

FAMILY FOREST LAND OWNERS

This seed should be used to grow seedlings for Family Forest Landowners

GENETICALLY IMPROVED													
Species	Seedlot Ref Number	New Seed Zone Designation	Old Seed Zone Designations	Elevation	Amount Available (lbs)	Sales Price (\$/lb)	Collection Year	Test Date	Seed Viability (%)	Test Type	Purity	Seeds per lb	Collection Site (if known)
Douglas-fir	7866	1, 2	072, 081, 082, 090,	2500	1.61	\$ 650	2004	3/1/05	90	CHILL	95	30,900	Provolt Orchard
Douglas-fir	7872	3	511	3000	0.47	\$ 650	2004	3/1/05	94	CHILL	99	28,210	Provolt, Elevation 2500-3500
Douglas-fir	8315	4	061, 062, 071	1500	10.00	\$ 650	1992	10/20/08	97	CHILL	99	36,288	062/071 RFP Rivers East Seed Orchard
Douglas-fir	8672	5	051, 052, 053	1500	7.73	\$ 750	2008	6/14/10	86	CHILL	97	33,289	2008 Nehalem Interim Low Elevation High Gain Mix
Douglas-fir	10027	5	051, 052, 053	2500	1.67	\$ 750	2014	2/2/16	89	CHILL	99	38,063	2014 Nehalem Interim Med/High Elevation, High Gain Mix
Douglas-fir	10028	5	051, 052, 053	1500	5.48	\$ 750	2014	2/2/16	88	CHILL	99	38,580	2014 Nehalem Interim Low Elevation, High Gain Mix
Douglas-fir	8684	6	251, 252	1500	7.00	\$ 650	1996	11/1/03	92	CHILL	99	35,437	RFP Collection from BZ Noti/Wells Creek
Douglas-fir	9957	9	451, 452, 461, 471	3000	9.95	\$ 995	2014	8/15/15	85	CHILL	99	38,492	North Oregon Cascade Elite Mix, Mid Elevation. Families selected based on superior form and growth rates.
Douglas-fir	11570	9	451, 452, 461, 471	2000	5.13	\$ 850	2019	8/12/20	90	CHILL	99	43,200	North Oregon Cascade Medium Gain Mix, Low Elevation.
Douglas-fir	11572	9	451, 452, 461, 471	3000	4.19	\$ 1,250	2019	8/12/20	90	CHILL	99	36,581	North Oregon Cascade Elite Mix, Mid Elevation. Families selected based on superior form and growth rates.
Douglas-fir	11574	9	451, 452, 461, 471	3000	8.55	\$ 850	2019	8/12/20	92	CHILL	99	35,717	North Oregon Cascade Medium Gain Mix, Med Elevation
Douglas-fir	11686	9	451, 452, 461, 471	2000	0.31	\$ 1,250	2021	8/18/22	96	CHILL	100	29,842	North Oregon Cascade Elite Mix, Low Elevation. Families selected based on superior form and growth rates.
Douglas-fir	11689	9	451, 452, 461, 471	2000	2.41	\$ 850	2021	8/18/22	96	CHILL	100	33,353	North Oregon Cascade Medium Gain, Low Elevation Mix
Douglas-fir	12312	9	451, 452, 461, 471	2000	9.10	\$ 1,050	2007	4/18/24	87	CHILL	99	36,842	North Oregon Cascade, High Gain, Low Elevation Mix
Douglas-fir	12311	9	451, 452, 461, 471	2000	11.00	\$ 800	2007	4/18/24	96	CHILL	99	32,759	North Oregon Cascade, Medium Gain, Low Elevation Mix
Douglas-fir	12314	9	451, 452, 461, 471	3000	9.50	\$ 1,050	2007	4/18/24	84	CHILL	100	35,402	North Oregon Cascade, High Gain, Medium Elevation Mix
Douglas-fir	12313	9	451, 452, 461, 471	3000	9.50	\$ 800	2007	4/18/24	89	CHILL	99	37,259	North Oregon Cascade, Medium Gain, Medium Elevation Mix
Douglas-fir	9441	6	251, 252	1800	0.54	\$ 800	2012	10/18/13	95	CHILL	99	34,363	Dallas Low Interim Seed Orchard Mix
Douglas-fir	10030	6	251, 252	1800	1.77	\$ 925	2014	9/16/15	94	CHILL	98	36,287	Dallas Low Interim Orchard High Gain Mix
Douglas-fir	11389	6	251, 252	1800	9.36	\$ 925	2018	9/5/19	93	CHILL	98	35,929	Dallas Low Interim Seed Orchard Mix. High Gain Mix
