Technical Support Instrument

Supporting reforms in 27 Member States

Solid Waste Recycling

Understanding key risks and mitigating factors

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Introduction to the Presenter – Simon Bingham

Regulatory Experience – 30+ years

- Permitter, Inspector, Specialist & Manager
- Implementer of new legislation (Waste, Water, Integrated, Radioactive)
- Developer of systems (Permitting, Risk & Inspection Frequency etc)
- Trainer

International Experience – 19+ years

- Project Executive & Project Manger of numerous technical projects
- Team Leader of 15+ organizational reviews
- IMPEL Board Member & Expert Team Leader for 9 years
- Worked in Europe, America, Asia & Africa

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My task:

Present on solid waste recycling in particular the key risks and mitigation factors associated with solid waste recycling and support a joint review and discussion on inspection checklists.

Question:

Is there any specific areas you want me to cover or questions you would like me to answer this afternoon?

This Morning's Agenda

Rough Timings	Solid Waste Recycling Agenda
0900	Introduction
-	Waste management control in Lithuania
1000	Key risks from solid waste recycling installations
1000 - 1015	Break
1015	Key risks from solid waste recycling installations…continued
-	Building a checklist using a MRF as an example
1130	Risk
1130 - 1300	Lunch

My rules of engagement

1.	You can ask questions at any time – I will of you ☺!
2	There are no daft or stupid questions (don't assume others all know the answers already – they probably don't – help them out by asking! I assume there is a knowledge range in the room
3.	Respect each other (don't talk over each other)
4.	Be present (no emails etc please)
5.	If you have to take a call please take it outside (ideally switch your phones off if you can)
6.	Have fun
7.	Any questions about this?

