



LA County Integrated Waste Management Task Force Meeting

July 15, 2020

Presented by:
Bernard Fenner
Larry Condon
Markus Burri

True North Renewable Energy, LLC

True North Venture Partners

We are a True North Company – who is True North Venture Partners?

Ownership (\$700M Fund) – Ahearn family, Walton family, Ted Turner, Cox Enterprises

Our Purpose



We are developing an interconnected and symbiotic set of innovative technologies and businesses that will reshape core industries and help the world transition to a clean and sustainable future

Sectors that provide products and services vital to economic growth and social advancement - such as energy, water, fuels and chemicals – will not scale to meet future demands using legacy technologies and business models

True North's roots trace back to the founding and scale up of First Solar, Inc., one of the world's leading alternative energy providers. We are expanding on that experience to build a portfolio of innovative technologies and businesses that will reshape these core industries and help the world transition to a clean and sustainable future

The Ahearn family, members of the Walton family, Ted Turner and Cox Enterprises have committed \$700 million of equity and formed True North as a perpetual holding company with the ability to re-invest profits back into new business opportunities

Our Approach



We are building businesses that fit strategically and symbiotically into the overall vision we are bringing to fruition

Strategically Selected Businesses. We select, develop and scale transformative businesses that fit strategically and symbiotically into our overall vision for the future with the intent to build, own and operate them together over the long term

Integrated Under a Common Operating Platform. Our businesses share a common culture and set of operating principles and their teams collaborate in order to stimulate creativity, accelerate learning and exploit symbiotic technological and commercial opportunities











Talent Development. We are focused not only on attracting top talent but developing the high performing people in our businesses to their full potential through structured talent development plans and programs

Thorough Investment Underwriting. Our investments are based on strict criteria and supported by detailed techno-economic models, which are frequently revisited over the course of early stage development





Structured Risk Management. We employ a structured risk management process that forces early failures and assures that capital flows inversely to risk levels

Fast Scale Playbook. We accelerate commercialization and scale-up with time-proven engineering, project management, strategic marketing and operating methodologies that are deployed across our companies

True North Team

 <p>Mike Ahearn</p> <ul style="list-style-type: none"> Co-founder, former CEO and current Chairman First Solar 	 <p>Matt Ahearn</p> <ul style="list-style-type: none"> Goldman Sachs Special Situations Group BDT Capital Partners 	 <p>Steve Kloos</p> <ul style="list-style-type: none"> Ph.D. Chemistry Advanced Technologies Leader, GE Water 	 <p>Gary Aguinaga</p> <ul style="list-style-type: none"> True North Renewable Energy Senior Vice President & Chief Operating Officer, Harvest Power 	 <p>Bernard Fenner</p> <ul style="list-style-type: none"> Director of Energy Services Senior Vice President & Chief Operating Officer, Hitachi Zosen
 <p>Joe Thompson</p> <ul style="list-style-type: none"> Director of Supply Chain Sr. Global Sourcing Manager, Infineon 	 <p>Joanna Ahearn</p> <ul style="list-style-type: none"> Principal at Ahearn Talent Consulting Principal and Consulting Director, Korn Ferry 	 <p>Dev Gavaskar</p> <ul style="list-style-type: none"> Ph.D. Chemical Engineering Process Engineering at GTI, Elevance, Fuel Tech 	 <p>Aaron Chockla</p> <ul style="list-style-type: none"> Ph.D. Chemical Engineering R&D and engineering roles 	 <p>Jihad Zeid</p> <ul style="list-style-type: none"> BS Chemical Engineering