Douglas-fir	11579	6	251, 252	1800	9.45	\$ 1,250	2020	9/2/21	94	CHILL	99	36,288	Dallas Low Interim Seed Orchard Elite Mix. Consists of best families for growth and form in the orchard. This is the best seed available from this orchard.
Douglas-fir	11580	6	251, 252	1800	25.14	\$ 950	2020	9/2/21	95	CHILL	99	37,488	Dallas Low Interim Seed Orchard High Gain Mix
Douglas-fir	11581	6	251, 252	1800	30.00	\$ 775	2020	9/2/21	94	CHILL	99	38,441	Dallas Low Interim Seed Orchard Medium Gain Mix
Douglas-fir	11241	6	251, 252	1800	6.04	\$ 1,095	2018	8/30/19	93	CHILL	97	35,151	Dallas Low Addition Seed Orchard Mix. Seed collected from 2nd Generation Seed Orchard. Very high gain potential.
Douglas-fir	11582	6	251, 252	1800	3.17	\$ 1,295	2020	9/15/21	95	CHILL	97	35,509	Dallas Low Addition Seed Orchard Mix. Seed collected from 2nd Generation Seed Orchard. Elite Selections for growth and stem form. Very high gain potential.
Douglas-fir	11583	6	251, 252	1800	12.76	\$ 995	2020	9/15/21	93	CHILL	98	37,958	Dallas Low Addition Seed Orchard Mix. Seed collected from 2nd Generation Seed Orchard. High Gain Selections.
Douglas-fir	11584	6	251, 252	1800	5.95	\$ 800	2020	9/15/21	93	CHILL	98	37,568	Dallas Low Addition Seed Orchard Mix. Seed collected from 2nd Generation Seed Orchard. Medium Growth Gains Selections.
Douglas-fir	9970	4, 5	051, 052, 053, 061, 062	1500	44.60	\$ 875	2014	10/1/15	86	CHILL	99	35,704	Burnt Woods Coastal Orchard Mix (Mid/High Gain)
Douglas-fir	10390	4, 5	051, 052, 053, 061, 062	1500	6.22	\$ 995	2016	10/1/15	92	CHILL	97	38,309	Burnt Woods Coastal Orchard Mix. Very High Gain potential. Heavily Rogued orchard infused with new high gain selections.
Douglas-fir	10391	4, 5	051, 052, 053, 061, 062	1500	4.39	\$ 875	2016	10/1/15	86	CHILL	99	35,704	Burnt Woods Coastal Orchard Mix (Mid/High Gain)
Douglas-fir	11790	4, 5	051, 052, 053, 061, 062	1500	29.18	\$ 995	2018	9/3/19	96	CHILL	96	36,149	Burnt Woods Coastal Orchard Mix. Very High Gain potential. Heavily Rogued orchard infused with new high gain selections.
Douglas-fir	11791	4, 5	051, 052, 053, 061, 062	1500	33.61	\$ 995	2020	9/16/21	94	CHILL	97	41,459	Burnt Woods Coastal Orchard Mix. Very High Gain potential. Heavily Rogued orchard infused with new high gain selections.
Douglas-fir	10390	4, 5	051, 052, 053, 061, 062	1500	6.22	\$ 995	2016	1/2/18	92	CHILL	97	38,309	Burnt Woods Coastal Orchard Mix. Very High Gain potential. Heavily Rogued orchard infused with new high gain selections.
Douglas-fir	11223	4, 5	051, 052, 053, 061, 062	1500	30.00	\$ 775	2018	9/3/19	93	CHILL	96	40,608	Burnt Woods Coastal Orchard Mix. Medium Gain potential. Lower growth potential than seedlot 10390.
Douglas-fir	11393	6, 8	251, 252, 261, 262	1500	0.93	\$ 995	2018	9/3/19	95	CHILL	97	35,690	Burnt Woods Inland Orchard Mix. Medium to high gain potential.
Douglas-fir	11557	4, 5	051, 052, 053, 061, 062	1500	18.20	\$ 1,395	2020	9/16/21	95	CHILL	97	49,080	Burnt Woods Coastal Orchard Mix. Elite selections for growth, rate, and form. Very high growth potential. Rogued orchard infused with new selections.

