_21-build-1 loader_2) Invariant for (dig-block-b_2_25-build-2 loader_3) Invariant for (dig-block-b_2_24-build-2 loader_2) **3226.16:** Update of changing Primitive Numerical Expressions **3226.16:** (dig-block-b_2_25-build-2 loader_3) - end (move loader_3 b_2_25 b_2_23) - start 3228: Invariant for (p-dig-block-b_2_21-build-1 loader_2) Invariant for (dig-block-b_2_24-build-2 loader_2) Invariant for (move loader_3 b_2_25 b_2_23) 3228: Update of changing Primitive Numerical Expressions (move loader_3 b_2_25 b_2_23) - end 3228: 3228: Invariant for (p-dig-block-b_2_21-build-1 loader_2) Invariant for (dig-block-b_2_24-build-2 loader_2) 3228: Update of changing Primitive Numerical Expressions (dig-block-b_2_23-build-2 loader_3) - start 3228: 3388: Invariant for (p-dig-block-b_2_21-build-1 loader_2) Invariant for (dig-block-b_2_24-build-2 loader_2) Invariant for (dig-block-b_2_23-build-2 loader_3) 3388: Update of changing Primitive Numerical Expressions 3388: (dig-block-b_2_23-build-2 loader_3) - end (move loader_3 b_2_23 b_2_22) - start

3390.96: *Invariant for* (p-dig-block-b_2_21-build-1 loader_2)

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Invariant for (dig-block-b_2_24-build-2 loader_2)
           Invariant for (move loader_3 b_2_23 b_2_22)
3390.96: Update of changing Primitive Numerical Expressions
3390.96: (move loader_3 b_2_23 b_2_22) - end
3390.97: Invariant for (p-dig-block-b_2_21-build-1 loader_2)
           Invariant for (dig-block-b_2_24-build-2 loader_2)
3390.97: Update of changing Primitive Numerical Expressions
3390.97: (dig-block-b_2_22-build-2 loader_3) - start
3404.49: Invariant for (p-dig-block-b_2_21-build-1 loader_2)
           Invariant for (dig-block-b_2_24-build-2 loader_2)
           Invariant for (dig-block-b_2_22-build-2 loader_3)
3404.49: Update of changing Primitive Numerical Expressions
3404.49: (dig-block-b_2_24-build-2 loader_2) - end
           (move loader_2 b_2_24 b_2_20) - start
3409.31: Invariant for (p-dig-block-b_2_21-build-1 loader_2)
           Invariant for (dig-block-b_2_22-build-2 loader_3)
           Invariant for (move loader_2 b_2_24 b_2_20)
3409.31: Update of changing Primitive Numerical Expressions
3409.31: (move loader_2 b_2_24 b_2_20) - end
3409.31: Invariant for (p-dig-block-b_2_21-build-1 loader_2)
           Invariant for (dig-block-b_2_22-build-2 loader_3)
3409.31: Update of changing Primitive Numerical Expressions
3409.31: (dig-block-b_2_20-build-0 loader_2) - start
3550.97: Invariant for (p-dig-block-b_2_21-build-1 loader_2)
           Invariant for (dig-block-b_2_22-build-2 loader_3)
           Invariant for (dig-block-b_2_20-build-0 loader_2)
3550.97: Update of changing Primitive Numerical Expressions
3550.97: (dig-block-b_2_22-build-2 loader_3) - end
           Invariant for (p-dig-block-b_2_21-build-1 loader_2)
3864.7:
           Invariant for (dig-block-b_2_20-build-0 loader_2)
3864.7:
           Update of changing Primitive Numerical Expressions
3864.7:
           (p-dig-block-b_2_21-build-1 loader_2) - end
4369.23: Invariant for (dig-block-b_2_20-build-0 loader_2)
4369.23: Update of changing Primitive Numerical Expressions
```

4369.23: (dig-block-b_2_20-build-0 loader_2) - end

2.3 Plan Validation

Time Details

0: Event triggered!

Activated process (crushing pc3) Activated process (timing)

0: Checking Happening... ...OK!

Deleting (at loader_2 locloader_2)
Deleting (at loader_3 locloader_3)

- **3.63:** Checking Happening... ...OK!
- **3.63:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -100t + 3000

(current-time)(t) = t

Updating (crusher_supply pc3) (3000) by 2637 for continuous

update.

Updating (current-time) (0) by 3.63 for continuous update.

3.63: Checking Happening... ...OK!

Adding (at loader_3 b_2_44)

- **3.631:** Checking Happening... ...OK!
- **3.631:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -100t + 2637

(current-time)(t) = t + 3.63

Updating (crusher_supply pc3) (2637) by 2636.9 for continuous

update.

Updating (current-time) (3.63) by 3.631 for continuous update.

3.631: Checking Happening... ...OK!

Deleting (nodigging loader_3)

Decreasing (trucks-available) (10) by 0.

5.35: Checking Happening... ...OK!

5.35: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 2636.9

(current-time)(t) = t + 3.631

 $(tonnage block-b_2_4)(t) = -50t + 13299$

Updating (crusher_supply pc3) (2636.9) by 2550.95 for continuous update.

Updating (current-time) (3.631) by 5.35 for continuous update. Updating (tonnage block-b_2_44) (13299) by 13213.1 for continuous update.

- **5.35:** Checking Happening... ...OK! Adding (at loader_2 b_2_45)
- **5.351:** Checking Happening... ...OK!
- **5.351:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 2550.95

(current-time)(t) = t + 5.35

 $(tonnage block-b_2_44)(t) = -50t + 13213$

Updating (crusher_supply pc3) (2550.95) by 2550.9 for continuous update.

Updating (current-time) (5.35) by 5.351 for continuous update. Updating (tonnage block-b_2_44) (13213.1) by 13213 for continuous update.

5.351: Checking Happening... ...OK!

Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

- **269.611:** Checking Happening... ...OK!
- **269.611:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = 2550.9

(current-time)(t) = t + 5.351

(tonnage block-b_2_44)(t) = -50t + 13213

(tonnage block-b_2_45)(t) = -50t + 20363

Updating (crusher_supply pc3) (2550.9) by 2550.9 for continuous update.

Updating (current-time) (5.351) by 269.611 for continuous update.

Updating (tonnage block-b_2_44) (13213) by 4.54747e-13 for continuous update.

Updating (tonnage block-b_2_45) (20363) by 7150 for continuous update.

269.611: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_44-build-1)

Deleting (at loader_3 b_2_44)

Adding (nodigging loader_3)

Adding (digged-block-b_2_44-build-1)

Increasing (trucks-available) (10) by 0.

- 273.241: Checking Happening... ...OK!
- **273.241:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 2550.9

(current-time)(t) = t + 269.611

 $(tonnage block-b_2_45)(t) = -50t + 7150$

Updating (crusher_supply pc3) (2550.9) by 2369.4 for continuous update.

Updating (current-time) (269.611) by 273.241 for continuous update.

Updating (tonnage block-b_2_45) (7150) by 6968.5 for continuous update.

- 273.241: Checking Happening... ...OK!
 Adding (at loader_3 locloader_2)
- **273.242:** Checking Happening... ...OK!
- **273.242:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 2369.4

(current-time)(t) = t + 273.241

(tonnage block-b_2_45)(t) = -50t + 6968.5

Updating (crusher_supply pc3) (2369.4) by 2369.35 for continuous update.

Updating (current-time) (273.241) by 273.242 for continuous update.

Updating (tonnage block-b_2_45) (6968.5) by 6968.45 for continuous update.

273.242: Checking Happening... ...OK!

Deleting (at loader_3 locloader_2)

- **277.222:** Checking Happening... ...OK!
- 277.222: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 2369.35

(current-time)(t) = t + 273.242

(tonnage block-b_2_45)(t) = -50t + 6968.45

Updating (crusher_supply pc3) (2369.35) by 2170.35 for continuous update.

Updating (current-time) (273.242) by 277.222 for continuous update.

Updating (tonnage block-b_2_45) (6968.45) by 6769.45 for continuous update.

- 277.222: Checking Happening... ...OK! Adding (at loader_3 b_2_43)
- 277.223: Checking Happening... ...OK!
- 277.223: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 2170.35

(current-time)(t) = t + 277.222

(tonnage block-b_2_45)(t) = -50t + 6769.45

Updating (crusher_supply pc3) (2170.35) by 2170.3 for continuous update.

Updating (current-time) (277.222) by 277.223 for continuous update.

Updating (tonnage block-b_2_45) (6769.45) by 6769.4 for continuous update.

277.223: Checking Happening... ...OK!

Deleting (nodigging loader_3)

Decreasing (trucks-available) (10) by 0.

- 412.611: Checking Happening... ...OK!
- 412.611: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 2170.3

(current-time)(t) = t + 277.223

 $(tonnage block-b_2_43)(t) = -50t + 23654$

(tonnage block-b_2_45)(t) = -50t + 6769.4

Updating (crusher_supply pc3) (2170.3) by 2170.3 for continuous update.

Updating (current-time) (277.223) by 412.611 for continuous update.

Updating (tonnage block-b_2_43) (23654) by 16884.6 for continuous update.

Updating (tonnage block- $\mathbf{b}_{-}\mathbf{2}_{-}\mathbf{45}$) (6769.4) by -1.02318e-12 for continuous update.

412.611: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_45-build-1)

Deleting (at loader_2 b_2_45)

Adding (nodigging loader_2)

Adding (digged-block-b_2_45-build-1)

Increasing (trucks-available) (10) by 0.

- 417.961: Checking Happening... ... OK!
- 417.961: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 2170.3

(current-time)(t) = t + 412.611

(tonnage block-b_2_43)(t) = -50t + 16884.6

Updating (crusher_supply pc3) (2170.3) by 1902.8 for continuous update.

Updating (current-time) (412.611) by 417.961 for continuous update.

Updating (tonnage block-b_2_43) (16884.6) by 16617.1 for continuous update.

- 417.961: Checking Happening... ...OK! Adding (at loader_2 locloader_2)
- **417.962:** Checking Happening... ...OK!
- 417.962: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 1902.8

(current-time)(t) = t + 417.961

(tonnage block-b_2_43)(t) = -50t + 16617.1

Updating (crusher_supply pc3) (1902.8) by 1902.75 for continuous update.

Updating (current-time) (417.961) by 417.962 for continuous update.

Updating (tonnage block- $\mathbf{b}_{-}\mathbf{2}_{-}\mathbf{43}$) (16617.1) by 16617.1 for continuous update.

- 417.962: Checking Happening... ...OK!

 Deleting (at loader_2 locloader_2)
- **421.382:** Checking Happening... ...OK!
- 421.382: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 1902.75

(current-time)(t) = t + 417.962

(tonnage block-b_2_43)(t) = -50t + 16617.1

Updating (crusher_supply pc3) (1902.75) by 1731.75 for continuous update.

Updating (current-time) (417.962) by 421.382 for continuous update.

Updating (tonnage block-b_2_43) (16617.1) by 16446.1 for continuous update.

- **421.382:** Checking Happening... ...OK! Adding (at loader_2 b_2_42)
- **421.383:** Checking Happening... ...OK!
- **421.383:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 1731.75

(current-time)(t) = t + 421.382

 $(tonnage block-b_2_43)(t) = -50t + 16446.1$

Updating (crusher_supply pc3) (1731.75) by 1731.7 for continuous update.

Updating (current-time) (421.382) by 421.383 for continuous update

Updating (tonnage block-b_2_43) (16446.1) by 16446 for continuous update.

421.383: Checking Happening... ...OK!

Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

514.506: Checking Happening... ...OK!

514.506: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 1731.7

(current-time)(t) = t + 421.383

 $(tonnage block-b_2_42)(t) = -50t + 11017$

(tonnage block-b_2_43)(t) = -50t + 16446

Updating (crusher_supply pc3) (1731.7) by 1731.7 for continuous update.

Updating (current-time) (421.383) by 514.506 for continuous update.

Updating (tonnage block-b_2_42) (11017) by 6360.85 for continuous update.

Updating (tonnage block-b_2_43) (16446) by 11789.9 for continuous update.

514.506: Checking Happening... ...OK!

Deleting (not-partially-digged-block-b_2_42-build-1)

Adding (nodigging loader_2)

Adding (partially-digged-block-b_2_42-build-1)

Increasing (trucks-available) (10) by 0.

514.509: Checking Happening... ...OK!

514.509: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 1731.7

(current-time)(t) = t + 514.506

(tonnage block-b_2_43)(t) = -50t + 11789.9

Updating (crusher_supply pc3) (1731.7) by 1731.55 for continuous update.

Updating (current-time) (514.506) by 514.509 for continuous update.

Updating (tonnage block-b_2_43) (11789.9) by 11789.7 for continuous update.

514.509: Checking Happening... ...OK!

Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

641.732: Checking Happening... ...OK!

641.732: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 1731.55

(current-time)(t) = t + 514.509

(tonnage block-b_2_42)(t) = -50t + 6360.85

(tonnage block-b_2_43)(t) = -50t + 11789.7

Updating (crusher_supply pc3) (1731.55) by 1731.55 for continuous update.

Updating (current-time) (514.509) by 641.732 for continuous update.

Updating (tonnage block-b_2_42) (6360.85) by -0.3 for continuous update.

Updating (tonnage block- $\mathbf{b}_{-}\mathbf{2}_{-}\mathbf{43}$) (11789.7) by 5428.55 for continuous update.

641.732: Checking Happening... ...OK!