True North Team - Operating Partners

 <p>Chip Hambro</p> <ul style="list-style-type: none"> Former COO First Solar Engineering and Operations executive roles at Goodrich and ITT 	 <p>Jay Kouba</p> <ul style="list-style-type: none"> Ph.D. Chemistry Executive roles at Amoco and BP Founder & CEO of multiple start-ups 	 <p>Alan Henderson</p> <ul style="list-style-type: none"> Engineering and operations leadership roles at First Solar, Boeing 	 <p>Bill Katz</p> <ul style="list-style-type: none"> Former President and CEO of BBDO Co-founder of Visible World
<p>Government Affairs</p> <div style="border: 1px solid black; padding: 5px;"> <p>Lorraine Paskett</p> <ul style="list-style-type: none"> California GA and BD Former FSLR GA lead in CA Former Exec - LAWWP and PG&E <p>Dan Wright</p> <ul style="list-style-type: none"> China GA and BD Founder/CEO - Greenpoint Senior Treasury under Sec'y Paulson - U.S./China SED <p>David Wortmann</p> <ul style="list-style-type: none"> Germany and EU GA and BD Former FSLR GA lead in EU </div>			

True North Renewable Energy

What is our focus?



We are a development company



We develop, build, own and operate organic waste to energy facilities



Producing renewable energy, reducing GHG emissions and producing organic compost



Achieving sustainability in waste utilization with clean energy innovation and soil revitalization



