

PLA sorting

Future 500 Bioplastics Project



PELLENC
selective technologies

Project Sponsors

Future 500 Bioplastics Project received funds from CalRecycle to construct, test and prove that an optical sorter can separate PLA bioplastics from other plastics to work toward a clean PLA stream, and guard against unacceptable PLA in the PET stream.



• Primary Project Goals

1. Demonstrate the ability of optical scanners to separate PLA from PET and other plastics
2. Identify products made from PLA as well as other bioplastics that are in the sorted recyclables
3. Measure volume of PLA products that are separated by the sorting machinery, and the volume that remains in the sort residue
4. Educate MRF operators about best practices in PLA separation and recycling
5. Demonstrate to the materials recycling industry that state of the art technology can deliver marketable PLA and other uncontaminated bioplastics into the marketplace



Optical Sorting Technology

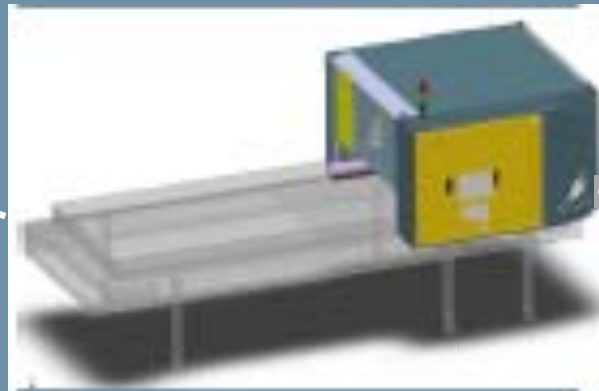