Deleting (not-partially-digged-block-b_2_42-build-0)

Deleting (at loader_2 b_2_42)

Adding (nodigging loader_2)

Adding (partially-digged-block-b_2_42-build-0)

Increasing (trucks-available) (10) by 0.

- **645.152:** Checking Happening... ...OK!
- **645.152:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 1731.55

(current-time)(t) = t + 641.732

(tonnage block-b_2_43)(t) = -50t + 5428.55

Updating (crusher_supply pc3) (1731.55) by 1560.55 for continuous update.

Updating (current-time) (641.732) by 645.152 for continuous update.

Updating (tonnage block-b_2_43) (5428.55) by 5257.55 for continuous update.

645.152: Checking Happening... ...OK!

Adding (at loader_2 locloader_2)

- **645.153:** Checking Happening... ...OK!
- **645.153:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 1560.55

(current-time)(t) = t + 645.152

(tonnage block-b_2_43)(t) = -50t + 5257.55

Updating (crusher_supply pc3) (1560.55) by 1560.5 for continuous update.

Updating (current-time) (645.152) by 645.153 for continuous update.

Updating (tonnage block-b_2_43) (5257.55) by 5257.5 for continuous update.

- 645.153: Checking Happening... ...OK!

 Deleting (at loader_2 locloader_2)
- **649.093:** Checking Happening... ...OK!
- **649.093:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 1560.5

(current-time)(t) = t + 645.153

(tonnage block-b_2_43)(t) = -50t + 5257.5

Updating (crusher_supply pc3) (1560.5) by 1363.5 for continuous update.

Updating (current-time) (645.153) by 649.093 for continuous update.

Updating (tonnage block-b_2_43) (5257.5) by 5060.5 for continuous update.

- 649.093: Checking Happening... ...OK! Adding (at loader_2 b_2_41)
- **649.094:** Checking Happening... ...OK!
- **649.094:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 1363.5

(current-time)(t) = t + 649.093

 $(tonnage block-b_2_43)(t) = -50t + 5060.5$

Updating (crusher_supply pc3) (1363.5) by 1363.45 for continuous update.

Updating (current-time) (649.093) by 649.094 for continuous update.

Updating (tonnage block-b_2_43) (5060.5) by 5060.45 for continuous update.

649.094: Checking Happening... ...OK! Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

750.303: Checking Happening... ...OK!

750.303: Checking Happening... ...OK!

 $(crusher_supply pc3)(t) = 1363.45$

(current-time)(t) = t + 649.094

 $(tonnage block-b_2_41)(t) = -50t + 7999$

(tonnage block-b_2_43)(t) = -50t + 5060.45

Updating (crusher_supply pc3) (1363.45) by 1363.45 for continuous update.

Updating (current-time) (649.094) by 750.303 for continuous update

Updating (tonnage block-b_2_41) (7999) by 2938.55 for continuous update.

Updating (tonnage block-b_2_43) (5060.45) by 3.41061e-12 for continuous update.

750.303: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_43-build-0)

Deleting (at loader_3 b_2_43)

Adding (nodigging loader_3)

Adding (digged-block-b_2_43-build-0)

Increasing (trucks-available) (10) by 0.

754.283: Checking Happening... ...OK!

754.283: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 1363.45

(current-time)(t) = t + 750.303

(tonnage block-b_2_41)(t) = -50t + 2938.55

Updating (crusher_supply pc3) (1363.45) by 1164.45 for con-

tinuous update.

Updating (current-time) (750.303) by 754.283 for continuous update.

Updating (tonnage block-b_2_41) (2938.55) by 2739.55 for continuous update.

754.283: Checking Happening... ...OK!

Adding (at loader_3 locloader_2)

754.284: Checking Happening... ...OK!

754.284: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 1164.45

(current-time)(t) = t + 754.283

(tonnage block-b_2_41)(t) = -50t + 2739.55

Updating (crusher_supply pc3) (1164.45) by 1164.4 for continuous update.

Updating (current-time) (754.283) by 754.284 for continuous update.

Updating (tonnage block-b_2_41) (2739.55) by 2739.5 for continuous update.

- 754.284: Checking Happening... ...OK!
 Deleting (at loader_3 locloader_2)
- 758.144: Checking Happening... ...OK!
- 758.144: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 1164.4

(current-time)(t) = t + 754.284

(tonnage block-b_2_41)(t) = -50t + 2739.5

Updating (crusher_supply pc3) (1164.4) by 971.4 for continuous update.

Updating (current-time) (754.284) by 758.144 for continuous update.

Updating (tonnage block-b_2_41) (2739.5) by 2546.5 for continuous update.

- **758.144:** Checking Happening... ...OK! Adding (at loader_3 b_2_39)
- **758.145:** Checking Happening... ...OK!
- **758.145:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 971.4

(current-time)(t) = t + 758.144

(tonnage block-b_2_41)(t) = -50t + 2546.5

Updating (crusher_supply pc3) (971.4) by 971.35 for continuous update.

Updating (current-time) (758.144) by 758.145 for continuous update.

Updating (tonnage block-b_2_41) (2546.5) by 2546.45 for continuous update.

758.145: Checking Happening... ...OK!

Deleting (nodigging loader_3)

Decreasing (trucks-available) (10) by 0.

809.074: Checking Happening... ...OK!

809.074: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 971.35

(current-time)(t) = t + 758.145

 $(tonnage block-b_2_39)(t) = -50t + 8298$

(tonnage block-b_2_41)(t) = -50t + 2546.45

Updating (crusher_supply pc3) (971.35) by 971.35 for continuous update.

Updating (current-time) (758.145) by 809.074 for continuous update.

Updating (tonnage block-b_2_39) (8298) by 5751.55 for continuous update.

Updating (tonnage block-b_2_41) (2546.45) by 5.22959e-12 for continuous update.

809.074: Checking Happening... ...OK!

Deleting (at loader_2 b_2_41)

Deleting (not-digged-block-b_2_41-build-1)

Adding (nodigging loader_2)

Adding (digged-block-b_2_41-build-1)

Increasing (trucks-available) (10) by 0.

813.014: Checking Happening... ...OK!

813.014: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 971.35

(current-time)(t) = t + 809.074

 $(tonnage block-b_2_39)(t) = -50t + 5751.55$

Updating (crusher_supply pc3) (971.35) by 774.35 for continuous update.

Updating (current-time) (809.074) by 813.014 for continuous update.

Updating (tonnage block-b_2_39) (5751.55) by 5554.55 for continuous update.

813.014: Checking Happening... ...OK!
Adding (at loader_2 locloader_2)

813.015: Checking Happening... ...OK!

813.015: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 774.35

(current-time)(t) = t + 813.014

 $(tonnage block-b_2_39)(t) = -50t + 5554.55$

Updating (crusher_supply pc3) (774.35) by 774.3 for continuous update.

Updating (current-time) (813.014) by 813.015 for continuous update.

Updating (tonnage block-b_2_39) (5554.55) by 5554.5 for continuous update.

813.015: Checking Happening... ...OK!

Deleting (at loader_2 locloader_2)

816.735: Checking Happening... ...OK!

816.735: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 774.3

(current-time)(t) = t + 813.015

 $(tonnage block-b_2_39)(t) = -50t + 5554.5$

Updating (crusher_supply pc3) (774.3) by 588.3 for continuous update.

Updating (current-time) (813.015) by 816.735 for continuous update.

Updating (tonnage block-b_2_39) (5554.5) by 5368.5 for continuous update.

816.735: Checking Happening... ...OK! Adding (at loader_2 b_2_40)

816.736: Checking Happening... ...OK!

816.736: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 588.3

(current-time)(t) = t + 816.735

(tonnage block-b_2_39)(t) = -50t + 5368.5

Updating (crusher_supply pc3) (588.3) by 588.25 for continuous update.

Updating (current-time) (816.735) by 816.736 for continuous update.

Updating (tonnage block-b_2_39) (5368.5) by 5368.45 for continuous update.

816.736: Checking Happening... ...OK!

Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

- 924.105: Checking Happening... ...OK!
- 924.105: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 588.25

(current-time)(t) = t + 816.736

(tonnage block-b_2_39)(t) = -50t + 5368.45

(tonnage block-b_2_40)(t) = -50t + 16060

Updating (crusher_supply pc3) (588.25) by 588.25 for continuous update.

Updating (current-time) (816.736) by 924.105 for continuous update.

Updating (tonnage block-b_2_39) (5368.45) by -2.50111e-12 for continuous update.

Updating (tonnage block-b_2_40) (16060) by 10691.5 for continuous update.

924.105: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_39-build-2)

Deleting (at loader_3 b_2_39)

Adding (nodigging loader_3)

Adding (digged-block-b_2_39-build-2)

Increasing (trucks-available) (10) by 0.

- 927.965: Checking Happening... ...OK!
- 927.965: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 588.25

(current-time)(t) = t + 924.105

 $(tonnage block-b_2_40)(t) = -50t + 10691.5$

Updating (crusher_supply pc3) (588.25) by 395.25 for continuous update.

Updating (current-time) (924.105) by 927.965 for continuous update.

Updating (tonnage block- $\mathbf{b}_{-}\mathbf{2}_{-}\mathbf{40}$) (10691.5) by 10498.5 for continuous update.

- 927.965: Checking Happening... ...OK!
 Adding (at loader_3 locloader_2)
- 927.966: Checking Happening... ...OK!
- **927.966:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 395.25

(current-time)(t) = t + 927.965

(tonnage block-b_2_40)(t) = -50t + 10498.5

Updating (crusher_supply pc3) (395.25) by 395.2 for continuous update.

Updating (current-time) (927.965) by 927.966 for continuous update.

Updating (tonnage block-b_2_40) (10498.5) by 10498.5 for continuous update.

- **927.966:** Checking Happening... ...OK! Deleting (at loader_3 locloader_2)
- 931.546: Checking Happening... ...OK!
- 931.546: Checking Happening... ...OK!

 $(crusher_supply pc3)(t) = -50t + 395.2$

(current-time)(t) = t + 927.966

(tonnage block-b_2_40)(t) = -50t + 10498.5

Updating (crusher_supply pc3) (395.2) by 216.2 for continuous update.

Updating (current-time) (927.966) by 931.546 for continuous update.

Updating (tonnage block-b_2_40) (10498.5) by 10319.5 for continuous update.

931.546: Checking Happening... ...OK! Adding (at loader_3 b_2_37)

931.547: Checking Happening... ...OK!

931.547: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 216.2

(current-time)(t) = t + 931.546

(tonnage block-b_2_40)(t) = -50t + 10319.5

Updating (crusher_supply pc3) (216.2) by 216.15 for continuous update.

Updating (current-time) (931.546) by 931.547 for continuous update.

Updating (tonnage block-b_2_40) (10319.5) by 10319.4 for continuous update.

931.547: Checking Happening... ...OK!

Deleting (nodigging loader_3)

Decreasing (trucks-available) (10) by 0.

1097.67: Checking Happening... ...OK!

1097.67: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 216.15

(current-time)(t) = t + 931.547

 $(tonnage block-b_2_37)(t) = -50t + 10858$

(tonnage block-b_2_40)(t) = -50t + 10319.4

Updating (crusher_supply pc3) (216.15) by 216.15 for continuous update.

Updating (current-time) (931.547) by 1097.67 for continuous update.

Updating (tonnage block-b_2_37) (10858) by 2551.85 for continuous update.

Updating (tonnage block-b_2_40) (10319.4) by 2013.3 for continuous update.

1097.67: Checking Happening... ...OK!

Deleting (not-partially-digged-block-b_2_37-build-1)

Deleting (at loader_3 b_2_37)

Adding (nodigging loader_3)

Adding (partially-digged-block-b_2_37-build-1)

Increasing (trucks-available) (10) by 0.

1098.86: Checking Happening... ...OK!

1098.86: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 216.15

(current-time)(t) = t + 1097.67

(tonnage block-b_2_40)(t) = -50t + 2013.3

Updating (crusher_supply pc3) (216.15) by 156.65 for continuous update.

Updating (current-time) (1097.67) by 1098.86 for continuous update.

Updating (tonnage block-b_2_40) (2013.3) by 1953.8 for continuous update.

1098.86: Checking Happening... ...OK! Adding (at loader_3 b_2_38)

1098.86: Checking Happening... ...OK!

1098.86: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 156.65

(current-time)(t) = t + 1098.86

 $(tonnage block-b_2_40)(t) = -50t + 1953.8$

Updating (crusher_supply pc3) (156.65) by 156.6 for continuous update.

Updating (current-time) (1098.86) by 1098.86 for continuous update.

Updating (tonnage block-b_2_40) (1953.8) by 1953.75 for continuous update.

1098.86: Checking Happening... ...OK!

Deleting (nodigging loader_3)

Decreasing (trucks-available) (10) by 0.

1137.94: Checking Happening... ...OK!

1137.94: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 156.6

(current-time)(t) = t + 1098.86

(tonnage block-b_2_38)(t) = -50t + 10000

(tonnage block-b_2_40)(t) = -50t + 1953.75

Updating (crusher_supply pc3) (156.6) by 156.6 for continuous update.

Updating (current-time) (1098.86) by 1137.94 for continuous update.

Updating (tonnage block-b_2_38) (10000) by 8046.25 for continuous update.

Updating (tonnage block-b_2_40) (1953.75) by 4.09273e-12 for continuous update.

1137.94: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_40-build-1)

Deleting (at loader_2 b_2_40)

Adding (nodigging loader_2)

Adding (digged-block-b_2_40-build-1)

Increasing (trucks-available) (10) by 0.