FAMILY FOREST LAND OWNERS

Douglas-fir	11561	4, 5	051, 052, 053, 061, 062	1500	30.00	\$ 800	2020	9/16/21	93	CHILL	97	43,431	Burnt Woods Coastal Orchard Mix. Medium Gain potential.
Douglas-fir	11565	6, 8	251, 252, 261, 262	1500	30.00	\$ 800	2020	9/16/21	93	CHILL	98	43,068	Burnt Woods Inland Orchard Mix. Medium Gain potential.
Douglas-fir	11836	6, 8	251, 252, 261, 262	1500	3.80	\$ 1,395	2022	10/5/23	98	CHILL	100	38,411	Burnt Woods Inland Orchard Mix. High Gain potential.
Douglas-fir	12476	6, 8	251, 252, 261, 262	1500	5.41	\$ 1,395	2024	9/8/25	97	CHILL	99	34,892	Burnt Woods Inland Orchard Mix. High Gain potential.
Douglas-fir	11550	7, 10, 11	270, 491, 492	2000	20.93	\$ 995	2020	9/16/21	93	CHILL	96	39,416	Roseburg Low Orchard. Medium to High Gain selections based on growth rates and stem form characterisitcs.
Douglas-fir	11551	7, 10, 11	270, 491, 492	2000	1.48	\$ 700	2020	9/16/21	94	CHILL	98	34,400	Roseburg Low Orchard. Low Gain selections based on growth rates.
Douglas-fir	11817	7, 10, 11	270, 491, 492	2000	2.19	\$ 1,395	2022	10/5/21	92	CHILL	100	31,283	Roseburg Low Orchard. Elite Gain selections based on volume production and stem from factors.
Douglas-fir	11818	7, 10, 11	270, 491, 492	2000	6.39	\$ 995	2022	10/5/21	91	CHILL	100	33,353	Roseburg Low Orchard. High Gain selections based on growth rates.
Douglas-fir	11587	Southern portions of zones 6 and 8	252, 262, 270, 481, 491	2000	10.16	\$ 800	2020	9/2/21	93	CHILL	99	36,581	Roseburg Elk Creek Orchard. Medium Gain selections based on growth rates.
Douglas-fir	11588	Southern portions of zones 6 and 8	252, 262, 270, 481, 491	2000	1.66	\$ 600	2020	9/2/21	88	CHILL	100	33,109	Roseburg Elk Creek Orchard. Low Gain selections based on growth rates.
Douglas-fir	11808	Southern portions of zones 6 and 8	252, 262, 270, 481, 491	2000	1.39	\$ 1,395	2022	10/5/23	94	CHILL	100	30,649	Roseburg Elk Creek Orchard. Elite Gain selections based on volume production andn stem form factors.
Douglas-fir	11809	Southern portions of zones 6 and 8	252, 262, 270, 481, 491	2000	2.86	\$ 995	2022	10/5/23	88	CHILL	100	34,115	Roseburg Elk Creek Orchard. High Gain selections based on growth rates.
Douglas-fir	11810	Southern portions of zones 6 and 8	252, 262, 270, 481, 491	2000	2.72	\$ 850	2022	10/5/23	95	CHILL	100	31,720	Roseburg Elk Creek Orchard. Medium Gain selections based on growth rates.
Douglas-fir	11811	Southern portions of zones 6 and 8	252, 262, 270, 481, 491	2000	0.47	\$ 600	2022	10/5/23	92	CHILL	100	31,500	Roseburg Elk Creek Orchard. Low Gain selections based on growth rates.
Douglas-fir	10286	6	251, 252	1500	1.17	\$ 900	2015	1/15/16	97	CHILL	95	40,968	Vernonia Interim Orchard Elite Mix, Low Elevation. Elite Selections based on volume growth and stem form.
Douglas-fir	10287	6	251, 252	2500	1.35	\$ 850	2015	1/15/16	94	CHILL	95	40,968	Vernonia Interim Orchard Mid to High Gain Selections, Mid Elevation.
Douglas-fir	11169	6	251, 252	1500	0.27	\$ 900	2017	5/7/18	96	XRAY	98	35,851	Vernonia Interim Orchard Elite Mix, Low Elevation. Elite Selections based on volume growth and stem form.
Douglas-fir	11171	6	251, 252	2500	0.78	\$ 850	2017	5/7/18	97	XRAY	100	35,576	Vernonia Interim Orchard Mid to High Gain Selections, Mid Elevation.
Douglas-fir	11699	6	251, 252	1500	9.54	\$ 1,295	2021	7/18/22	92	CHILL	99	36,288	Vernonia 2.0 Orchard Mix. Seed collected from 2nd Generation seed orchard. High Volume Gain Potential. Low Elevation. High Gain Potential.
Douglas-fir	11703	6	251, 252	2500	1.82	\$ 995	2021	7/18/22	92	CHILL	99	33,851	Vernonia 2.0 Orchard Mix. Seed Collected from 2nd Generation Seed Orchard. Medium to High Gain Potential. Mid to High Volume Gain, Mid Elevation Selections.
Douglas-fir	11703	6	251, 252	1500	18.10	\$ 1,395	2023	7/16/24	94	CHILL	99	40,071	Vernonia 2.0 Orchard Mix. Seed collected from 2nd Generation seed orchard. High Volume Gain Potential. Low Elevation. High Gain Potential.
Douglas-fir	11703	6	251, 252	1500	4.05	\$ 895	2023	7/16/24	100	CHILL	99	36,388	Vernonia 2.0 Orchard Mix. Seed collected from 2nd Generation seed orchard. High Volume Gain Potential. Low Elevation. Medium Gain Potential.
Douglas-fir	11703	6	251, 252	2500	2.16	\$ 1,295	2023	7/16/24	96	CHILL	100	36,581	Vernonia 2.0 Orchard Mix. Seed Collected from 2nd Generation Seed Orchard. Medium to High Gain Potential. Mid to High Volume Gain, Mid Elevation Selections.
Douglas-fir	12382	6	251, 252	1500	11.30	\$ 1,395	2023	7/16/24	93	CHILL	100	31,720	TRASK Inland 2.0 Orchard. 'Seed collected from 2nd Generation seed orchard. High Volume Gain Potential. Low Elevation.
Douglas-fir	12384	6	251, 252	1500	4.41	\$ 895	2023	7/16/24	97	CHILL	100	31,944	TRASK Inland 2.0 Orchard. 'Seed collected from 2nd Generation seed orchard. Medium Volume Gain Potential. Low Elevation.