1. Introduction

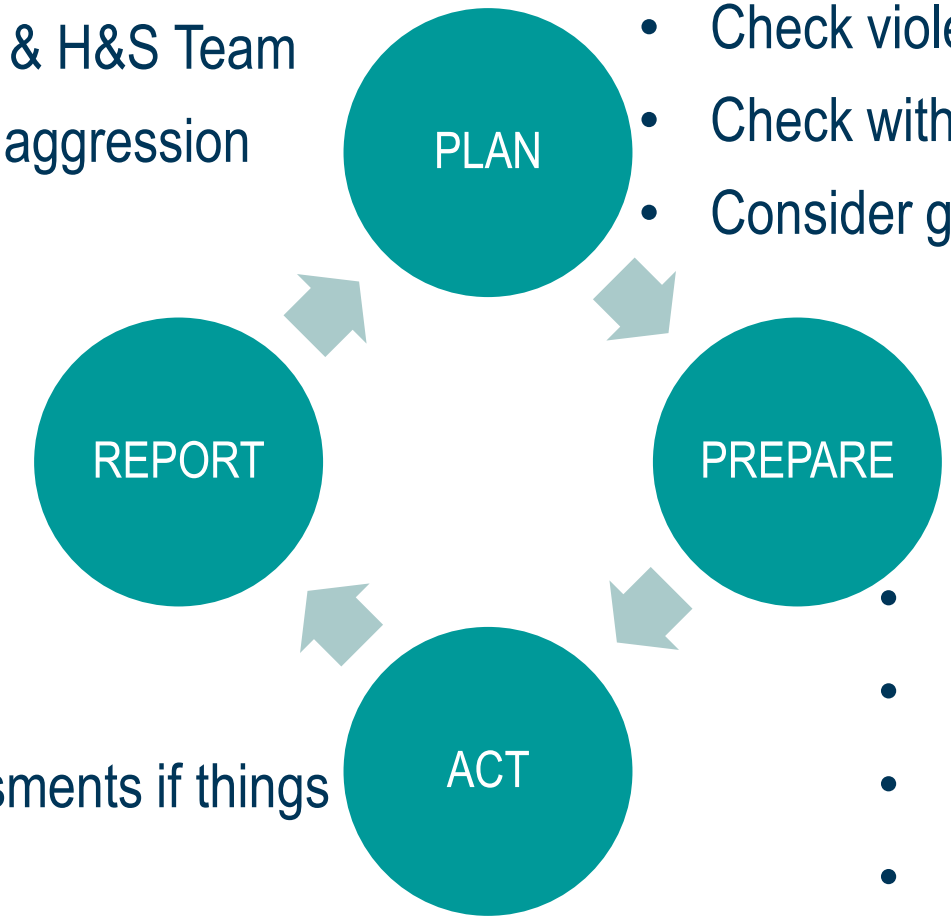
Staying safe – safety first

The Health and Safety of staff is of paramount importance. Due to the nature of the waste regulatory work, there are risks that staff will face on a daily basis when undertaking their duties.

In particular the risk of violence and aggression from those that are encountered during work, whether it be face-to-face, over the telephone or written correspondence

Managing violence and aggression

- Review site file and any H&S risk assessments
- Check violence & aggression register
- Check with manager re concerns
- Consider going with more staff or police



- Contact your manager & H&S Team
- Update the violence & aggression register

- Have fully charged mobiles
- Reverse park
- Know your exits - position
- Ensure staff know where you are (safety cover)

- Apply a dynamic risk assessments if things change
- If you feel threatened or intimidated, leave
- Contact the police if there is an ongoing risk

Personal Protective Equipment

- High Visibility Jacket
- Safety boots
- Hard hat
- Gloves & Tongs
- Safety glasses
- Mask
- Disposable suit

- Body Camera
- Chem. suit

The Permit (fundamentals not waste specific)

Q1: What is a permit for (from the perspective of the state)?

To set rules to control the operation of an activity that ensure compliance with EU & national regulations.

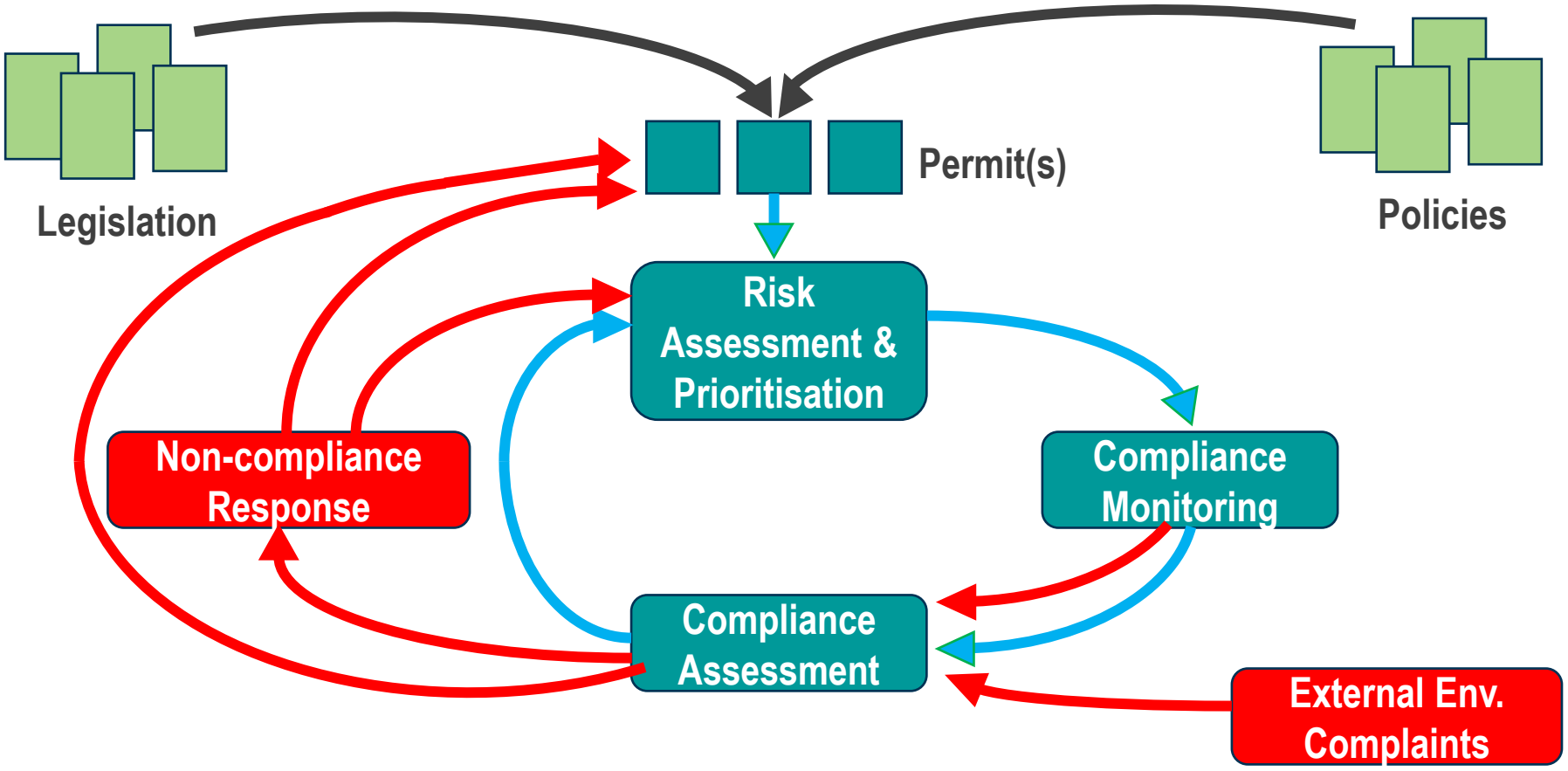
Q2: What is a permit for (from the perspective of the operator)?