- **1141.66:** Checking Happening... ...OK!
- **1141.66:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 156.6

(current-time)(t) = t + 1137.94

(tonnage block-b_2_38)(t) = -50t + 8046.25

Updating (crusher_supply pc3) (156.6) by -29.4 for continuous update.

Updating (current-time) (1137.94) by 1141.66 for continuous update.

Updating (tonnage block-b_2_38) (8046.25) by 7860.25 for continuous update.

1141.66: Checking Happening... ...OK!

Adding (at loader_2 locloader_2)

- **1141.66:** Checking Happening... ...OK!
- **1141.66:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t - 29.4

(current-time)(t) = t + 1141.66

(tonnage block-b_2_38)(t) = -50t + 7860.25

Updating (crusher_supply pc3) (-29.4) by -29.45 for continuous update.

Updating (current-time) (1141.66) by 1141.66 for continuous update.

Updating (tonnage block-b_2_38) (7860.25) by 7860.2 for continuous update.

- 1141.66: Checking Happening... ...OK!

 Deleting (at loader_2 locloader_2)
- 1145.24: Checking Happening... ...OK!
- 1145.24: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t - 29.45

(current-time)(t) = t + 1141.66

 $(tonnage block-b_2_38)(t) = -50t + 7860.2$

Updating (crusher_supply pc3) (-29.45) by -208.45 for continuous update.

Updating (current-time) (1141.66) by 1145.24 for continuous update.

Updating (tonnage block-b_2_38) (7860.2) by 7681.2 for continuous update.

- 1145.24: Checking Happening... ...OK! Adding (at loader_2 b_2_37)
- 1145.24: Checking Happening... ...OK!
- 1145.24: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t - 208.45

(current-time)(t) = t + 1145.24

 $(tonnage block-b_2_38)(t) = -50t + 7681.2$

Updating (crusher_supply pc3) (-208.45) by -208.5 for continuous update.

Updating (current-time) (1145.24) by 1145.24 for continuous update.

Updating (tonnage block-b_2_38) (7681.2) by 7681.15 for continuous update.

1145.24: Checking Happening... ...OK!

Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

- 1196.29: Checking Happening... ...OK!
- **1196.29:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -208.5

(current-time)(t) = t + 1145.24

(tonnage block-b_2_37)(t) = -50t + 2551.85

(tonnage block-b_2_38)(t) = -50t + 7681.15

Updating (crusher_supply pc3) (-208.5) by -208.5 for continuous update.

Updating (current-time) (1145.24) by 1196.29 for continuous update.

Updating (tonnage block-b_2_37) (2551.85) by -0.85 for continuous update.

Updating (tonnage block-b_2_38) (7681.15) by 5128.45 for continuous update.

1196.29: Checking Happening... ...OK!

Deleting (at loader_2 b_2_37)

Deleting (not-partially-digged-block-b_2_37-build-0)

Adding (nodigging loader_2)

Adding (partially-digged-block-b_2_37-build-0)

Increasing (trucks-available) (10) by 0.

- 1199.87: Checking Happening... ...OK!
- 1199.87: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t - 208.5

(current-time)(t) = t + 1196.29

(tonnage block-b_2_38)(t) = -50t + 5128.45

Updating (crusher_supply pc3) (-208.5) by -387.5 for continuous update.

Updating (current-time) (1196.29) by 1199.87 for continuous update.

Updating (tonnage block- \mathbf{b}_{-2} -38) (5128.45) by 4949.45 for continuous update.

1199.87: Checking Happening... ...OK!

Adding (at loader_2 locloader_2)

- 1199.87: Checking Happening... ...OK!
- 1199.87: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t - 387.5

(current-time)(t) = t + 1199.87

 $(tonnage block-b_2_38)(t) = -50t + 4949.45$

Updating (crusher_supply pc3) (-387.5) by -387.55 for continuous update.

Updating (current-time) (1199.87) by 1199.87 for continuous update.

Updating (tonnage block-b_2_38) (4949.45) by 4949.4 for continuous update.

- 1199.87: Checking Happening... ...OK!

 Deleting (at loader_2 locloader_2)
- 1203.33: Checking Happening... ...OK!
- 1203.33: Checking Happening... ...OK! (crusher_supply pc3)(t) = -50t 387.55 (current-time)(t) = t + 1199.87

(tonnage block-b_2_38)(t) = -50t + 4949.4

Updating (crusher_supply pc3) (-387.55) by -560.55 for continuous update.

Updating (current-time) (1199.87) by 1203.33 for continuous update.

Updating (tonnage block-b_2_38) (4949.4) by 4776.4 for continuous update.

- **1203.33:** Checking Happening... ...OK! Adding (at loader_2 b_2_36)
- **1203.33:** Checking Happening... ...OK!
- 1203.33: Checking Happening... ...OK! (crusher_supply pc3)(t) = -50t 560.55 (current-time)(t) = t + 1203.33 (tonnage block-b_2_38)(t) = -50t + 4776.4

Updating (crusher_supply pc3) (-560.55) by -560.6 for continuous update.

Updating (current-time) (1203.33) by 1203.33 for continuous update.

Updating (tonnage block-b_2_38) (4776.4) by 4776.35 for continuous update.

1203.33: Checking Happening... ...OK!

Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

1298.86: Checking Happening... ...OK!

1298.86: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -560.6

(current-time)(t) = t + 1203.33

 $(tonnage block-b_2_36)(t) = -50t + 13810$

(tonnage block-b_2_38)(t) = -50t + 4776.35

Updating (crusher_supply pc3) (-560.6) by -560.6 for continu-

ous update.

Updating (current-time) (1203.33) by 1298.86 for continuous update.

Updating (tonnage block-b_2_36) (13810) by 9033.65 for continuous update.

Updating (tonnage block-b_2_38) (4776.35) by -1.81899e-12 for continuous update.

1298.86: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_38-build-1)

Deleting (at loader_3 b_2_38) Adding (nodigging loader_3)

Adding (digged-block-b_2_38-build-1)

Increasing (trucks-available) (10) by 0.

1302.42: Checking Happening... ...OK!

1302.42: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t - 560.6

(current-time)(t) = t + 1298.86

(tonnage block-b_2_36)(t) = -50t + 9033.65

Updating (crusher_supply pc3) (-560.6) by -738.6 for continuous update.

Updating (current-time) (1298.86) by 1302.42 for continuous update.

Updating (tonnage block-b_2_36) (9033.65) by 8855.65 for continuous update.

1302.42: Checking Happening... ...OK!

Adding (at loader_3 locloader_2)

1302.42: Checking Happening... ...OK!

1302.42: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t - 738.6

(current-time)(t) = t + 1302.42

(tonnage block-b_2_36)(t) = -50t + 8855.65

Updating (crusher_supply pc3) (-738.6) by -738.65 for continuous update.

Updating (current-time) (1302.42) by 1302.42 for continuous update.

Updating (tonnage block-b_2_36) (8855.65) by 8855.6 for continuous update.

- 1302.42: Checking Happening... ...OK!

 Deleting (at loader_3 locloader_2)
- 1309.04: Checking Happening... ...OK!
- **1309.04:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t - 738.65

(current-time)(t) = t + 1302.42

 $(tonnage block-b_2_36)(t) = -50t + 8855.6$

Updating (crusher_supply pc3) (-738.65) by -1069.65 for continuous update.

Updating (current-time) (1302.42) by 1309.04 for continuous update.

Updating (tonnage block-b_2_36) (8855.6) by 8524.6 for continuous update.

- 1309.04: Checking Happening... ...OK! Adding (at loader_3 b_2_35)
- 1309.04: Checking Happening... ...OK!
- 1309.04: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t - 1069.65

(current-time)(t) = t + 1309.04

(tonnage block-b_2_36)(t) = -50t + 8524.6

Updating (crusher_supply pc3) (-1069.65) by -1069.7 for continuous update.

Updating (current-time) (1309.04) by 1309.04 for continuous update.

Updating (tonnage block-b_2_36) (8524.6) by 8524.55 for continuous update.

1309.04: Checking Happening... ...OK!

Deleting (nodigging loader_3)

Decreasing (trucks-available) (10) by 0.

1479.53: Checking Happening... ...OK!

1479.53: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -1069.7

(current-time)(t) = t + 1309.04

 $(tonnage block-b_2_35)(t) = -50t + 14499$

(tonnage block-b_2_36)(t) = -50t + 8524.55

Updating (crusher_supply pc3) (-1069.7) by -1069.7 for continuous update.

Updating (current-time) (1309.04) by 1479.53 for continuous update.

Updating (tonnage block-b_2_35) (14499) by 5974.45 for continuous update.

Updating (tonnage block-b_2_36) (8524.55) by -2.27374e-12 for continuous update.

1479.53: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_36-build-0)

Deleting (at loader_2 b_2_36)

Adding (nodigging loader_2)

Adding (digged-block-b_2_36-build-0)

Increasing (trucks-available) (10) by 0.

1482.99: Checking Happening... ...OK!

1482.99: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t - 1069.7

(current-time)(t) = t + 1479.53

(tonnage block-b_2_35)(t) = -50t + 5974.45

Updating (crusher_supply pc3) (-1069.7) by -1242.7 for continuous update.

Updating (current-time) (1479.53) by 1482.99 for continuous update.

Updating (tonnage block-b_2_35) (5974.45) by 5801.45 for continuous update.

- 1482.99: Checking Happening... ...OK! Adding (at loader_2 locloader_2)
- 1482.99: Checking Happening... ...OK!
- 1482.99: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t - 1242.7

(current-time)(t) = t + 1482.99

 $(tonnage block-b_2_35)(t) = -50t + 5801.45$

Updating (crusher_supply pc3) (-1242.7) by -1242.75 for continuous update.

Updating (current-time) (1482.99) by 1482.99 for continuous update.

Updating (tonnage block-b_2_35) (5801.45) by 5801.4 for continuous update.

- 1482.99: Checking Happening... ...OK!
 Deleting (at loader_2 locloader_2)
- **1489.5:** Checking Happening... ...OK!
- 1489.5: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t - 1242.75

(current-time)(t) = t + 1482.99

(tonnage block-b_2_35)(t) = -50t + 5801.4

Updating (crusher_supply pc3) (-1242.75) by -1568.25 for continuous update.

Updating (current-time) (1482.99) by 1489.5 for continuous update

Updating (tonnage block-b_2_35) (5801.4) by 5475.9 for continuous update.

- 1489.5: Checking Happening... ...OK! Adding (at loader_2 b_2_33)
- 1489.51: Checking Happening... ...OK!
- 1489.51: Checking Happening... ...OK! (crusher_supply pc3)(t) = -50t 1568.25 (current-time)(t) = t + 1489.5

(tonnage block-b_2_35)(t) = -50t + 5475.9

Updating (crusher_supply pc3) (-1568.25) by -1568.3 for continuous update.

Updating (current-time) (1489.5) by 1489.51 for continuous update.

Updating (tonnage block-b_2_35) (5475.9) by 5475.85 for continuous update.

1489.51: Checking Happening... ...OK!

Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

- **1489.51:** Checking Happening... ...OK!
- **1489.51:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -1568.3

(current-time)(t) = t + 1489.51

 $(tonnage block-b_2_3)(t) = -50t + 25899$

(tonnage block-b_2_35)(t) = -50t + 5475.85

Updating (crusher_supply pc3) (-1568.3) by -1568.3 for continuous update.

Updating (current-time) (1489.51) by 1489.51 for continuous update.

Updating (tonnage block-b_2_33) (25899) by 25899 for continuous update.

Updating (tonnage block-b_2_35) (5475.85) by 5475.8 for continuous update.

1489.51: Checking Happening... ...OK!

Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

- 1599.02: Checking Happening... ...OK!
- 1599.02: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 50t - 1568.3

(current-time)(t) = t + 1489.51

 $(tonnage block-b_2_3)(t) = -100t + 25899$

(tonnage block-b_2_35)(t) = -50t + 5475.8

Updating (crusher_supply pc3) (-1568.3) by 3907.5 for continuous update.

Updating (current-time) (1489.51) by 1599.02 for continuous update.

Updating (tonnage block-b_2_33) (25899) by 14947.4 for continuous update.

Updating (tonnage block-b_2_35) (5475.8) by -4.54747e-13 for continuous update.

1599.02: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_35-build-2)

Deleting (at loader_3 b_2_35)

Adding (nodigging loader_3)

Adding (digged-block-b_2_35-build-2)

Increasing (trucks-available) (10) by 0.

- **1605.64:** Checking Happening... ...OK!
- **1605.64:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = 3907.5

(current-time)(t) = t + 1599.02

 $(tonnage block-b_2_3)(t) = -100t + 14947.4$

Updating (crusher_supply pc3) (3907.5) by 3907.5 for continuous update.

Updating (current-time) (1599.02) by 1605.64 for continuous update.

Updating (tonnage block-b_2_33) (14947.4) by 14285.4 for continuous update.

1605.64: Checking Happening... ...OK!

Adding (at loader_3 locloader_2)

- **1605.64:** Checking Happening... ...OK!
- **1605.64:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = 3907.5

(current-time)(t) = t + 1605.64

(tonnage block-b_2_33)(t) = -100t + 14285.4

Updating (crusher_supply pc3) (3907.5) by 3907.5 for continuous update.

Updating (current-time) (1605.64) by 1605.64 for continuous update.