We support California in meeting its organic waste diversion goals

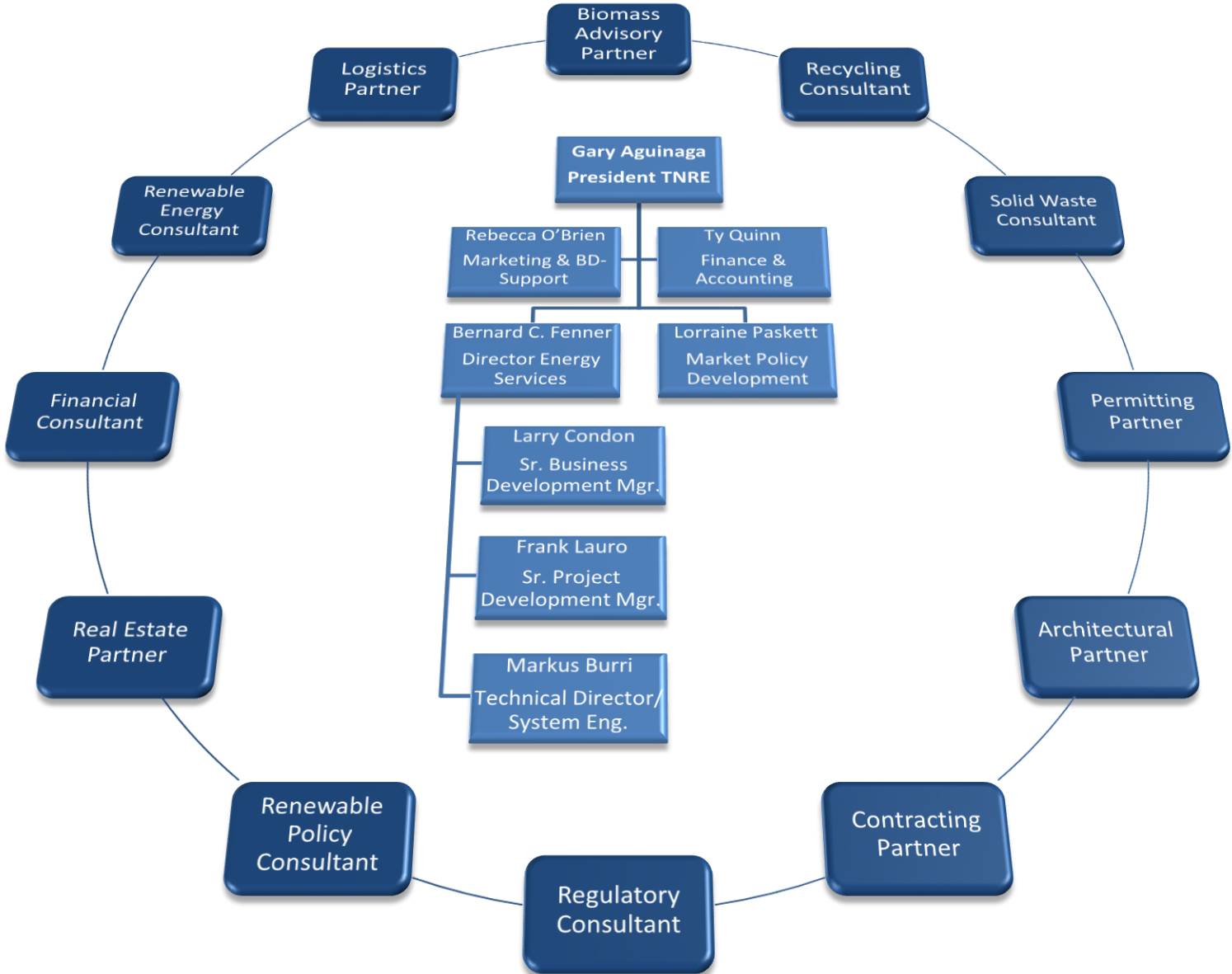


We assist other TN companies in developing markets and creating business opportunities

True North Renewable Energy



A core team surrounded by market and broad and experienced industry experts



Market Drivers



SB 1383 Requirements

- 2020 ↓ 50% Landfilled Organic Waste
- 2025 ↓ 75% Landfilled Organic Waste
- 2025 ↑ 20% Edible Food Recovery

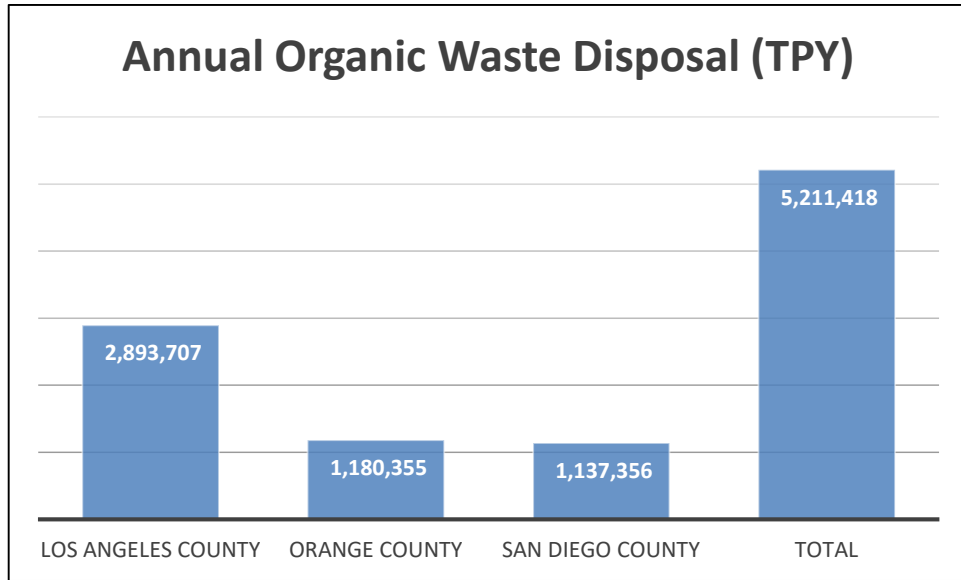
CALIFORNIA DISPOSED OF APPROXIMATELY 27 MILLION TONS OF ORGANIC WASTE IN 2017

SB 1383 Requires 50-100 New or Expanded Organic Waste Recycling Facilities

<https://www.youtube.com/watch?v=-enW7SgSt1U&feature=youtu.be>
 CalRecycle (2019). SB1383 Talking Points.

Southern California Focus

Why are we starting in Los Angeles?



RENEW LA Plan
set a goal of 90%
waste diversion
by 2025

- Existing organic waste processing infrastructure is insufficient to meet goals
- Significant issues with expanding existing infrastructure due to regulatory hurdles, land use constraints, residential encroachment, and limited markets for end use products

TNRE Holistic Solution

Producing renewable energy, reducing GHG emissions and providing organic compost

- Accept a wide and changing range of separate or comingled organic wastes.
- Unique process - no liquid digestate is produced and minimal wastewater is discharged from the site.
- High yield of RNG ready for pipeline injection and/or use as transportation fuel.