To allow the site to operate. To know the specific rules that they need. to operate against.

Q3: Why do we carryout a site inspection?

To ensure the permit (or specific legislation where there is no permit e.g. waste exemption) requirements are being complied with.

The permit drives the start of the operational bit of the regulatory cycle



• Key functions of a waste management permit

1. Regulates site specific waste activities
    - Specifies waste types & volumes
    - Defines operations allowed e.g. storage requirements, treatment option

2. Protects the environment
    - Controls pollution risks and sets emission limits
    - Requires monitoring and reporting

3. Ensures Public Health & Safety
    - Sets safe rules for storage and handling
    - Sets control measures for pest, odour, dust & noise control

Key functions of a waste management permit

4. Sets compliance & monitoring requirements
    - Requires internal controls and exception reporting
    - Sets data reporting requirements (e.g. Waste shipment paperwork)
    - Sets emergency/incident response requirements
    - May dictate competency requirements of staff

5. Supports recycling
    - Ensures clean waste streams for onward recycling
    - Ensures waste to landfill/incineration is minimized

The permit is the basis of our inspection as it holds all the site-specific requirements!

You can use a checklist or inspection template but the numbers etc are in the permit.

Key sections of a waste management permit

1. Management
    - General management conditions such as operating in accordance with a site operations plan (including operating hours)

2. Operations
    - Permitted activities
    - Site requirements (e.g. concrete, bunds etc)
    - Waste acceptance (type, quantities, specific excluded wastes)
    - Operating Techniques

3. Emissions and monitoring
    - Water, dust, odour, noise & vibration
    - Pests & fire prevention

Key sections of a waste management permit

4. Information
    - Records, reporting & notification

5. Annexes
    - Waste types & EWC codes
    - Site boundary and site plans

2. Waste management control in Lithuania (a discussion)

Understanding the battlefield

Q1. How many (approximately) waste management sites are there in Lithuania?

Q2. Do the waste management sites all have permits?

Q3. Describe the quality of the permits? How old are they?