Updating (tonnage block- $\mathbf{b}_{-}\mathbf{2}_{-}\mathbf{33}$) (14285.4) by 14285.3 for continuous update.

- 1605.64: Checking Happening... ...OK!

 Deleting (at loader_3 locloader_2)
- **1612.21:** Checking Happening... ...OK!
- 1612.21: Checking Happening... ...OK! (crusher_supply pc3)(t) = 3907.5 (current-time)(t) = t + 1605.64

 $(tonnage block-b_2_3)(t) = -100t + 14285.3$

Updating (crusher_supply pc3) (3907.5) by 3907.5 for continuous update.

Updating (current-time) (1605.64) by 1612.21 for continuous update.

Updating (tonnage block-b_2_33) (14285.3) by 13628.3 for continuous update.

- **1612.21:** Checking Happening... ...OK! Adding (at loader_3 b_2_34)
- **1612.21:** Checking Happening... ...OK!
- 1612.21: Checking Happening... ...OK! (crusher_supply pc3)(t) = 3907.5 (current-time)(t) = t + 1612.21 (tonnage block-b_2_33)(t) = -100t + 13628.3

Updating (crusher_supply pc3) (3907.5) by 3907.5 for continuous update.

Updating (current-time) (1612.21) by 1612.21 for continuous update.

Updating (tonnage block-b_2_33) (13628.3) by 13628.2 for continuous update.

- 1612.21: Checking Happening... ...OK!

 Deleting (nodigging loader_3)

 Decreasing (trucks-available) (10) by 0.
- 1711.76: Checking Happening... ...OK!
- **1711.76:** Checking Happening... ... OK! (crusher_supply pc3)(t) = 50t + 3907.5

(current-time)(t) = t + 1612.21

(tonnage block-b_2_33)(t) = -100t + 13628.2

(tonnage block-b_2_34)(t) = -50t + 15132

Updating (crusher_supply pc3) (3907.5) by 8884.65 for continuous update.

Updating (current-time) (1612.21) by 1711.76 for continuous update.

Updating (tonnage block-b_2_33) (13628.2) by 3673.85 for continuous update.

Updating (tonnage block-b_2_34) (15132) by 10154.8 for continuous update.

1711.76: Checking Happening... ...OK!

Deleting (not-partially-digged-block-b_2_33-build-0)

Adding (nodigging loader_2)

Adding (partially-digged-block-b_2_33-build-0)

Increasing (trucks-available) (10) by 0.

1785.25: Checking Happening... ...OK!

1785.25: Checking Happening... ...OK!

 $(crusher_supply pc3)(t) = 8884.65$

(current-time)(t) = t + 1711.76

(tonnage block-b_2_33)(t) = -50t + 3673.85

(tonnage block-b_2_34)(t) = -50t + 10154.8

Updating (crusher_supply pc3) (8884.65) by 8884.65 for continuous update.

Updating (current-time) (1711.76) by 1785.25 for continuous update.

Updating (tonnage block- \mathbf{b}_{-2} -33) (3673.85) by -0.75 for continuous update.

Updating (tonnage block- $\mathbf{b}_{-}\mathbf{2}_{-}\mathbf{34}$) (10154.8) by 6480.25 for continuous update.

1785.25: Checking Happening... ...OK!

Deleting (not-partially-digged-block-b_2_33-build-1)

Deleting (at loader_2 b_2_33)

Adding (nodigging loader_2)

Adding (partially-digged-block-b_2_33-build-1)

Increasing (trucks-available) (10) by 0.

1791.76: Checking Happening... ...OK!

1791.76: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 884.65

(current-time)(t) = t + 1785.25

(tonnage block-b_2_34)(t) = -50t + 6480.25

Updating (crusher_supply pc3) (8884.65) by 8559.15 for continuous update.

Updating (current-time) (1785.25) by 1791.76 for continuous update.

Updating (tonnage block-b_2_34) (6480.25) by 6154.75 for continuous update.

- 1791.76: Checking Happening... ...OK! Adding (at loader_2 locloader_2)
- 1791.76: Checking Happening... ...OK!
- 1791.76: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 8559.15

(current-time)(t) = t + 1791.76

(tonnage block-b_2_34)(t) = -50t + 6154.75

Updating (crusher_supply pc3) (8559.15) by 8559.1 for continuous update.

Updating (current-time) (1791.76) by 1791.76 for continuous update.

Updating (tonnage block-b_2_34) (6154.75) by 6154.7 for continuous update.

- 1791.76: Checking Happening... ...OK!

 Deleting (at loader_2 locloader_2)
- 1798.21: Checking Happening... ...OK!
- 1798.21: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 8559.1

(current-time)(t) = t + 1791.76

(tonnage block-b_2_34)(t) = -50t + 6154.7

Updating (crusher_supply pc3) (8559.1) by 8236.6 for continuous update.

Updating (current-time) (1791.76) by 1798.21 for continuous update.

Updating (tonnage block-b_2_34) (6154.7) by 5832.2 for continuous update.

- 1798.21: Checking Happening... ...OK! Adding (at loader_2 b_2_32)
- **1798.21:** Checking Happening... ...OK!
- **1798.21:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 8236.6

(current-time)(t) = t + 1798.21

 $(tonnage block-b_2_34)(t) = -50t + 5832.2$

Updating (crusher_supply pc3) (8236.6) by 8236.55 for continuous update.

Updating (current-time) (1798.21) by 1798.21 for continuous update.

Updating (tonnage block-b_2_34) (5832.2) by 5832.15 for continuous update.

1798.21: Checking Happening... ...OK!
Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

- **1914.86:** Checking Happening... ...OK!
- **1914.86:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = 8236.55

(current-time)(t) = t + 1798.21

 $(tonnage block-b_2_32)(t) = -50t + 10000$

(tonnage block-b_2_34)(t) = -50t + 5832.15

Updating (crusher_supply pc3) (8236.55) by 8236.55 for continuous update.

Updating (current-time) (1798.21) by 1914.86 for continuous update.

Updating (tonnage block-b_2_32) (10000) by 4167.85 for continuous update.

Updating (tonnage block-b_2_34) (5832.15) by -5.45697e-12 for continuous update.

1914.86: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_34-build-2)

Deleting (at loader_3 b_2_34)

Adding (nodigging loader_3)
Adding (digged-block-b_2_34-build-2)
Increasing (trucks-available) (10) by 0.

- **1921.42:** Checking Happening... ...OK!
- 1921.42: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 8236.55

(current-time)(t) = t + 1914.86

 $(tonnage block-b_2_32)(t) = -50t + 4167.85$

Updating (crusher_supply pc3) (8236.55) by 7908.05 for continuous update.

Updating (current-time) (1914.86) by 1921.42 for continuous update.

Updating (tonnage block-b_2_32) (4167.85) by 3839.35 for continuous update.

- 1921.42: Checking Happening... ...OK!
 Adding (at loader_3 locloader_2)
- **1921.43:** Checking Happening... ...OK!
- 1921.43: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 7908.05

(current-time)(t) = t + 1921.42

(tonnage block-b_2_32)(t) = -50t + 3839.35

Updating (crusher_supply pc3) (7908.05) by 7908 for continuous update.

Updating (current-time) (1921.42) by 1921.43 for continuous update.

Updating (tonnage block-b_2_32) (3839.35) by 3839.3 for continuous update.

- **1921.43:** Checking Happening... ...OK! Deleting (at loader_3 locloader_2)
- 1927.68: Checking Happening... ...OK!
- **1927.68:** Checking Happening... ... OK!

(crusher_supply pc3)(t) = -50t + 7908

(current-time)(t) = t + 1921.43

 $(tonnage block-b_2_32)(t) = -50t + 3839.3$

Updating (crusher_supply pc3) (7908) by 7595.5 for continuous update.

Updating (current-time) (1921.43) by 1927.68 for continuous update.

Updating (tonnage block-b_2_32) (3839.3) by 3526.8 for continuous update.

- 1927.68: Checking Happening... ...OK! Adding (at loader_3 b_2_31)
- 1927.68: Checking Happening... ...OK!
- 1927.68: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 7595.5

(current-time)(t) = t + 1927.68

 $(tonnage block-b_2_32)(t) = -50t + 3526.8$

Updating (crusher_supply pc3) (7595.5) by 7595.45 for continuous update.

Updating (current-time) (1927.68) by 1927.68 for continuous update.

Updating (tonnage block-b_2_32) (3526.8) by 3526.75 for continuous update.

1927.68: Checking Happening... ...OK!

Deleting (nodigging loader_3)

Decreasing (trucks-available) (10) by 0.

- 1998.21: Checking Happening... ...OK!
- 1998.21: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 7595.45

(current-time)(t) = t + 1927.68

 $(tonnage block-b_2_31)(t) = -50t + 5000$

(tonnage block-b_2_32)(t) = -50t + 3526.75

Updating (crusher_supply pc3) (7595.45) by 7595.45 for continuous update.

Updating (current-time) (1927.68) by 1998.21 for continuous update.

Updating (tonnage block-b_2_31) (5000) by 1473.25 for continuous update.

Updating (tonnage block-b_2_32) (3526.75) by 0 for continuous update.

1998.21: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_32-build-2)

Deleting (at loader_2 b_2_32)

Adding (nodigging loader_2)

Adding (digged-block-b_2_32-build-2)

Increasing (trucks-available) (10) by 0.

2004.66: Checking Happening... ...OK!

2004.66: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 7595.45

(current-time)(t) = t + 1998.21

(tonnage block-b_2_31)(t) = -50t + 1473.25

Updating (crusher_supply pc3) (7595.45) by 7272.95 for con-

tinuous update.

Updating (current-time) (1998.21) by 2004.66 for continuous

update.

Updating (tonnage block-b_2_31) (1473.25) by 1150.75 for con-

tinuous update.

2004.66: Checking Happening... ...OK!

Adding (at loader_2 locloader_2)

2004.66: Checking Happening... ...OK!

2004.66: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 7272.95

(current-time)(t) = t + 2004.66

(tonnage block-b_2_31)(t) = -50t + 1150.75

Updating (crusher_supply pc3) (7272.95) by 7272.9 for contin-

uous update.

Updating (current-time) (2004.66) by 2004.66 for continuous

update.

Updating (tonnage block-b_2_31) (1150.75) by 1150.7 for con-

tinuous update.

2004.66: Checking Happening... ...OK!

Deleting (at loader_2 locloader_2)

- **2011.33:** Checking Happening... ...OK!
- **2011.33:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 7272.9

(current-time)(t) = t + 2004.66

(tonnage block-b_2_31)(t) = -50t + 1150.7

Updating (crusher_supply pc3) (7272.9) by 6939.4 for continuous update.

Updating (current-time) (2004.66) by 2011.33 for continuous update.

Updating (tonnage block-b_2_31) (1150.7) by 817.2 for continuous update.

- **2011.33:** Checking Happening... ...OK! Adding (at loader_2 b_2_19)
- 2011.33: Checking Happening... ...OK!
- **2011.33:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 6939.4

(current-time)(t) = t + 2011.33

 $(tonnage block-b_2_31)(t) = -50t + 817.2$

Updating (crusher_supply pc3) (6939.4) by 6939.35 for continuous update.

Updating (current-time) (2011.33) by 2011.33 for continuous update.

Updating (tonnage block-b_2_31) (817.2) by 817.15 for continuous update.

- **2011.33:** Checking Happening... ...OK! Deleting (at loader_2 b_2_19)
- 2018.78: Checking Happening... ...OK!
- 2018.78: Checking Happening... ...OK!

 $(crusher_supply pc3)(t) = -50t + 6939.35$

(current-time)(t) = t + 2011.33

(tonnage block-b_2_31)(t) = -50t + 817.15

Updating (crusher_supply pc3) (6939.35) by 6566.85 for continuous update.

Updating (current-time) (2011.33) by 2018.78 for continuous update.

Updating (tonnage block-b_2_31) (817.15) by 444.65 for continuous update.

- 2018.78: Checking Happening... ...OK! Adding (at loader_2 b_2_26)
- 2018.79: Checking Happening... ...OK!
- 2018.79: Checking Happening... ... OK!

(crusher_supply pc3)(t) = -50t + 6566.85

(current-time)(t) = t + 2018.78

 $(tonnage block-b_2_31)(t) = -50t + 444.65$

Updating (crusher_supply pc3) (6566.85) by 6566.8 for continuous update.

Updating (current-time) (2018.78) by 2018.79 for continuous update.

Updating (tonnage block-b_2_31) (444.65) by 444.6 for continuous update.

- **2018.79:** Checking Happening... ...OK! Deleting (at loader_2 b_2_26)
- 2026.24: Checking Happening... ...OK!
- 2026.24: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 6566.8

(current-time)(t) = t + 2018.79

 $(tonnage block-b_2_31)(t) = -50t + 444.6$

Updating (crusher_supply pc3) (6566.8) by 6194.3 for continuous update.

Updating (current-time) (2018.79) by 2026.24 for continuous update

Updating (tonnage block-b_2_31) (444.6) by 72.1 for continuous update.

- 2026.24: Checking Happening... ...OK! Adding (at loader_2 b_2_19)
- 2026.24: Checking Happening... ...OK!

2026.24: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 6194.3

(current-time)(t) = t + 2026.24

 $(tonnage block-b_2_31)(t) = -50t + 72.1$

Updating (crusher_supply pc3) (6194.3) by 6194.25 for continuous update.

Updating (current-time) (2026.24) by 2026.24 for continuous update.

