Waste Synergies and Opportunities Daniels Health Incinerators

Paul Vujic – Manager Industrial Waste
Safety Share

- Site visit today at Wiblin Street
  - Watch for uneven surfaces eg concrete footpaths
  - Take time when conversing steps, getting off bus, stepping over raised areas.
  - May be a damp area around bin washing area. Possible slip hazard.
  - Be aware of your surroundings as working environment.
  - Keep to walkways behind guide and refrain from touching anything.
Overview of Facilities

• Facilities located in Sydney (Silverwater) and Melbourne (North Laverton). Market leader and accepts waste streams from local and interstate customers.

• NSW’s largest HTI (High Temperature Incinerator) and Melbourne facility is one of only two in the state.

• Processes medical and clinical waste in Sydney. Operates 24/7.

• Barriers to entry very high (Council and EPA permits).

• Base business of medical waste underpins facility. Additional hazardous work is incremental and therefore attractive.

• Great locations in Melbourne and Sydney. Transport efficiencies. Existing Toxfree Environmental Services (TES) locations nearby.

• Experienced and highly skilled staff within the business. Very specific skill sets.

• Very good safety and environmental records. Excellent relationships with regulators.
Silverwater - Sydney

• **Major $4m upgrade completed (Feb 17).** Best practice “Air Quality Control System” (AQCS) in the country. Improved emissions, improved productivity and increased waste streams being accepted as a result of the upgrade.

• **New EPA license (Mar 17).** The Silverwater facility has expanded its capability and can now receive and process Hazardous liquid and chemical waste. Not just medical waste processing.

• **Liquid disposal and High end Hazardous Waste.** Liquid injection system for solvents/aqueous waste streams installed. Energy rich liquids substitute for gas. Increased volume being processed. Further engineering improvements being planned to increase productivity.

• **Materials handling and processes implemented.** Able to accept and process Hazardous materials efficiently. Utilising the expertise from Toxfree Environmental Services.
Silverwater - Sydney

- **Incinerator overview.** Temperatures >1100°C. Gas fired burners with liquid fuel injection capability. Packaged chemicals and hazardous waste capability. System utilises the energy from the waste to reduce gas consumption.

- **Examples of waste streams.** Fuels, Solvents, Laboratory chemicals, dangerous goods, highly reactive chemicals, photographic waste, Quarantine waste, pharmaceutical, product destruction (firelighters, cigarette lighters, hair dyes, perfumes, solvent bottles etc).

- **Areas of focus.** Utilising Toxfree’s existing collection and market facing network, personnel and infrastructure, the Daniels facilities can focus on improving throughput and process enhancements. This is already paying dividends.
Laverton - Melbourne

- Rotary Kiln process in Vic.
- Licensed for high end PCB waste as well as medical waste. Compliments Toxfree’s existing Narangba, Qld Plasma Arc facility.
- Excellent license and development consent.
- Excellent location adjacent to TES Melbourne depot, only 400m away.
- Production opportunities identified.
- Opportunity to further expand license and develop “Toxfreefuel” as a gas substitute.
Waste Synergy Project

- Waste disposal synergy on track at Apr 17 and improving.
- Increasing since acquisition to a record month in Mar 17 with further improvement forecasted and a pipeline of projects underway.
- Waste traditionally went outside the Toxfree Group of companies.
- Strong face to face roll out across Toxfree (especially TES) nationally. National logistic and process network in now place.
- Waste being received from Toxfree branches all over Australia (Sydney, Newcastle, Melbourne, Perth, Brisbane and Adelaide).
- Benefits to both TES existing business and Daniels Health. Gas savings, incremental volume/revenue at Daniels. Toxfree save on freight and disposal costs. Spend kept inside the group.
Waste Synergy Project

What have we done to date.....

- Upgraded Sydney’s Air Quality Control System (AQCS)
- Increased acceptance criteria and types of waste streams being processed
- Significantly upgraded EPA licence. Issued Feb 17
- Installed second liquid injection system.
- National logistics network set up to efficiently transport waste from around Australia.
- Training and education of staff to ensure synergies maximised, includes leakage report.

To do.....