Q4. Do the inspectors have easy access to all the permits? Do the permitters get feedback on the applicability & effectiveness of a specific permit?

Understanding the battlefield

Q5. How long do waste management inspections last (approximately)?

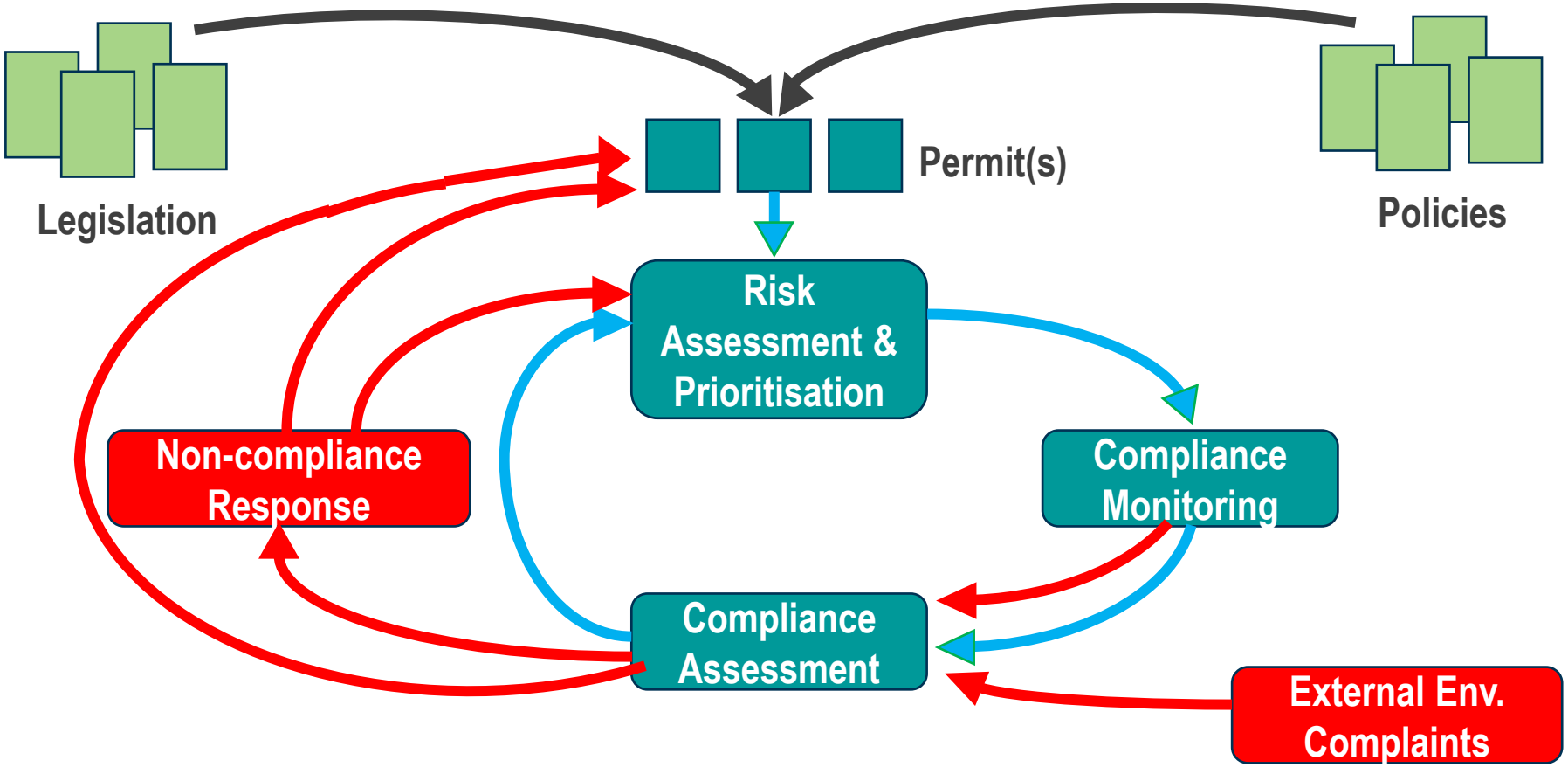
Q6. How long are inspection reports?