FAMILY FOREST LAND OWNERS

Douglas-fir	10289	4, 5	051, 052, 053, 061, 062	1500	7.87	\$ 750	2015	5/1/16	81	CHILL	100	33,485	Swiss Needle Cast Tolerant Orchard (Mid/High Vol. Gain). Low Elevation. Best SNC Tolerant families for this area.
Douglas-fir	10297	4, 5	051, 052, 053, 061, 062	1500	4.13	\$ 950	2016	11/13/17	95	CHILL	97	40,968	Swiss Needle Cast Tolerant Orchard (Mid/High Vol. Gain). Low Elevation. Best SNC Tolerant families for this area.
Douglas-fir	11308	4, 5	051, 052, 053, 061, 062	2500	2.20	\$ 900	2019	8/3/20	90	CHILL	100	31,944	Swiss Needle Cast Tolerant Orchard (Mid/High Vol. Gain). Medium Elevation. Best SNC Tolerant families for this area.
Douglas-fir	11388	4, 5	051, 052, 053, 061, 062	1500	8.93	\$ 900	2019	8/3/20	93	CHILL	100	34,025	Swiss Needle Cast Tolerant Orchard (Mid/High Vol. Gain). Low Elevation. Best SNC Tolerant families for this area.
Douglas-fir	11540	4, 5	051, 052, 053, 061, 062	2500	3.02	\$ 950	2020	9/2/21	95	CHILL	99	33,600	Swiss Needle Cast Tolerant Orchard (Mid/High Vol. Gain). Medium Elevation. Best SNC Tolerant families for this area.
Douglas-fir	11394	4, 5	051, 052, 053, 061, 062	1500	7.14	\$ 950	2020	12/1/21	97	CHILL	96	35,997	Swiss Needle Cast Tolerant Orchard (Mid/High Vol. Gain). Low Elevation. Best SNC Tolerant families for this area.
Douglas-fir	11794	4, 5	051, 052, 053, 061, 062	1500	22.13	\$ 1,350	2019	8/3/20	95	CHILL	100	34,199	Seed from 2nd. Generation TRASK Coast Seed Orchard. Very High Gain Orchard Seed for Deployment at low to medium elevations in the Central to Northern OR Coast. Most advanced genetics available for deployment in these zones.
Douglas-fir	11386	4	061, 062, 071	2000	4.25	\$ 1,350	2019	12/1/21	92	CHILL	100	31,001	Seed Collected from 2nd Generation South Central Coast Seed Orchard. Very High Gain Orchard Seed for Deployment at low to medium elevations in the South Central Coast. Highest Gain Potential for deployment in this area.
Douglas-fir	11575	3, 16	511, 512	3500	5.05	\$ 1,250	2020	9/15/21	95	CHILL	98	35,537	Medford Orchard. Elite Seed Mix for Medium Elevations. Consists of best families for growth and form in the orchard. This is the best seed available from this orchard.
Douglas-fir	11576	3, 16	511, 512	3500	6.02	\$ 995	2020	9/15/21	92	CHILL	98	38,233	Medford Orchard. High Gain Seed Mix for Medium Elevations. Consists of rapid growing families in the seed mix.