Focus on HSAD with incidental in-vessel composting

Built on proven, reliable core technology, combine with smart composting process for high gas yield and quality compost product

LSAD = Low Solids AD HSAD = High Solids AD	Wet / LSAD	HSAD Batch	HSAD Continuous
% DS (Dry Substance) of feedstock	Low < 15% "liquid"	High > 30% "on heaps only"	Broad range 15-50% "liquid or on heaps"
Feedstock	Clean food waste, manure, sludge	Organic rich in structure	Very wide range of organics
Impact for clients	Seperate, clean food collection preferred	Favorable structure rich material	No restrictions
Acceptable impurities	Very low	High negative impact on gas yield	Up to 20%
Design principle	Vertical vessels fully agitated	Concrete box with percolation	Horizontal or vertical vessel agitated plug-flow
Gas production	High and constant	Low and fluctuating	High and constant
Outlet product	Mainly liquid digestate	Mainly solid digestate	Solid and/or liquid digestate

TNRE working with jurisdictions

To maximize the benefit of the current 3-bin system



The screenshot shows a website page with a blue header. At the top, there are four buttons: 'Reduce' (orange), 'Reuse' (green), 'Recycle' (red), and 'Rethink' (dark blue). A circular logo in the center features a globe and the words 'Reduce', 'Reuse', 'Recycle', and 'Rethink' around it. Below the header, the main content area is titled 'Recycle | Bins'. On the left is a navigation menu with links: 'Welcome', 'What Is Recycling?', 'Tips - What Can I Do?', 'Resources', 'About Curbside Recycling', 'Type of Carts', and 'Commonly Asked Questions'. The main content area features a green recycling bin and a section titled 'Green Carts - What goes in'. This section includes a green checkmark icon and the text: 'Most residents have a cart used to put yard waste into for collection.' Below this are several bullet points: 'Grass clippings', 'Leaves', 'Brush', 'Shrubbery pruning', 'Sawdust', 'Tree trimmings', and 'Tree limbs 4 diameter maximum'. At the bottom of this section is a link: 'Find out what *doesn't* go into a Green Cart'.

<https://www.dpw.lacounty.gov/epd/rethinkla/recycle/recycle-bins-green-what-goes-in.aspx>

TNRE will manage all streams of organic feedstock from residential, industrial, institutional and commercial sources, including:

- 🍃 Food scraps
- 🍃 Packaged food waste
- 🍃 Liquid food waste
- 🍃 Green waste
- 🍃 Comingled collected food & green waste
- 🍃 Compostable material
- 🍃 Organic fraction of MSW

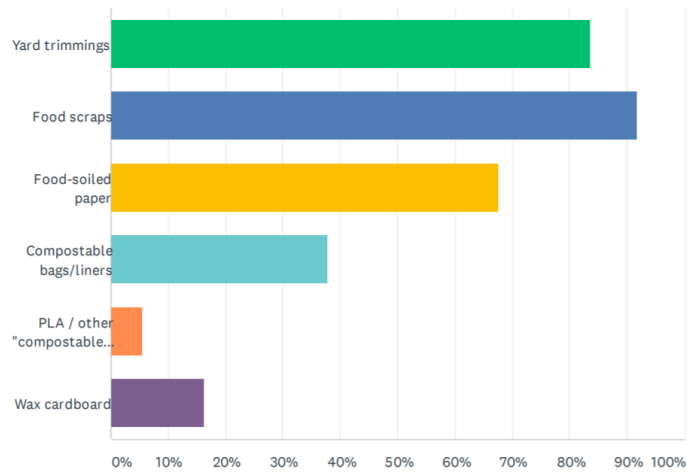
TNRE surveying collection practices & needs

Working with jurisdictions to meet SB 1383 Implementation

Southern California SB 1383 Infrastructure Survey

Q13 What materials are currently accepted in the commercial green waste/organics program? (Please select all that apply)