1 Infeed Conveyor

2 Sensing Head

3 Analysis & recognition engine

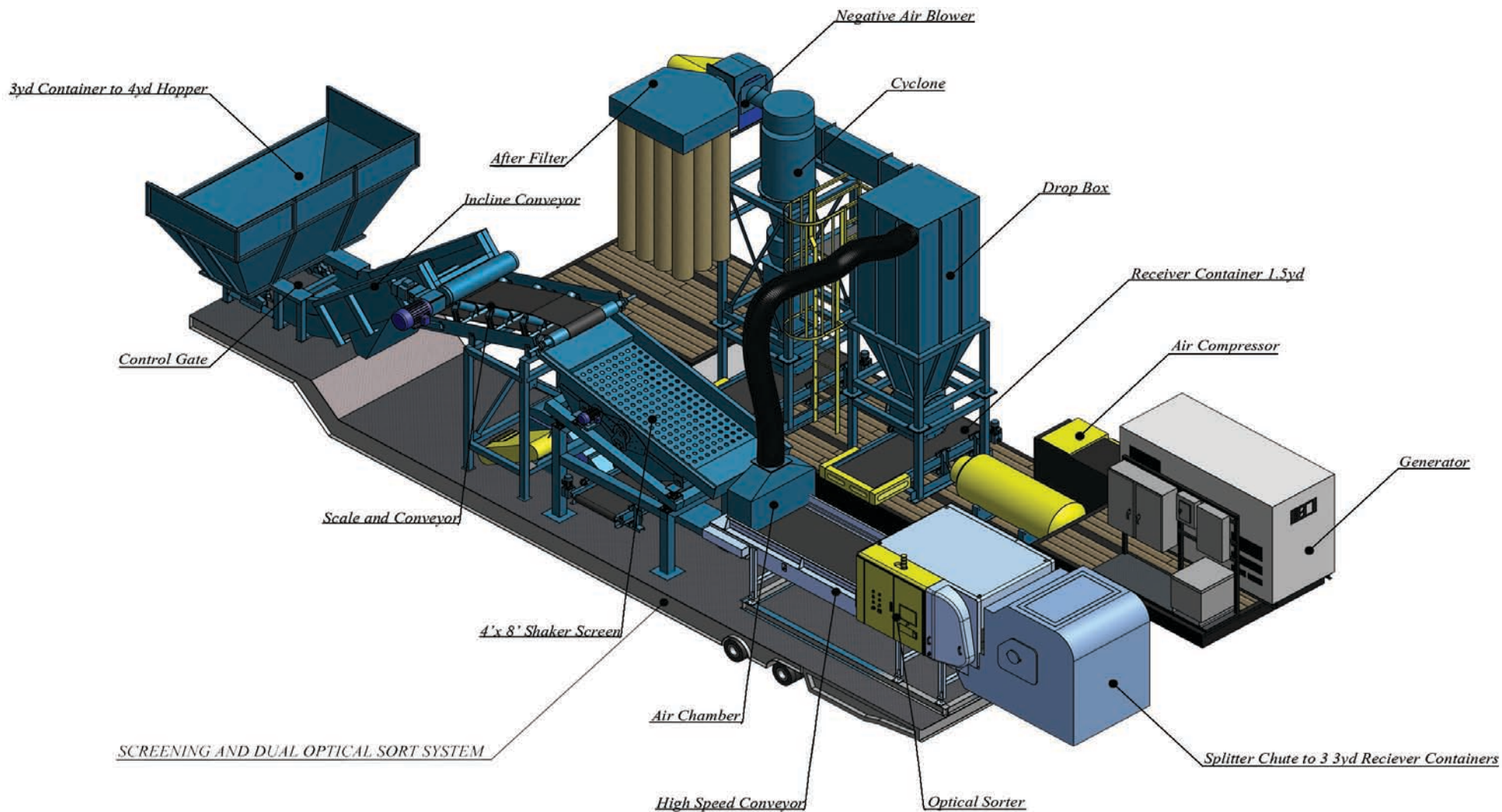


4 Blow-out with air jets



5 Sorted materials can be in 2 or more separate streams





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Technologies
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PORTABLE CONTAINER LINE SORTING SYSTEM CALIFORNIA

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TEL (909) 357 3156
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Methodology

Mobile line processes materials from a minimum of 12 MRFs, including:

- ☐ sorted PET
- ☐ sorted HDPE
- ☐ sorted mixed plastics
- ☐ incoming materials to containers line
- ☐ containers line residuals
- ☐ post re-run residuals

The number of samples to be run at each facility is sufficient to gather statistically valid information of the quality of the separations by the optical sorter.

At least three samples of at least 3 cubic yards of loose material from each stream will be run at each of the selected MRFs.