- Further enhancement of liquid injection system to increase types of waste material that can be processed.
- Continue to create new benchmark production records for liquid injection.
- Additional waste streams and new revenue streams being evaluated and tested
- Develop and refine Toxfreefuel.
Questions?

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Contents

• Hazardous Household Waste
  • Clean Out (mobile) events
  • Community Recycling Centres (CRC’s)
• Innovation – HazPak MK II, Energy from Waste
• E-waste
• BluBox
• Strategy FY18
• Conclusion
Strategy

- TES focus on Hazardous Household Wastes and Packaged Chemicals (i.e. universities and schools).

- Complimentary services include fluorescent tube, lamp and e-waste recycling.

- Strong presence in regional NSW with CRCs and regional collection runs.

- Integration with the Daniels Team to strengthen market position within the Health Services Sector (i.e. packaged hospital chemical wastes).
Household Hazardous Wastes

• Contract with NSW EPA for Household Hazardous Wastes – mobile collections.

• Currently servicing 4 out of the 5 zones.

• Most weekends have a collection between Feb and Nov, across NSW.

• Collections accept 41 categories of waste products i.e pesticides, paint, gas cylinders, oils, acids, etc
Hazardous Household Wastes

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Waste Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>B12 Stillage</td>
<td>Paint, oil, etc</td>
</tr>
<tr>
<td>FP2 Cage</td>
<td>Gas Cylinders - Propane</td>
</tr>
<tr>
<td>FM1 Stillage</td>
<td>Fire Extinguishers</td>
</tr>
<tr>
<td>FPIR Stillage</td>
<td>Gas Cylinders – Other</td>
</tr>
<tr>
<td>Fluoro Box</td>
<td>Fluoro tubes and lamps</td>
</tr>
<tr>
<td>205L Open-Top Drums</td>
<td>Aerosols, acids, non-haz</td>
</tr>
<tr>
<td>Small and Large Kegs</td>
<td>Reactives, acids, household batteries</td>
</tr>
<tr>
<td>Bunded Pallets</td>
<td>Lead Acid Batteries</td>
</tr>
</tbody>
</table>
Community Recycling Centres (CRCs)

• ~90 sites currently operational.

• NSW EPA aim to roll out ~101 permanent sites (excluding a couple of mobile collection vehicles).

• Targets high volume, low toxic waste streams such as paints, oil, gas cylinders, car batteries, etc

• MOU signed with Penrith City Council to build and operate a CRC at Charles St.
Community Recycling Centres (CRCs)
Innovation – TES Sydney

• HazPak MK II to be operational in May 2017.
  • HazPak will handle paints, solvents, pesticides, surfactants, aerosols, etc.
  • Blended into a fuel source for Daniels Silverwater’s Energy from Waste process.
• Only plant of its type in NSW.
e-waste

• Not currently banned from landfill, however VIC may by end end of 2017.

• Expansion into NSW Local Government market.

• Recycling directly for OEMs (Original Equipment Manufacturers) take back programs.

• Secure destruction of data sensitive equipment, e.g. financial institutions, defence, etc.
e-waste

• In Australia, e-waste is growing three times faster than the rate of general domestic waste.

• Increased e-waste recycling driven by mandatory Federal legislation (Product Stewardship Scheme) for ‘end-of-life’ TVs and computers.

• Requiring progressively higher rates of recycling from 50% in 2015/16 to 73% by 2024/25.
BluBox

• Automatic process that separates commodities from e-waste, whilst under a vacuum environment.

• Further separation of e-waste components - plastic, glass, metal and phosphor powder containing mercury.
Strategy FY18

• Primary target markets – Education and Hospital sectors for chemical wastes, fluorescent tubes and e-waste.

• Build on our regional market share to complement CRC collections.

• Integrate Daniel's Energy from Waste plant with HazPak as a innovative selling point to our customers.

• Introduce treatment technology lacking in NSW (backwards integration) for corrosives and toxics.
That concludes the presentation.