Douglas-fir	11577	3, 16	511, 512	3500	4.50	\$ 775	2020	9/15/21	89	CHILL	97	36,926	Medford Orchard. Medium Gain Seed Mix for Medium Elevations. Consists of families with medium volume gains compared to seed mixes 11575 and 11576.
Douglas-fir	11578	3, 16	511, 512	2000	2.69	\$ 995	2020	9/15/21	93	CHILL	97	25,060	Medford Orchard. Medium to High Gain Seed Mix for Low Elevation Sites.
Douglas-fir	11679	3, 16	511, 512	2000	2.28	\$ 995	2021	8/18/22	99	CHILL	100	27,162	Medford Orchard. Medium to High Gain Seed Mix for Low Elevation Sites.
Western hemlock	7796	1, 2, 3	051, 052, 053, 061, 062, 251, 252	1500	9.40	\$ 1,500	2002	10/8/07	82	CHILL	99	252,000	Schroeder 1st. Generation Tillamook Hemlock Seed Orchard. Coastal OR Selections. Medium Gain Mix.
Western hemlock	11411	1, 2, 3	051, 052, 053, 061, 062, 251, 252	1500	11.13	\$ 1,500	2019	11/23/20	98	XRAY	100	192,915	Schroeder 1.5 Generation Low Elevation Hemlock Orchard. Seed mix includes seed from High Gain 2nd. Generation selections in the Orchard Coastal OR Selections. Medium-high Gain Seed Mix.
Western hemlock	8675	1, 2, 3	051, 052, 053, 061, 062, 251, 252	1500	4.73	\$ 1,250	2008	6/16/10	88	CHILL	98	224,176	Hemlock Coop 1.5 Generation Orchard 2008 Medium Gain Mix

FAMILY FOREST LAND OWNERS

INSECT OR DISEASE RESISTANT													
Species	Seedlot Reference Number	New Seed Zone Designation	Old Seed Zone Designations	Elevation	Amount Available (lbs)	Sales Price (\$/lb)	Collection Year	Test Date	Seed Viability (%)	Test Type	Purity	Seeds per lb	Collection Site (if known)
Port-Orford-Cedar	12304	BZ125	081, 252, 270	2500	0.86	\$ 3,695	2022	04/2023	91	CHILL	98	174,154	USFS Dorena Disease Resistant Orchard 125
Port-Orford-Cedar	12303	BZ110	062, 071, 072	1000	2.25	\$ 3,695	2022	04/2023	94	CHILL	97	181,120	USFS Dorena Disease Resistant Orchard 110
Port-Orford-Cedar	12300	BZ125	081, 252, 270	2500	1.45	\$ 3,195	2021	03/2022	78	CHILL	92	174,154	USFS Dorena Disease Resistant Orchard 125
Port-Orford-Cedar	11674	BZ125	081, 252, 270	2500	0.30	\$ 3,695	2020	03/2021	90	CHILL	99	196,870	USFS Dorena Disease Resistant Orchard 125
Port-Orford-Cedar	12299	BZ110	062, 071, 072	1000	2.36	\$ 3,695	2021	03/2022	92	CHILL	98	146,065	USFS Dorena Disease Resistant Orchard 110
Willamette Valley Pine	12532	11	251, 252, 261, 262, 452, 461, 471, 481	2000	40.00	\$ 650	2025	1/10/26	98	CHILL	100	8,416	Seed Collected from Schroeder Seed Orchard Willamette Valley Pine Orchard
Western white pine	7685	2	451, 452	4100	0.52	\$ 150	2006	12/21/06	93	XRAY	100	19,982	zone 2 lot #5