Answered: 37 Skipped: 9

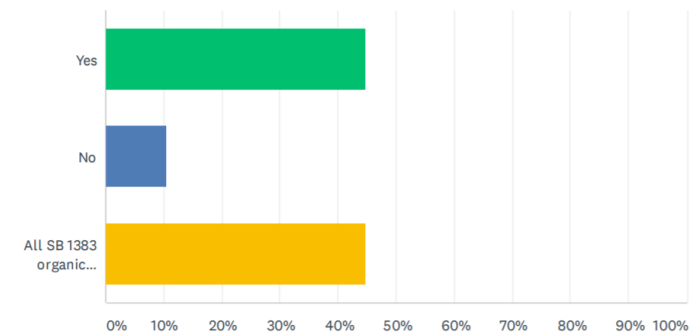


ANSWER CHOICES	RESPONSES	
Yard trimmings	83.78%	31
Food scraps	91.89%	34
Food-soiled paper	67.57%	25
Compostable bags/liners	37.84%	14
PLA / other "compostable" plastics	5.41%	2
Wax cardboard	16.22%	6
Total Respondents: 37		

Southern California SB 1383 Infrastructure Survey

Q14 Does the city plan to modify the list of acceptable organic material for upcoming SB 1383 implementation?

Answered: 38 Skipped: 8



ANSWER CHOICES	RESPONSES	
Yes	44.74%	17
No	10.53%	4
All SB 1383 organic material already accepted	44.74%	17
TOTAL		38

Southern California Receiving Points

- TNRE will design, build, own and operate a scalable facility in phases, starting with processing organic feedstock of 150,000 tpy, up to 600,000 tpy.
- TNRE will build a state-of-the-art organic waste processing facility that will produce large amounts of high-quality organic compost soil amendment (up to 250,000 tpy) and large quantities of Renewable Natural Gas (up to 1,000,000 MMBTU).
- There will be multiple Southern California receiving points for your Organic Waste.



Questions & Comments


Resources & Links

1) For more information on our organics processing facilities please contact:

- Bernard C. Fenner – bfenner@tnrenewableenergy.com
- Frank Lauro – flauro@tnrenewableenergy.com
- Larry Condon – lcondon@tnrenewableenergy.com
- Markus Burri – mburri@tnrenewableenergy.com

2) To watch a short clip of the Bio Energia Trentino Facility in Faedo, Italy, see YouTube link: <https://www.youtube.com/watch?v=5BQsJf9ubnQ>.

3) TNRE Facility Overview, Benefits and Time Schedule can be sent via e-mail attachment. Thank you for your interest.




TNRE Facility Timeline

Putting our organic waste streams to beneficial use, TNRE has developed holistic AD infrastructure, with the ability to process the entirety of the organic waste stream. For TNRE to develop sustainable first phases of our facility, we are looking for select clients, with an array of waste products, to reserve capacity.

We aim to build capacity for you and with you, and to be your first choice in organics processing.

Scope	Timing
Building Feedstock Client Relationships	Ongoing
Client Relationship Agreements	July - December 2020
Financial Close	June 2021
Notice to Proceed	July 2021
Operational – First Waste Received	June 2023
Fully Operational	October 2023

The TNRE Solution – achieving sustainability in waste utilization with clean energy innovation & soil revitalization



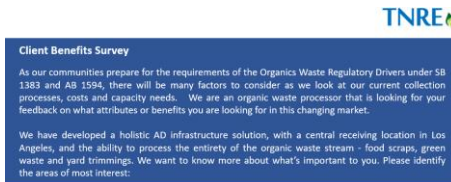
Distinct Features & Services

TNRE's process is transformative for the waste sector – meeting the diversion goals of today and into the future

- Flexibility of feedstocks accepted providing a single waste bin solution
- Guaranteed processing capacity to meet company and community needs
- The process is highly automated allowing a 24/7 operation of the key systems – digestion process, biogas upgrading and air cleaning
- Enclosed receiving area
- Pre-processing includes removing contaminants (plastics, non-organics) prior to feeding of the digester
- Anaerobic digestion process
- Air cleaning and odor abatement
- Compost offtake servicing regional agricultural, farming and landscaping needs
- Production of renewable natural gas feeding into the natural gas pipeline

Diverting organic waste from landfill will significantly reduce the emissions of super-pollutant methane and other nuisances.