Updating (tonnage block-b_2_31) (72.1) by 72.05 for continuous update.

2026.24: Checking Happening... ...OK!

Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

2027.68: Checking Happening... ...OK!

2027.68: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 6194.25

(current-time)(t) = t + 2026.24

 $(tonnage block-b_2_19)(t) = -50t + 49263$

(tonnage block-b_2_31)(t) = -50t + 72.05

Updating (crusher_supply pc3) (6194.25) by 6194.25 for continuous update.

Updating (current-time) (2026.24) by 2027.68 for continuous update.

Updating (tonnage block-b_2_19) (49263) by 49191 for continuous update.

Updating (tonnage block-b_2_31) (72.05) by 0 for continuous update.

2027.68: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_31-build-2)

Deleting (at loader_3 b_2_31)

Adding (nodigging loader_3)

Adding (digged-block-b_2_31-build-2)

Increasing (trucks-available) (10) by 0.

2028.86: Checking Happening... ...OK!

2028.86: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 6194.25

(current-time)(t) = t + 2027.68

 $(tonnage block-b_2_19)(t) = -50t + 49191$

Updating (crusher_supply pc3) (6194.25) by 6135.25 for continuous update.

Updating (current-time) (2027.68) by 2028.86 for continuous update.

Updating (tonnage block-b_2_19) (49191) by 49132 for continuous update.

2028.86: Checking Happening... ...OK!

Adding (at loader_3 b_2_30)

2028.86: Checking Happening... ...OK!

2028.86: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 6135.25

(current-time)(t) = t + 2028.86

 $(tonnage block-b_2_19)(t) = -50t + 49132$

Updating (crusher_supply pc3) (6135.25) by 6135.2 for continuous update.

Updating (current-time) (2028.86) by 2028.86 for continuous update.

Updating (tonnage block-b_2_19) (49132) by 49131.9 for continuous update.

2028.86: Checking Happening... ...OK!

Deleting (nodigging loader_3)

Decreasing (trucks-available) (10) by 0.

2128.86: Checking Happening... ...OK!

2128.86: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 6135.2

(current-time)(t) = t + 2028.86

 $(tonnage block-b_2_19)(t) = -50t + 49131.9$

(tonnage block-b_2_30)(t) = -50t + 5000

Updating (crusher_supply pc3) (6135.2) by 6135.2 for continuous update.

Updating (current-time) (2028.86) by 2128.86 for continuous update.

Updating (tonnage block-b_2_19) (49131.9) by 44131.9 for continuous update.

Updating (tonnage block-b_2_30) (5000) by -1.13687e-11 for continuous update.

2128.86: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_30-build-2)

Deleting (at loader_3 b_2_30)

Adding (nodigging loader_3)

 $Adding (digged-block-b_2_30-build-2)$

Increasing (trucks-available) (10) by 0.

2134.88: Checking Happening... ...OK!

2134.88: Checking Happening... ...OK!

 $(crusher_supply pc3)(t) = -50t + 6135.2$

(current-time)(t) = t + 2128.86

 $(tonnage block-b_2_19)(t) = -50t + 44131.9$

Updating (crusher_supply pc3) (6135.2) by 5834.2 for continuous update.

Updating (current-time) (2128.86) by 2134.88 for continuous update.

Updating (tonnage block-b_2_19) (44131.9) by 43830.9 for continuous update.

2134.88: Checking Happening... ...OK!

Adding (at loader_3 locloader_2)

2134.88: Checking Happening... ...OK!

2134.88: Checking Happening... ...OK!

 $(crusher_supply pc3)(t) = -50t + 5834.2$

(current-time)(t) = t + 2134.88

(tonnage block-b_2_19)(t) = -50t + 43830.9

Updating (crusher_supply pc3) (5834.2) by 5834.15 for continuous update.

Updating (current-time) (2134.88) by 2134.88 for continuous update.

Updating (tonnage block- $\mathbf{b}_{-}\mathbf{2}_{-}\mathbf{19}$) (43830.9) by 43830.9 for continuous update.

2134.88: Checking Happening... ...OK!

Deleting (at loader_3 locloader_2)

- **2141.46:** Checking Happening... ...OK!
- **2141.46:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 5834.15

(current-time)(t) = t + 2134.88

(tonnage block-b_2_19)(t) = -50t + 43830.9

Updating (crusher_supply pc3) (5834.15) by 5505.15 for continuous update.

Updating (current-time) (2134.88) by 2141.46 for continuous update.

Updating (tonnage block-b_2_19) (43830.9) by 43501.9 for continuous update.

- 2141.46: Checking Happening... ...OK! Adding (at loader_3 b_2_18)
- 2141.46: Checking Happening... ...OK!
- 2141.46: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 5505.15

(current-time)(t) = t + 2141.46

 $(tonnage block-b_2_19)(t) = -50t + 43501.9$

Updating (crusher_supply pc3) (5505.15) by 5505.1 for continuous update.

Updating (current-time) (2141.46) by 2141.46 for continuous update.

Updating (tonnage block-b_2_19) (43501.9) by 43501.8 for continuous update.

2141.46: Checking Happening... ...OK!

Deleting (nodigging loader_3)

Decreasing (trucks-available) (10) by 0.

- 2941.34: Checking Happening... ...OK!
- **2941.34:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = 5505.1

(current-time)(t) = t + 2141.46

 $(tonnage block-b_2_18)(t) = -50t + 39994$

 $(tonnage block-b_2_19)(t) = -50t + 43501.8$

Updating (crusher_supply pc3) (5505.1) by 5505.1 for continuous update.

Updating (current-time) (2141.46) by 2941.34 for continuous update.

Updating (tonnage block-b_2_18) (39994) by -5.45697e-12 for continuous update.

Updating (tonnage block-b_2_19) (43501.8) by 3507.8 for continuous update.

2941.34: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_18-build-1)

Deleting (at loader_3 b_2_18)

Adding (nodigging loader_3)

Adding (digged-block-b_2_18-build-1)

Increasing (trucks-available) (10) by 0.

- **2952.96:** Checking Happening... ...OK!
- 2952.96: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 5505.1

(current-time)(t) = t + 2941.34

(tonnage block-b_2_19)(t) = -50t + 3507.8

Updating (crusher_supply pc3) (5505.1) by 4924.1 for continuous update.

Updating (current-time) (2941.34) by 2952.96 for continuous update.

Updating (tonnage block-b_2_19) (3507.8) by 2926.8 for continuous update.

2952.96: Checking Happening... ...OK!

Adding (at loader_3 b_2_29)

- 2952.96: Checking Happening... ...OK!
- 2952.96: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 4924.1

(current-time)(t) = t + 2952.96

 $(tonnage block-b_2_19)(t) = -50t + 2926.8$

Updating (crusher_supply pc3) (4924.1) by 4924.05 for continuous update.

Updating (current-time) (2952.96) by 2952.96 for continuous update.

Updating (tonnage block-b_2_19) (2926.8) by 2926.75 for continuous update.

2952.96: Checking Happening... ...OK!

Deleting (nodigging loader_3)

Decreasing (trucks-available) (10) by 0.

- **3011.5:** Checking Happening... ...OK!
- **3011.5:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = 4924.05

(current-time)(t) = t + 2952.96

 $(tonnage block-b_2_19)(t) = -50t + 2926.75$

(tonnage block-b_2_29)(t) = -50t + 5000

Updating (crusher_supply pc3) (4924.05) by 4924.05 for continuous update.

Updating (current-time) (2952.96) by 3011.5 for continuous update.

Updating (tonnage block-b_2_19) (2926.75) by 7.27596e-12 for continuous update.

Updating (tonnage block-b_2_29) (5000) by 2073.25 for continuous update.

3011.5: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_19-build-0)

Deleting (at loader_2 b_2_19)

Adding (nodigging loader_2)

Adding (digged-block-b_2_19-build-0)

Increasing (trucks-available) (10) by 0.

- **3018.95:** Checking Happening... ...OK!
- **3018.95:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 4924.05

(current-time)(t) = t + 3011.5

(tonnage block-b_2_29)(t) = -50t + 2073.25

Updating (crusher_supply pc3) (4924.05) by 4551.55 for continuous update.

Updating (current-time) (3011.5) by 3018.95 for continuous update.

Updating (tonnage block-b_2_29) (2073.25) by 1700.75 for continuous update.

3018.95: Checking Happening... ...OK! Adding (at loader_2 b_2_26)

3018.95: Checking Happening... ...OK!

3018.95: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 4551.55

(current-time)(t) = t + 3018.95

(tonnage block-b_2_29)(t) = -50t + 1700.75

Updating (crusher_supply pc3) (4551.55) by 4551.5 for continuous update.

Updating (current-time) (3018.95) by 3018.95 for continuous update.

Updating (tonnage block-b_2_29) (1700.75) by 1700.7 for continuous update.

- **3018.95:** Checking Happening... ...OK! Deleting (at loader_2 b_2_26)
- **3025.22:** Checking Happening... ...OK!
- **3025.22:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 4551.5

(current-time)(t) = t + 3018.95

(tonnage block-b_2_29)(t) = -50t + 1700.7

Updating (crusher_supply pc3) (4551.5) by 4238 for continuous update.

Updating (current-time) (3018.95) by 3025.22 for continuous update.

Updating (tonnage block-b_2_29) (1700.7) by 1387.2 for continuous update.

- 3025.22: Checking Happening... ...OK! Adding (at loader_2 b_2_21)
- **3025.22:** Checking Happening... ...OK!
- **3025.22:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 4238

(current-time)(t) = t + 3025.22

(tonnage block-b_2_29)(t) = -50t + 1387.2

Updating (crusher_supply pc3) (4238) by 4237.95 for continuous update.

Updating (current-time) (3025.22) by 3025.22 for continuous update.

Updating (tonnage block-b_2_29) (1387.2) by 1387.15 for continuous update.

3025.22: Checking Happening... ...OK!

Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

- **3025.22:** Checking Happening... ...OK!
- **3025.22:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = 4237.95

(current-time)(t) = t + 3025.22

(tonnage block-b_2_21)(t) = -50t + 49778

(tonnage block-b_2_29)(t) = -50t + 1387.15

Updating (crusher_supply pc3) (4237.95) by 4237.95 for continuous update.

Updating (current-time) (3025.22) by 3025.22 for continuous update.

Updating (tonnage block-b_2_21) (49778) by 49777.9 for continuous update.

Updating (tonnage block-b_2_29) (1387.15) by 1387.1 for continuous update.

3025.22: Checking Happening... ...OK!

Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

- **3036.44:** Checking Happening... ...OK!
- **3036.44:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = 50t + 4237.95

(current-time)(t) = t + 3025.22

(tonnage block-b_2_21)(t) = -100t + 49777.9

 $(tonnage block-b_2_2)(t) = -50t + 1387.1$

Updating (crusher_supply pc3) (4237.95) by 4798.95 for continuous update.

Updating (current-time) (3025.22) by 3036.44 for continuous update.

Updating (tonnage block-b_2_21) (49777.9) by 48656 for continuous update.

Updating (tonnage block-b_2_29) (1387.1) by 826.1 for continuous update.

3036.44: Checking Happening... ...OK!

Deleting (not-partially-digged-block-b_2_21-build-0)

Deleting (at loader_2 b_2_21)

Adding (nodigging loader_2)

Adding (partially-digged-block-b_2_21-build-0)

Increasing (trucks-available) (10) by 0.

3042.71: Checking Happening... ...OK!

3042.71: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 4798.95

(current-time)(t) = t + 3036.44

 $(tonnage block-b_2_21)(t) = -50t + 48656$

 $(tonnage block-b_2_2)(t) = -50t + 826.1$

Updating (crusher_supply pc3) (4798.95) by 4798.95 for continuous update.

Updating (current-time) (3036.44) by 3042.71 for continuous update.

Updating (tonnage block-b_2_21) (48656) by 48342.5 for continuous update.

Updating (tonnage block-b_2_29) (826.1) by 512.6 for continuous update.

3042.71: Checking Happening... ...OK!

Adding (at loader_2 b_2_26)

3042.71: Checking Happening... ...OK!

3042.71: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 4798.95

(current-time)(t) = t + 3042.71

(tonnage block-b_2_21)(t) = -50t + 48342.5

 $(tonnage block-b_2_2)(t) = -50t + 512.6$

Updating (crusher_supply pc3) (4798.95) by 4798.95 for continuous update.

Updating (current-time) (3042.71) by 3042.71 for continuous update.

Updating (tonnage block-b_2_21) (48342.5) by 48342.4 for continuous update.

Updating (tonnage block-b_2_29) (512.6) by 512.55 for continuous update.

3042.71: Checking Happening... ...OK!

Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

3052.96: Checking Happening... ...OK!

3052.96: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 50t + 4798.95

(current-time)(t) = t + 3042.71

(tonnage block-b_2_21)(t) = -50t + 48342.4

 $(tonnage block-b_2_26)(t) = -50t + 8000$

(tonnage block-b_2_29)(t) = -50t + 512.55

Updating (crusher_supply pc3) (4798.95) by 5311.5 for continuous update.

Updating (current-time) (3042.71) by 3052.96 for continuous update.

Updating (tonnage block-b_2_21) (48342.4) by 47829.9 for continuous update.

Updating (tonnage block-b_2_26) (8000) by 7487.45 for continuous update.

Updating (tonnage block-b_2_29) (512.55) by 0 for continuous update.