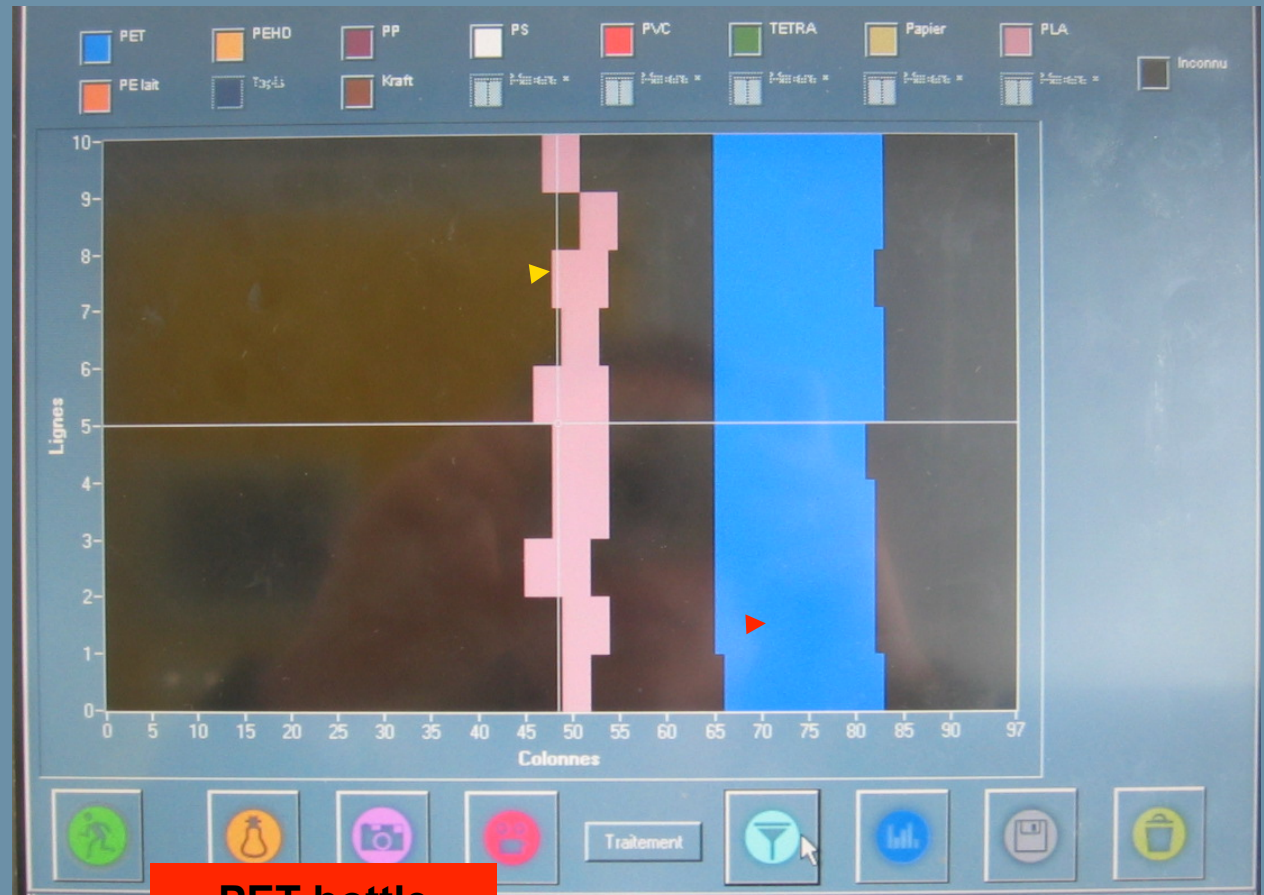
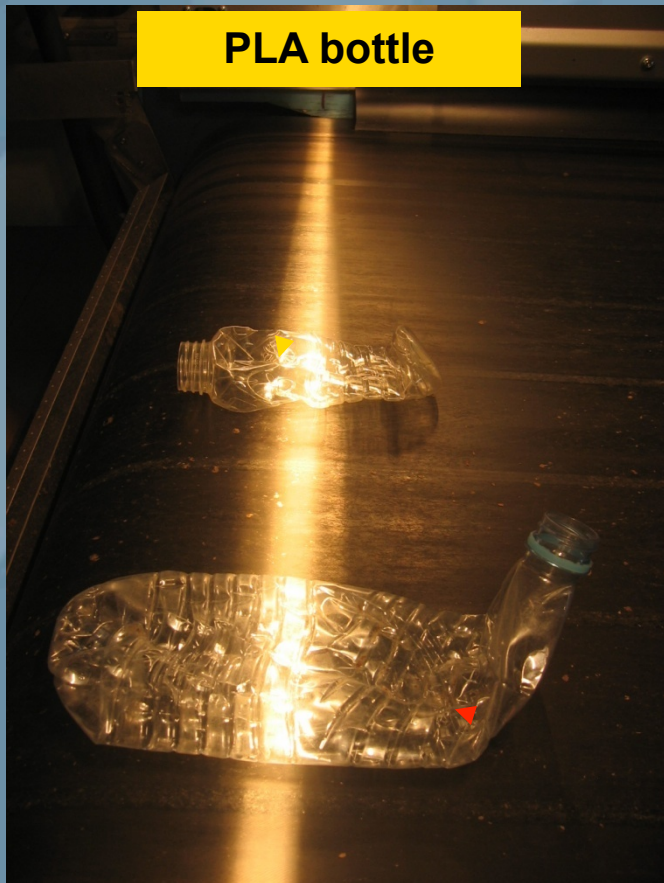
Complete Trailers