Putting our organic waste streams to beneficial use, TNRE has developed holistic AD infrastructure, processing the entirety of the organic waste stream, producing renewable natural gas (RNG), natural fertilizers and soil amendments.



Accepted Feedstocks

The scalable TNRE facilities will manage all streams of organic feedstock from residential, industrial, institutional and commercial sources

- Food scraps
- Organic fraction of MSW
- Industrial comingled food waste
- Yard trimmings
- Green waste
- Comingled collected food & green waste
- Compostable material
- Packaged food waste
- Liquid food waste

Client Benefits Survey

As our communities prepare for the requirements of the Organics Waste Regulatory Drivers under SB 1383 and AB 1594, there will be many factors to consider as we look at our current collection processes, costs and capacity needs. We are an organic waste processor that is looking for your feedback on what attributes or benefits you are looking for in this changing market.

We have developed a holistic AD infrastructure solution, with a central receiving location in Los Angeles, and the ability to process the entirety of the organic waste stream - food scraps, green waste and yard trimmings. We want to know more about what's important to you. Please identify the areas of most interest:

Commercial Sources (e.g. grocery stores, food processors):

- Reliable, long term market
- Holistic solution to organic waste streams – all streams accepted
- Single pickup – simplifies on-site disposal infrastructure (one bin etc.)
- Attractive pricing with early sign-up
- Long term pricing and commitments
- Assistance with zero waste certifications (e.g. TRUE, CRRA, Zero Waste USA), and best practices
- Part of the circular economy creating RNG and Compost from organic waste


Haulers:

- Guaranteed processing capacity to meet SB1383 commitments
- Attractive rates with early sign-up
- Proximity to clients/pick ups
- Flexibility of feedstocks accepted – single market vs multiple disposal markets
- Long term commitments – no need to look for alternative solutions for 10+ years, eliminates worry for fines/penalties for non-compliance
- Ability to expand organic waste client portfolio – new service
- Assistance with zero waste certifications (e.g. TRUE, CRRA, Zero Waste USA), and best practices
- Part of the circular economy creating RNG and Compost from organic waste

Municipalities:

- Guaranteed processing capacity to meet SB1383 commitments
- Attractive rates with early sign-up
- Expansion of service provision
- Long term commitments – no need to look for alternative solutions for 10+ years, eliminating concern for fines/penalties for non-compliance
- Simplified diversion reporting – tracking via a central receiving facility
- Part of the circular economy creating RNG and Compost from organic waste

The TNRE Solution – achieving sustainability in waste utilization with clean energy innovation & soil revitalization



Accepted Feedstock at a TNRE Facility:

Green waste

- Tree trimmings (branches, leaves, brush)
- Grass trimmings
- Flower waste
- Comingled Food & Green waste

Food waste

- Organic fraction of MSW
- Food scraps
- Processed food
- Dairy waste (cheese, whey powder, supplement waste [gel caps, powders])
- Meat waste (intestines, organs, fats, blood, offal, rumen content)
- Fruit and vegetable waste, and bagasse
- Bakery waste
- Coffee waste
- Grain and nut waste – hulls, dried distillery grains

Packaged food waste

- Palletized food waste
- Paper, cardboard – unwaxed and waxed
- Plastic packed food products

Liquid food waste

- Fats, oils and greases
- Dairy – whey, milk waste, dissolved air flotation
- Wastewater sludges
- Glycerin, glycerol
- Juice waste
- Beverage waste – expired products, run offs, clean rinses

Questions regarding other accepted items:

- _____
- _____
- _____
- _____

The TNRE Facility – we aim to be your first choice in organics processing