3052.96: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_29-build-2)

Deleting (at loader_3 b_2_29)

Adding (nodigging loader_3)

Adding (digged-block-b_2_29-build-2)

Increasing (trucks-available) (10) by 0.

3058.79: Checking Happening... ...OK!

3058.79: Checking Happening... ...OK!

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(crusher_supply pc3)(t) = 5311.5
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(current-time)(t) = t + 3052.96

(tonnage block-b_2_21)(t) = -50t + 47829.9

(tonnage block-b_2_26)(t) = -50t + 7487.45

Updating (crusher_supply pc3) (5311.5) by 5311.5 for continuous update.

Updating (current-time) (3052.96) by 3058.79 for continuous update.

Updating (tonnage block-b_2_21) (47829.9) by 47538.4 for continuous update.

Updating (tonnage block-b_2_26) (7487.45) by 7195.95 for continuous update.

3058.79: Checking Happening... ... OK!

Adding (at loader_3 locloader_2)

3058.79: Checking Happening... ...OK!

3058.79: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 5311.5

(current-time)(t) = t + 3058.79

(tonnage block-b_2_21)(t) = -50t + 47538.4

(tonnage block-b_2_26)(t) = -50t + 7195.95

Updating (crusher_supply pc3) (5311.5) by 5311.5 for continuous update.

Updating (current-time) (3058.79) by 3058.79 for continuous update.

Updating (tonnage block-b_2_21) (47538.4) by 47538.3 for continuous update.

Updating (tonnage block-b_2_26) (7195.95) by 7195.9 for continuous update.

3058.79: Checking Happening... ...OK!

Deleting (at loader_3 locloader_2)

3066.16: Checking Happening... ...OK!

3066.16: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 5311.5

(current-time)(t) = t + 3058.79

(tonnage block-b_2_21)(t) = -50t + 47538.3

(tonnage block-b_2_26)(t) = -50t + 7195.9

Updating (crusher_supply pc3) (5311.5) by 5311.5 for continuous update.

Updating (current-time) (3058.79) by 3066.16 for continuous update.

Updating (tonnage block-b_2_21) (47538.3) by 47169.8 for continuous update.

Updating (tonnage block-b_2_26) (7195.9) by 6827.4 for continuous update.

- **3066.16:** Checking Happening... ...OK! Adding (at loader_3 b_2_25)
- **3066.16:** Checking Happening... ...OK!
- 3066.16: Checking Happening... ...OK! (crusher_supply pc3)(t) = 5311.5 (current-time)(t) = t + 3066.16 (tonnage block-b_2_21)(t) = -50t + 47169.8 (tonnage block-b_2_26)(t) = -50t + 6827.4

Updating (crusher_supply pc3) (5311.5) by 5311.5 for continuous update.

Updating (current-time) (3066.16) by 3066.16 for continuous update.

Updating (tonnage block-b_2_21) (47169.8) by 47169.8 for continuous update.

Updating (tonnage block-b_2_26) (6827.4) by 6827.35 for continuous update.

- 3066.16: Checking Happening... ...OK!

 Deleting (nodigging loader_3)

 Decreasing (trucks-available) (10) by 0.
- **3202.71:** Checking Happening... ...OK!
- 3202.71: Checking Happening... ...OK! (crusher_supply pc3)(t) = 50t + 5311.5 (current-time)(t) = t + 3066.16 (tonnage block-b_2_21)(t) = -50t + 47169.8 (tonnage block-b_2_25)(t) = -50t + 8000 (tonnage block-b_2_26)(t) = -50t + 6827.35 Updating (crusher_supply pc3) (5311.5) by 12138.8 for continuous update.

Updating (current-time) (3066.16) by 3202.71 for continuous update.

Updating (tonnage block-b_2_21) (47169.8) by 40342.4 for continuous update.

Updating (tonnage block-b_2_25) (8000) by 1172.65 for continuous update.

Updating (tonnage block-b_2_26) (6827.35) by 0 for continuous update.

3202.71: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_26-build-2)

Deleting (at loader_2 b_2_26)

Adding (nodigging loader_2)

Adding (digged-block-b_2_26-build-2)

Increasing (trucks-available) (10) by 0.

- **3204.49:** Checking Happening... ...OK!
- **3204.49:** Checking Happening... ...OK!

 $(crusher_supply pc3)(t) = 12138.8$

(current-time)(t) = t + 3202.71

(tonnage block-b_2_21)(t) = -50t + 40342.4

(tonnage block-b_2_25)(t) = -50t + 1172.65

Updating (crusher_supply pc3) (12138.8) by 12138.8 for continuous update.

Updating (current-time) (3202.71) by 3204.49 for continuous update.

Updating (tonnage block-b_2_21) (40342.4) by 40253.4 for continuous update.

Updating (tonnage block- b_2_25) (1172.65) by 1083.65 for continuous update.

3204.49: Checking Happening... ...OK!

Adding (at loader_2 b_2_24)

- **3204.49:** Checking Happening... ...OK!
- **3204.49:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = 12138.8

(current-time)(t) = t + 3204.49

(tonnage block-b_2_21)(t) = -50t + 40253.4

(tonnage block-b_2_25)(t) = -50t + 1083.65

Updating (crusher_supply pc3) (12138.8) by 12138.8 for continuous update.

Updating (current-time) (3204.49) by 3204.49 for continuous update.

Updating (tonnage block-b_2_21) (40253.4) by 40253.4 for continuous update.

Updating (tonnage block-b_2_25) (1083.65) by 1083.6 for continuous update.

3204.49: Checking Happening... ...OK!

Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

3226.16: Checking Happening... ...OK!

3226.16: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 50t + 12138.8

(current-time)(t) = t + 3204.49

(tonnage block-b_2_21)(t) = -50t + 40253.4

(tonnage block-b_2_24)(t) = -50t + 10000

(tonnage block-b_2_25)(t) = -50t + 1083.6

Updating (crusher_supply pc3) (12138.8) by 13222.4 for continuous update.

Updating (current-time) (3204.49) by 3226.16 for continuous update.

Updating (tonnage block-b_2_21) (40253.4) by 39169.8 for continuous update.

Updating (tonnage block-b_2_24) (10000) by 8916.4 for continuous update.

Updating (tonnage block-b_2_25) (1083.6) by 0 for continuous update.

3226.16: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_25-build-2)

Deleting (at loader_3 b_2_25)

Adding (nodigging loader_3)

Adding (digged-block-b_2_25-build-2)

Increasing (trucks-available) (10) by 0.

3228: Checking Happening... ...OK!

3228: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 13222.5

(current-time)(t) = t + 3226.16

(tonnage block-b_2_21)(t) = -50t + 39169.8

(tonnage block-b_2_24)(t) = -50t + 8916.4

Updating (crusher_supply pc3) (13222.4) by 13222.5 for continuous update.

Updating (current-time) (3226.16) by 3228 for continuous update.

Updating (tonnage block-b_2_21) (39169.8) by 39077.8 for continuous update.

Updating (tonnage block-b_2_24) (8916.4) by 8824.4 for continuous update.

3228: Checking Happening... ...OK! Adding (at loader_3 b_2_23)

3228: Checking Happening... ...OK!

3228: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 13222.5

(current-time)(t) = t + 3228

(tonnage block-b_2_21)(t) = -50t + 39077.8

 $(tonnage block-b_2_2_4)(t) = -50t + 8824.4$

Updating (crusher_supply pc3) (13222.5) by 13222.5 for continuous update.

Updating (current-time) (3228) by 3228 for continuous update. Updating (tonnage block-b_2_21) (39077.8) by 39077.7 for continuous update.

Updating (tonnage block-b_2_24) (8824.4) by 8824.35 for continuous update.

3228: Checking Happening... ...OK!

Deleting (nodigging loader_3)

Decreasing (trucks-available) (10) by 0.

3388: Checking Happening... ...OK!

3388: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 50t + 13222.5

(current-time)(t) = t + 3228

(tonnage block-b_2_21)(t) = -50t + 39077.7

 $(tonnage block-b_2_2)(t) = -50t + 8000$

(tonnage block-b_2_24)(t) = -50t + 8824.35

Updating (crusher_supply pc3) (13222.5) by 21222.5 for continuous update.

Updating (current-time) (3228) by 3388 for continuous update. Updating (tonnage block-b_2_21) (39077.7) by 31077.7 for continuous update.

Updating (tonnage block-b_2_23) (8000) by 0 for continuous update.

Updating (tonnage block-b_2_24) (8824.35) by 824.35 for continuous update.

3388: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_23-build-2)

Deleting (at loader_3 b_2_23)

Adding (nodigging loader_3)
Adding (digged-block-b_2_23-build-2)

Increasing (trucks-available) (10) by 0.

3390.96: Checking Happening... ...OK!

3390.96: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 21222.5

(current-time)(t) = t + 3388

(tonnage block-b_2_21)(t) = -50t + 31077.7

(tonnage block-b_2_24)(t) = -50t + 824.35

Updating (crusher_supply pc3) (21222.5) by 21222.5 for continuous update.

Updating (current-time) (3388) by 3390.96 for continuous update.

Updating (tonnage block-b_2_21) (31077.7) by 30929.7 for continuous update.

Updating (tonnage block-b_2_24) (824.35) by 676.35 for continuous update.

3390.96: Checking Happening... ...OK! Adding (at loader_3 b_2_22)

3390.97: Checking Happening... ...OK!

3390.97: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 21222.5(current-time)(t) = t + 3390.96 (tonnage block-b_2_21)(t) = -50t + 30929.7

(tonnage block-b_2_24)(t) = -50t + 676.35

Updating (crusher_supply pc3) (21222.5) by 21222.5 for continuous update.

Updating (current-time) (3390.96) by 3390.97 for continuous update.

Updating (tonnage block-b_2_21) (30929.7) by 30929.7 for continuous update.

Updating (tonnage block-b_2_24) (676.35) by 676.3 for continuous update.

3390.97: Checking Happening... ...OK!

Deleting (nodigging loader_3)

Decreasing (trucks-available) (10) by 0.

3404.49: Checking Happening... ...OK!

3404.49: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 50t + 21222.5

(current-time)(t) = t + 3390.97

 $(tonnage block-b_2_21)(t) = -50t + 30929.7$

(tonnage block-b_2_22)(t) = -50t + 8000

(tonnage block-b_2_24)(t) = -50t + 676.3

Updating (crusher_supply pc3) (21222.5) by 21898.7 for continuous update.

Updating (current-time) (3390.97) by 3404.49 for continuous update.

Updating (tonnage block-b_2_21) (30929.7) by 30253.4 for continuous update.

Updating (tonnage block-b_2_22) (8000) by 7323.7 for continuous update.

Updating (tonnage block-b_2_24) (676.3) by -1.81899e-12 for continuous update.

3404.49: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_24-build-2)

Deleting (at loader_2 b_2_24)

Adding (nodigging loader_2)

Adding (digged-block-b_2_24-build-2)

Increasing (trucks-available) (10) by 0.

3409.31: Checking Happening... ...OK!

3409.31: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 21898.7

(current-time)(t) = t + 3404.49

(tonnage block-b_2_21)(t) = -50t + 30253.4

(tonnage block-b_2_22)(t) = -50t + 7323.7

Updating (crusher_supply pc3) (21898.7) by 21898.7 for continuous update.

Updating (current-time) (3404.49) by 3409.31 for continuous update.

Updating (tonnage block-b_2_21) (30253.4) by 30012.4 for continuous update.

Updating (tonnage block-b_2_22) (7323.7) by 7082.7 for continuous update.

- **3409.31:** Checking Happening... ...OK! Adding (at loader_2 b_2_20)
- **3409.31:** Checking Happening... ...OK!
- **3409.31:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = 21898.7

(current-time)(t) = t + 3409.31

(tonnage block-b_2_21)(t) = -50t + 30012.4

(tonnage block-b_2_22)(t) = -50t + 7082.7

Updating (crusher_supply pc3) (21898.7) by 21898.7 for continuous update.

Updating (current-time) (3409.31) by 3409.31 for continuous update.

Updating (tonnage block-b_2_21) (30012.4) by 30012.3 for continuous update.

Updating (tonnage block-b_2_22) (7082.7) by 7082.65 for continuous update.

3409.31: Checking Happening... ...OK!

Deleting (nodigging loader_2)

Decreasing (trucks-available) (10) by 0.

- **3550.97:** Checking Happening... ...OK!
- **3550.97:** Checking Happening... ...OK!

(crusher_supply pc3)(t) = 50t + 21898.7

(current-time)(t) = t + 3409.31

 $(tonnage block-b_2_20)(t) = -50t + 47996$

(tonnage block-b_2_21)(t) = -50t + 30012.3

(tonnage block-b_2_22)(t) = -50t + 7082.65

Updating (crusher_supply pc3) (21898.7) by 28981.4 for continuous update.

Updating (current-time) (3409.31) by 3550.97 for continuous update.

Updating (tonnage block-b_2_20) (47996) by 40913.3 for continuous update.

Updating (tonnage block-b $_2$ 21) (30012.3) by 22929.7 for continuous update.

Updating (tonnage block-b_2_22) (7082.65) by 0 for continuous update.

3550.97: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_22-build-2)

Adding (nodigging loader_3)

Adding (digged-block-b_2_22-build-2)

Increasing (trucks-available) (10) by 0.

3864.7: Checking Happening... ...OK!

3864.7: Checking Happening... ...OK!