Are there any questions?
Worth Recycling
Overview
George Cooper – Sales & BD Manager
**WORTH RECYCLING is the industry leader in the collection, transportation, processing and recycling of industrial and contaminated waste streams:**

- Handling, transport and treatment of wastewaters, waste oils and other wash waters
- Client contaminated solids investigations, assessments and formulation of immobilisation treatments
- Experienced team, specialising in industrial cleaning services for any size project including Non Destructive Digging, CCTV & Drain Cleaning work
- Technical design, development and management of new and innovative waste and wastewater processing technologies
- Development, handling and operation of innovative recovery resource initiatives

Diverse Customer Base

- Caltex
- Endeavour Energy
- AusGrid
- BlueScope Steel
- Boral
- Viva
- Northconnex
- Lendlease
- Westconnex
Our Assets & Innovative Resource Recovery Facilities

WORTH RECYCLING:

- Three innovative waste treatment facilities
  - South Windsor Integrated Liquid and Soil Waste Facility
  - St Mary’s Contaminated Soil Facility
  - Port Kembla Integrated Liquid and Sludge Facility

- Four waste and truck depots across New South Wales
  - South Windsor
  - St Mary’s
  - Port Kembla
  - Kurri Kurri

- One hundred & forty experienced waste personnel

- Own and operate EPA licensed fleet of liquid, vacuum and SuperSucker tankers
South Windsor Integrated Liquid and Soil Waste Facility
Our Capabilities – South Windsor

EPA LICENCED & CAPABLE OF:

**EPL 4602**

- J120 Oily Water
- J100 Oil
- J100 Grease
- J160 Residues
- Z140 Groundwaters
- M250 Surfactants
- N190 Filter Cake
- N205 Industrial Residues
- N120 Hazardous Soils
- Stormwaters
- Drill Mud

**EPA LICENCED FOR:**

- T190 Grease Trap
- K110 Cooking Oil
St Mary’s Contaminated Soil Facility
Our Capabilities – St Mary’s

EPA LICENCED & CAPABLE OF:

EPL 20271

• N120 Contaminated Soils

DA APPROVED FOR:

• J120 Oily Water
• Grease Trap
• Packaged Waste
• Construction & Demolition Waste
• Drill Mud
Port Kembla Liquid & Coal Tar Facility
Our Capabilities – Port Kembla

EPA LICENCED & CAPABLE OF:

- J100 Oil
- J120 Oily Water
- Z140 Groundwaters
- Coal Tar Impacted Slurries
Our Capabilities – Industrial Services

*Toxfree Industrial Services NSW business offers a wide range of services to handle any industrial services requirements*

- Typical Services include:
  - Wet & Dry Vacuum Loading
  - High Pressure Water Blasting
  - Tank Cleaning
  - Sewer & Drain Cleaning
  - Non Destructive Digging
  - Facility Decommissioning

- Twenty Four (24) Items of Plant & Equipment

- Thirty Two (32) Permanent Employees

- Multiple Casuals

- Two P&L and Reporting Structures
  - Industrial Services – Sydney
  - Industrial Services – Defence
RESPONSIBILITIES & SERVICES:

• Sydney Region – Liquids & Contaminated Soils
  • Two treatment facilities (South Windsor & St Mary’s)
  • 30 x Liquid Vacuum Tankers

• Hunter Region – Liquids, Industrial Services, Packaged Waste, Parts Washes, Total Waste Management
  • Two facilities (Kurri Kurri & Heatherbrae)
  • 15 x Liquid Vacuum Tankers and IS Trucks

• Port Kembla – Liquids
  • Two treatment facilities (OWTP & CTP)
  • 12 x Liquid Vacuum Tankers

• Melbourne – Liquids

• Brisbane – Liquids
Key Strategic Opportunities

CURRENT ACTIVITY:

• Continue to target the strong infrastructure market in NSW for Industrial Services work and diversify our skills and customer portfolio in the other keys markets i.e. drain cleaning/CCTV, hydro demolition etc.

• Develop major contaminated soil projects in NSW via our Contaminated Soil Facility at St Mary’s

• Continue our market development and technical focus in the creation of low grade fuel oils for the on sale of value products

• Develop and implement a total waste management strategy in the Hunter Valley region to complement the Toxfree range of services

• Implement innovative liquid waste treatment technology at South Windsor to complement our existing liquid waste services
Questions?

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