Sorting Pictures



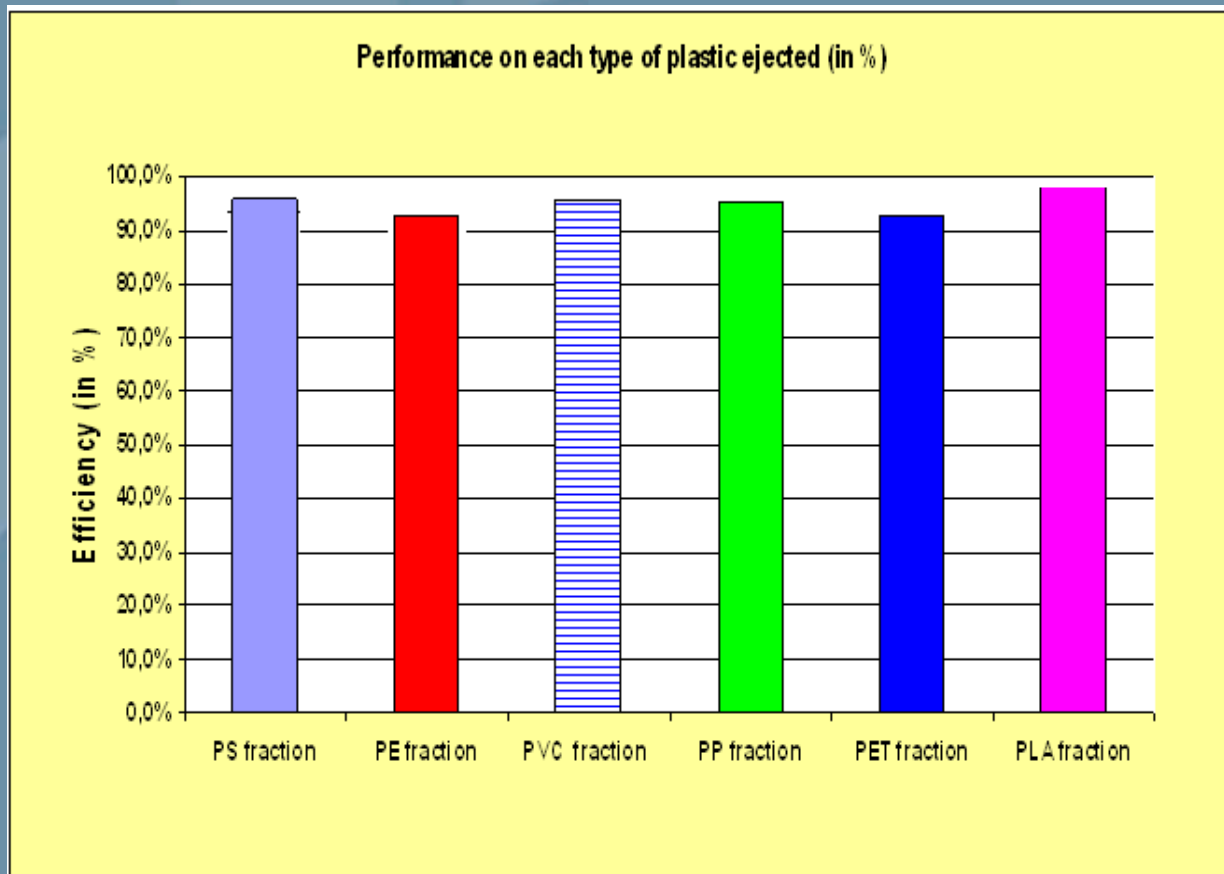
Results



PET bottle



Performances



PLA is positively sorted up

⇒ higher efficiency 97 to 98%

Other resins positively sorted down

⇒ efficiency in the 95/96% range

• Conclusion

PLA can be uniquely identified, quantities in single stream are still very limited, less than 0.1%, mainly found in PET and 3-7 stream.

Other bio-plastics could be sorted: bio films, PHB and PHBV could also be detected from petroleum based resins.



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