WOODS RUN													
Species	Seedlot Reference Number	New Seed Zone Designation	Old Seed Zone Designations	Elevation	Amount Available (lbs)	Sales Price (\$/lb)	Collection Year	Test Date	Seed Viability (%)	Test Type	Purity	Seeds per lb	Collection Site (if known)
Douglas-fir	8461	NA	861	4200	3.54	\$ 225	2008	5/22/09	94	CHILL	100	36,581	Sherrrod Meadows
Douglas-fir	8463	10	491	3000	1.00	\$ 225	1978	1/1/05	80	CHILL	97	36,085	Douglas County
Douglas-fir	11403	3	511, 512	1300	4.97	\$ 250	1993	2005	92	CHILL	99	30,234	
Douglas-fir	11405	3	511, 512	3200	3.53	\$ 250	1993	2005	90	CHILL	97	22,480	
Incense Cedar	12525	2, 3	481, 491, 492, 511, 512	2500	7.00	\$ 795	2022	8/1/23	58	CHILL	100	15,232	
Incense Cedar	12524	2	270, 512	2500	7.00	\$ 795	2022	8/1/23	55	CHILL	100	12,288	
Grand fir	8317	3	072, 081, 082, 090	1500	3.62	\$ 325	2001	10/30/03	69	CHILL	96	20,441	072-1.5 Reedsport RFP Collection
Grand fir	12413	4	251, 252	1500	4.00	\$ 350	2014	1/1/14	71	CHILL	98	18,590	
Grand fir	12415	3	072, 081, 082, 090	1500	9.60	\$ 295	2014	1/1/14	59	CHILL	98	17,718	
Grand fir	12448	8, 9	463, 475, 675	4000	26.75	\$ 350	1981	7/1/21	68	CHILL	99	14,080	
Grand fir	12528	3	072, 081, 082, 090	1500	1.60	\$ 295	2001	9/24/25	51	CHILL	95	14,300	
Grand fir	12530	4	251, 252	1500	7.60	\$ 295	2014	1/1/14	61	CHILL	99	19,380	
Grand fir	12531	3	072, 081, 082, 090	1500	3.40	\$ 295	2001	1/1/20	51	CHILL	95	14,360	
Giant Sequoia	11530	NA	541	6500	1.60	\$ 675	2018	9/20/19	34	CHILL	99	NA	Collected from native groves in Mountain Home, CA. Grows well in the Willamette Valley and into foothills of Cascades and Coast Range.
Giant Sequoia	11401	NA	534	5500	1.80	\$ 675	NA	12/24/24	34	CHILL	99	NA	Collected from native groves Sierra Nevada Mountains in CA. Grows well in the Willamette Valley and into foothills of Cascades and Coast Range.
Ponderosa pine	12307	3, 4	701, 702, 721, 722	4500	44.50	\$ 325	1998	1/1/23	95	CHILL	99		Fort Klamath, Or
Ponderosa pine	12308	NA	881, 882, 883	4500	12.00	\$ 325	2005	1/1/23	84	CHILL	99	11,540	Medical Springs, OR
Ponderosa pine	3660	10	892, 921, 922, 930, 941, 942, 943	5000	9.68	\$ 225	1992	7/23/96	96	CHILL	99	9,541	
Ponderosa pine	3666	10	892, 921, 922, 930, 941, 942, 943	5000	1.75	\$ 225	1992	1/15/93	75	CHILL	100	9,995	Calamity
Ponderosa pine	3668	10	942	5500	4.11	\$ 325	1992	1/15/93	97	CHILL	100	9,575	Shott Spring

Newer Seed Listings are Highlighted in Yellow