(crusher_supply pc3)(t) = 28981.4

(current-time)(t) = t + 3550.97

 $(tonnage block-b_2_20)(t) = -50t + 40913.3$

(tonnage block-b_2_21)(t) = -50t + 22929.7

Updating (crusher_supply pc3) (28981.4) by 28981.4 for continuous update.

Updating (current-time) (3550.97) by 3864.7 for continuous update.

Updating (tonnage block-b_2_20) (40913.3) by 25226.7 for continuous update.

Updating (tonnage block-b_2_21) (22929.7) by 7242.95 for continuous update.

3864.7: Checking Happening... ...OK!

Deleting (not-partially-digged-block-b_2_21-build-1)

Adding (nodigging loader_2)

Adding (partially-digged-block-b_2_21-build-1)

Increasing (trucks-available) (10) by 0.

4369.23: Checking Happening... ...OK!

4369.23: Checking Happening... ...OK!

(crusher_supply pc3)(t) = -50t + 28981.4

(current-time)(t) = t + 3864.7

(tonnage block-b_2_20)(t) = -50t + 25226.7

Updating (crusher_supply pc3) (28981.4) by 3754.75 for continuous update.

Updating (current-time) (3864.7) by 4369.23 for continuous update

Updating (tonnage block-b_2_20) (25226.7) by -1.81899e-12 for continuous update.

4369.23: Checking Happening... ...OK!

Deleting (not-digged-block-b_2_20-build-0)

Adding (nodigging loader_2)

Adding (digged-block-b_2_20-build-0)

Increasing (trucks-available) (10) by 0.

Plan executed successfully - checking goal

2.4 Primitive Numerical Expression Graphs

2.5 Gantt Chart

Gantt Chart Key

Row 1

No	Time	Action
1	0	(move loader_2 locloader_2 b_2_45) [5.35]
4	5.351	(dig-block-b_2_45-build-1 loader_2) [407.26]
12	641.732	(move loader_2 b_2_42 locloader_2) [3.42]
13	645.153	(move loader_2 locloader_2 b_2_41) [3.94]
14	649.094	(dig-block-b_2_41-build-1 loader_2) [159.98]
21	924.105	(move loader_3 b_2_39 locloader_2) [3.86]
22	927.966	(move loader_3 locloader_2 b_2_37) [3.58]
23	931.547	(p-dig-block-b_2_37-build-1 loader_3) [166.123]
26	1137.94	(move loader_2 b_2_40 locloader_2) [3.72]

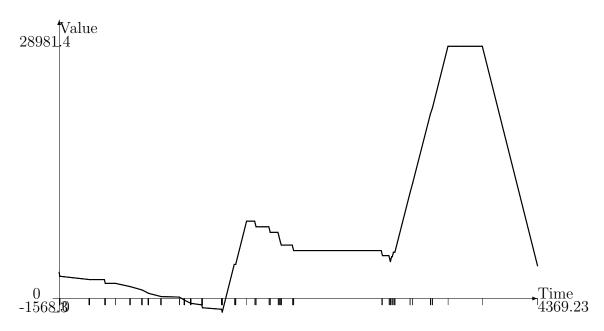
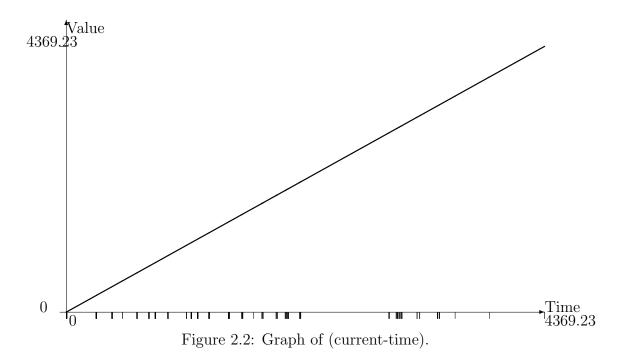


Figure 2.1: Graph of (crusher_supply pc3).



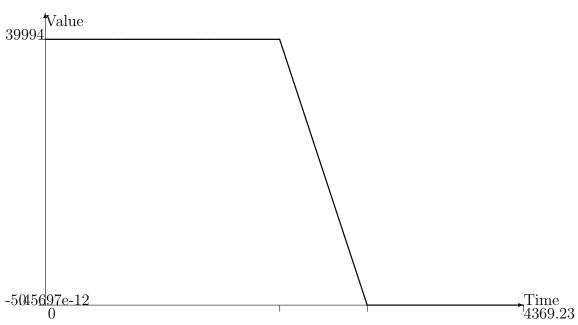


Figure 2.3: Graph of (tonnage block-b_2_18).

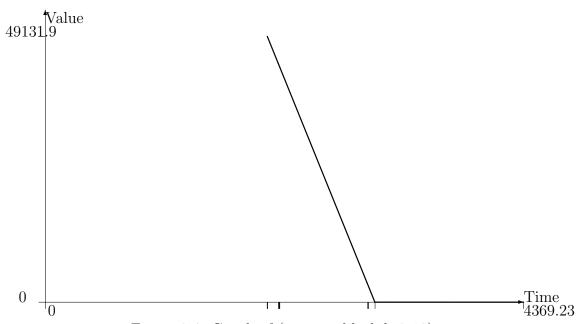


Figure 2.4: Graph of (tonnage block-b_2_19).

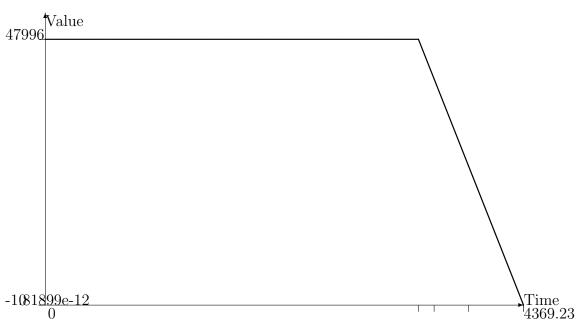


Figure 2.5: Graph of (tonnage block-b_2_20).

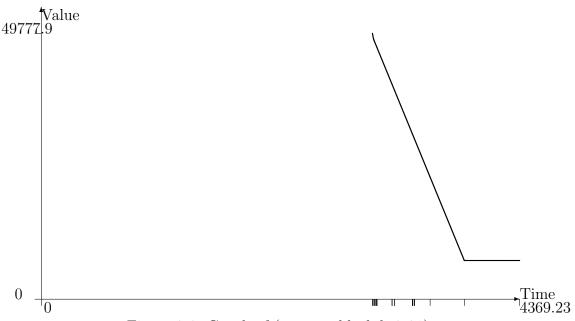


Figure 2.6: Graph of (tonnage block-b_2_21).

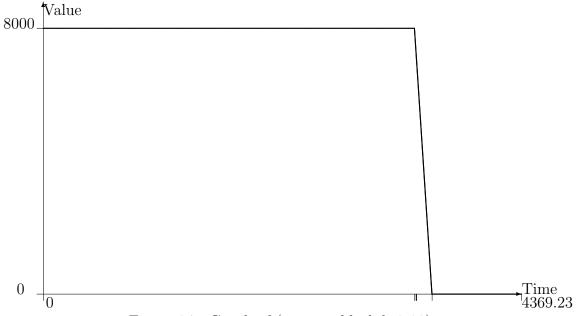


Figure 2.7: Graph of (tonnage block-b_2_22).

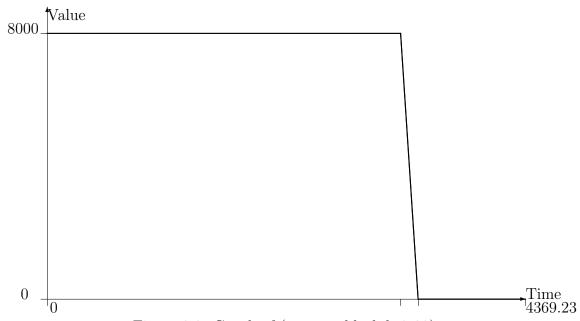


Figure 2.8: Graph of (tonnage block-b_2_23).

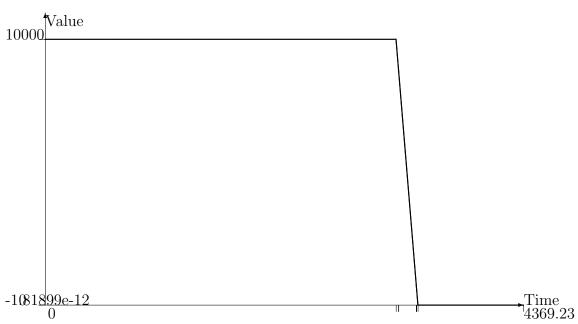


Figure 2.9: Graph of (tonnage block-b_2_24).

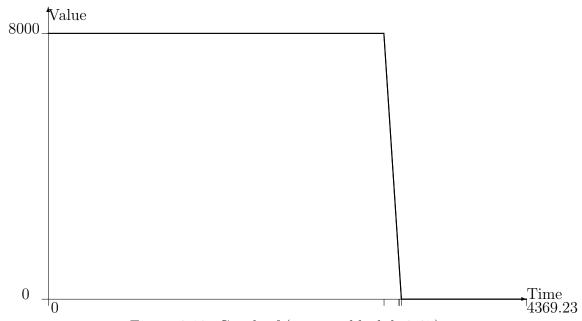


Figure 2.10: Graph of (tonnage block-b_2_25).

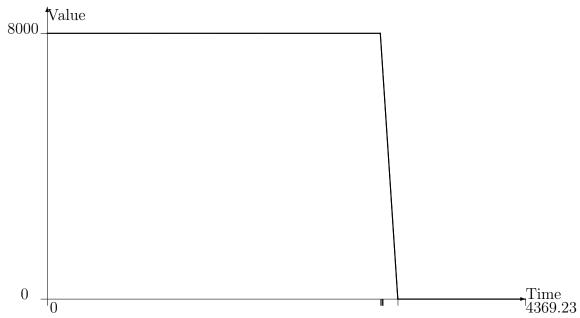


Figure 2.11: Graph of (tonnage block-b_2_26).

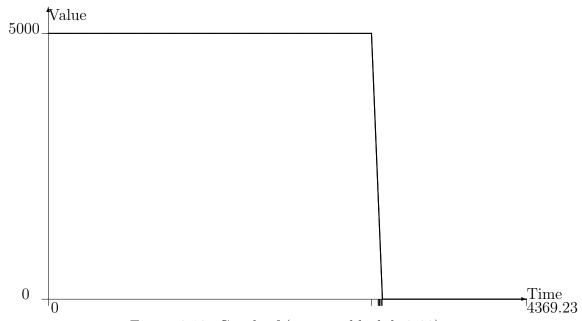


Figure 2.12: Graph of (tonnage block-b_2_29).

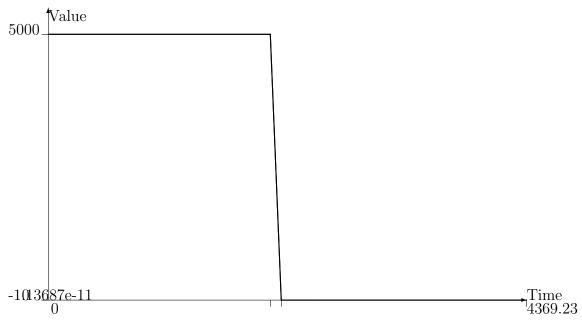


Figure 2.13: Graph of (tonnage block-b_2_30).

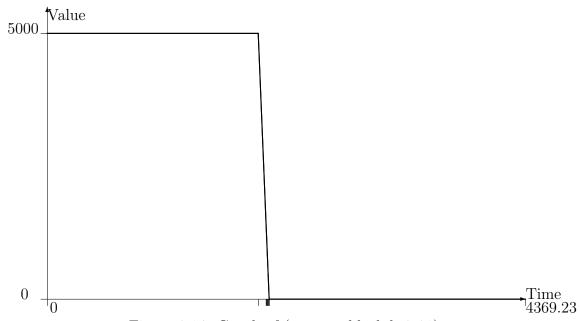


Figure 2.14: Graph of (tonnage block-b_2_31).

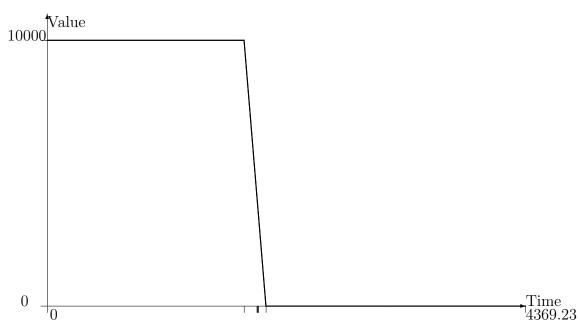


Figure 2.15: Graph of (tonnage block-b_2_32).

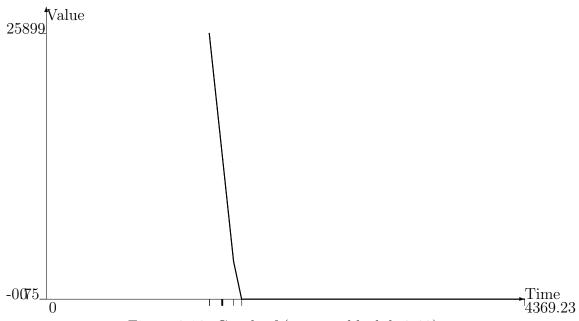


Figure 2.16: Graph of (tonnage block-b_2_33).

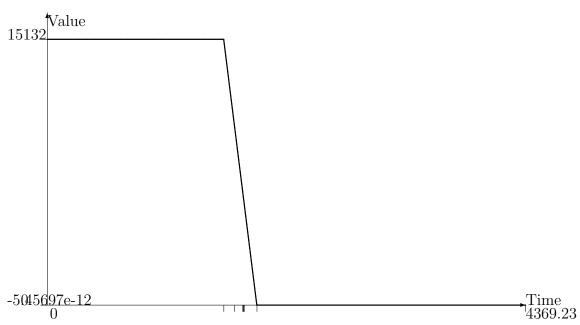


Figure 2.17: Graph of (tonnage block-b_2_34).

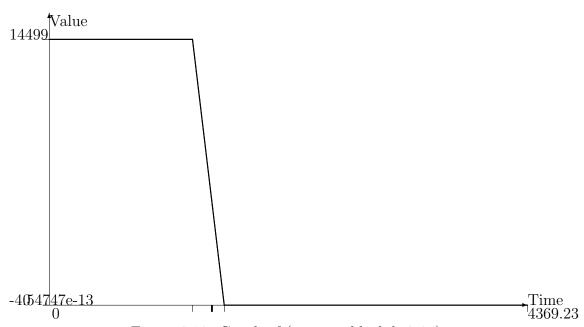


Figure 2.18: Graph of (tonnage block-b_2_35).

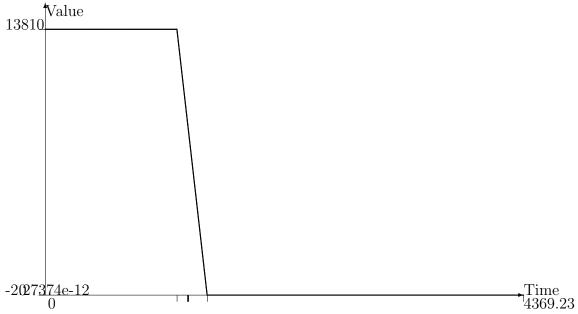


Figure 2.19: Graph of (tonnage block-b_2_36).

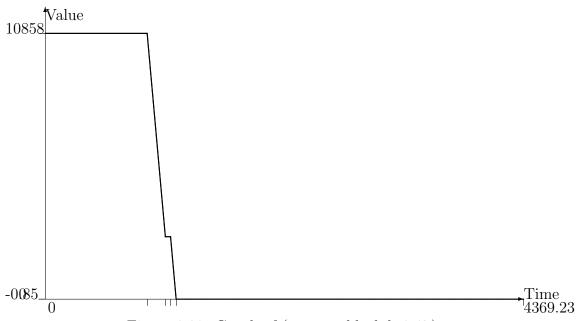


Figure 2.20: Graph of (tonnage block-b_2_37).

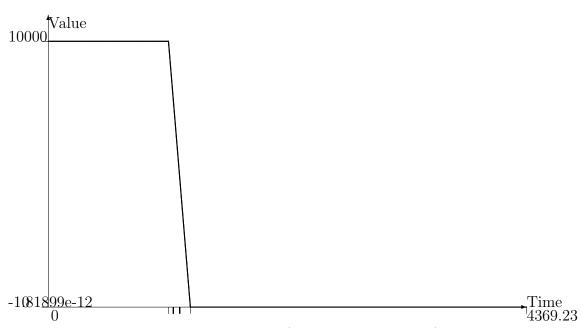


Figure 2.21: Graph of (tonnage block-b_2_38).

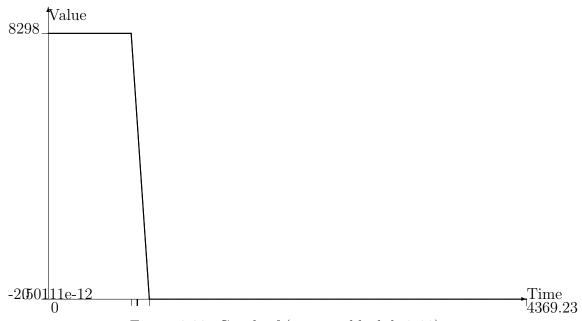


Figure 2.22: Graph of (tonnage block-b_2_39).

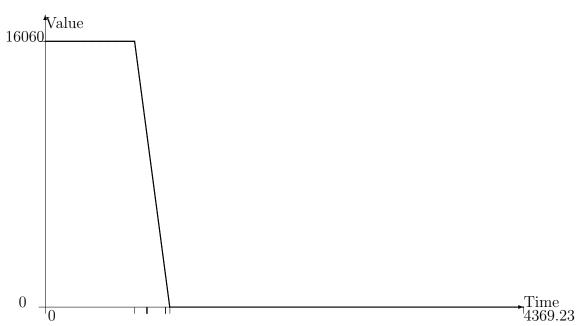


Figure 2.23: Graph of (tonnage block-b_2_40).

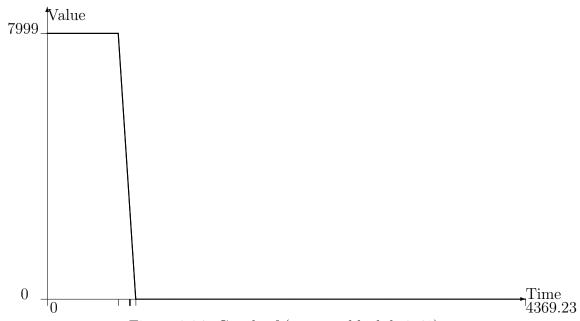


Figure 2.24: Graph of (tonnage block-b_2_41).



Figure 2.25: Graph of (tonnage block-b_2_42).



Figure 2.26: Graph of (tonnage block-b_2_43).

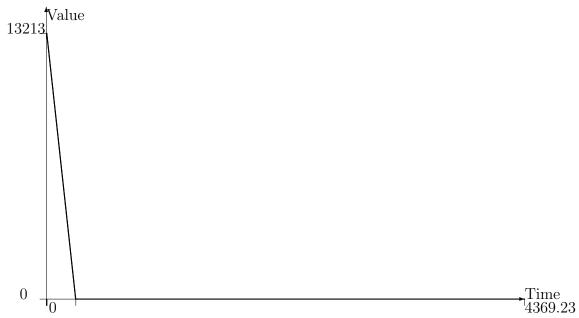


Figure 2.27: Graph of (tonnage block-b_2_44).

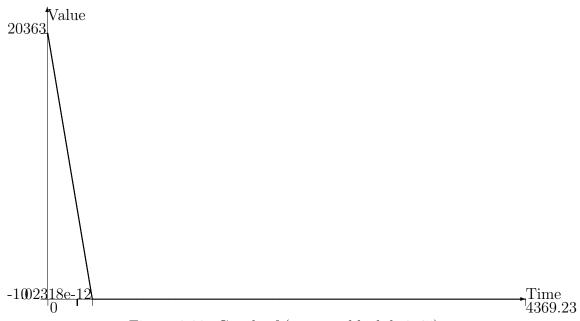


Figure 2.28: Graph of (tonnage block-b_2_45).

27	1141.66	(move loader_2 locloader_2 b_2_37) [3.58]
28	1145.24	(p-dig-block-b_2_37-build-0 loader_2) [51.054]
32	1298.86	(move loader_3 b_2_38 locloader_2) [3.56]
33	1302.42	(move loader_3 locloader_2 b_2_35) [6.62]
34	1309.04	(dig-block-b_2_35-build-2 loader_3) [289.98]
64	3036.44	(move loader_2 b_2_21 b_2_26) [6.27]
65	3042.71	(dig-block-b_2_26-build-2 loader_2) [160]
71	3226.16	(move loader_3 b_2_25 b_2_23) [1.84]
72	3228	(dig-block-b_2_23-build-2 loader_3) [160]
75	3404.49	(move loader_2 b_2_24 b_2_20) [4.82]
76	3409.31	(dig-block-b_2_20-build-0 loader_2) [959.92]

Row 2

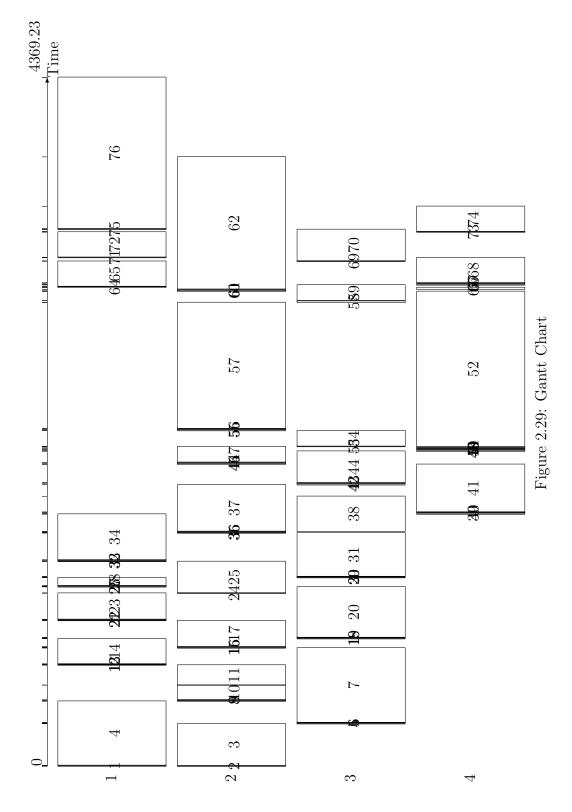
No	Time	Action
2	0	(move loader_3 locloader_3 b_2_44) [3.63]
3	3.631	(dig-block-b_2_44-build-1 loader_3) [265.98]
8	412.611	(move loader_2 b_2_45 locloader_2) [5.35]
9	417.962	(move loader_2 locloader_2 b_2_42) [3.42]
10	421.383	(p-dig-block-b_2_42-build-1 loader_2) [93.123]
11	514.509	(p-dig-block-b_2_42-build-0 loader_2) [127.223]
15	750.303	(move loader_3 b_2_43 locloader_2) [3.98]
16	754.284	(move loader_3 locloader_2 b_2_39) [3.86]
17	758.145	(dig-block-b_2_39-build-2 loader_3) [165.96]
24	1097.67	(move loader_3 b_2_37 b_2_38) [1.19]
25	1098.86	(dig-block-b_2_38-build-1 loader_3) [200]
35	1479.53	(move loader_2 b_2_36 locloader_2) [3.46]
36	1482.99	(move loader_2 locloader_2 b_2_33) [6.51]
37	1489.51	(p-dig-block-b_2_33-build-1 loader_2) [295.744]
45	1914.86	(move loader_3 b_2_34 locloader_2) [6.57]
46	1921.43	(move loader_3 locloader_2 b_2_31) [6.25]
47	1927.68	(dig-block-b_2_31-build-2 loader_3) [100]
55	2128.86	(move loader_3 b_2_30 locloader_2) [6.02]
56	2134.88	(move loader_3 locloader_2 b_2_18) [6.58]
57	2141.46	(dig-block-b_2_18-build-1 loader_3) [799.88]
60	3011.5	(move loader_2 b_2_19 b_2_26) [7.45]
61	3018.95	(move loader_2 b_2_26 b_2_21) [6.27]
62	3025.22	(p-dig-block-b_2_21-build-1 loader_2) [839.481]

Row 3

\mathbf{No}	Time	Action
5	269.611	(move loader_3 b_2_44 locloader_2) [3.63]
6	273.242	(move loader_3 locloader_2 b_2_43) [3.98]
7	277.223	(dig-block-b_2_43-build-0 loader_3) [473.08]
18	809.074	(move loader_2 b_2_41 locloader_2) [3.94]
19	813.015	(move loader_2 locloader_2 b_2_40) [3.72]
20	816.736	(dig-block-b_2_40-build-1 loader_2) [321.2]
29	1196.29	(move loader_2 b_2_37 locloader_2) [3.58]
30	1199.87	(move loader_2 locloader_2 b_2_36) [3.46]
31	1203.33	(dig-block-b_2_36-build-0 loader_2) [276.2]
38	1489.51	(p-dig-block-b_2_33-build-0 loader_2) [222.251]
42	1785.25	(move loader_2 b_2_33 locloader_2) [6.51]
43	1791.76	(move loader_2 locloader_2 b_2_32) [6.45]
44	1798.21	(dig-block-b_2_32-build-2 loader_2) [200]
53	2027.68	(move loader_3 b_2_31 b_2_30) [1.18]
54	2028.86	(dig-block-b_2_30-build-2 loader_3) [100]
58	2941.34	(move loader_3 b_2_18 b_2_29) [11.62]
59	2952.96	(dig-block-b_2_29-build-2 loader_3) [100]
69	3202.71	(move loader_2 b_2_26 b_2_24) [1.78]
70	3204.49	(dig-block-b_2_24-build-2 loader_2) [200]

Row 4

No	\mathbf{Time}	Action
39	1599.02	(move loader_3 b_2_35 locloader_2) [6.62]
40	1605.64	(move loader_3 locloader_2 b_2_34) [6.57]
41	1612.21	(dig-block-b_2_34-build-2 loader_3) [302.64]
48	1998.21	(move loader_2 b_2_32 locloader_2) [6.45]
49	2004.66	(move loader_2 locloader_2 b_2_19) [6.67]
50	2011.33	(move loader_2 b_2_19 b_2_26) [7.45]
51	2018.79	(move loader_2 b_2_26 b_2_19) [7.45]
52	2026.24	(dig-block-b_2_19-build-0 loader_2) [985.26]
63	3025.22	(p-dig-block-b_2_21-build-0 loader_2) [11.22]
66	3052.96	(move loader_3 b_2_29 locloader_2) [5.83]
67	3058.79	(move loader_3 locloader_2 b_2_25) [7.37]
68	3066.16	(dig-block-b_2_25-build-2 loader_3) [160]
73	3388	(move loader_3 b_2_23 b_2_22) [2.96]
74	3390.97	(dig-block-b_2_22-build-2 loader_3) [160]



3 Successful Plans

Value Plan