Q7. Describe the operator's level of understanding with respect to what they need to do to comply with the permit?

Q8. Describe the level of compliance with permit requirements?

Q9. Describe your primary response to identified non-compliance?
Is it effective?

The regulatory cycle –working together



Permitter Inspector

Team Lithuania

3. Key risks from solid waste recycling installations

Primary issues

1. Unsegregated waste
2. Inappropriate storage
3. Poor site management
4. Fire *(Ira covered this yesterday morning)*
5. *Odour control*

Unsegregated waste – poor containment

Skip Hire

Unsegregated waste – poor containment

Civic Amenity Site

Mitigation – Signage & clear separation

Civic Amenity Site

Inappropriate Storage

Lead Acid Batteries

Mitigation – Correct Storage

Civic Amenity Site

Inappropriate Storage

Fridge/Freezers

Inappropriate Storage

Waste Oil

Inappropriate Storage

Waste Oil

Inappropriate Storage

Waste Oil

Poor maintenance (Could also potentially be deliberate!)

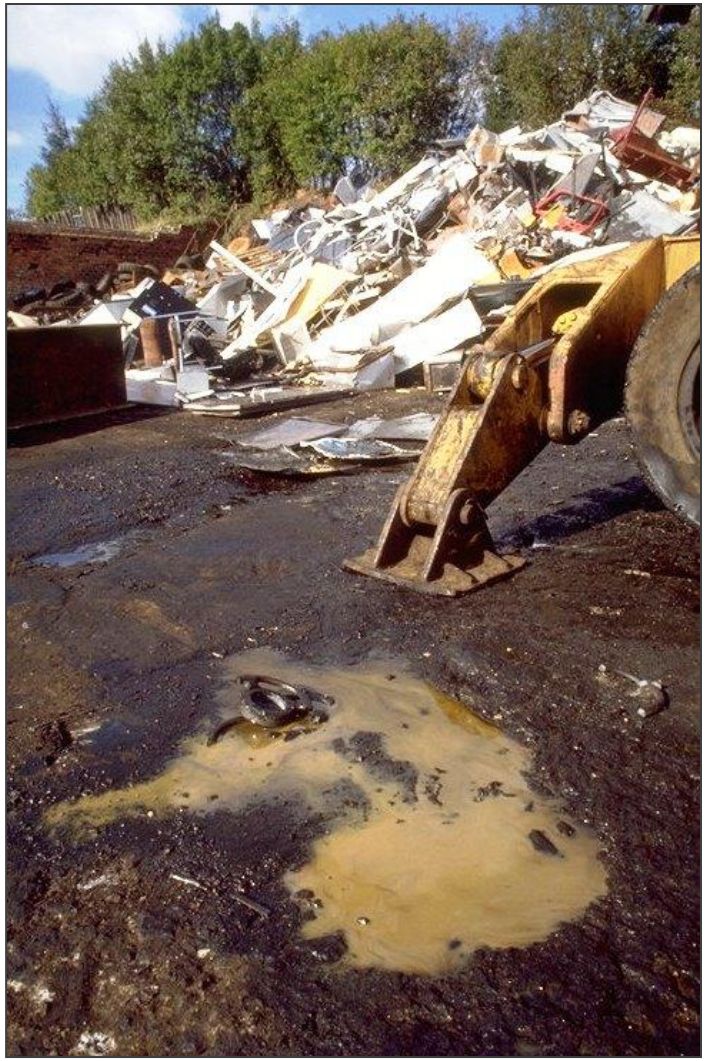
Waste Oil

Fully Bunded?

Inappropriate Storage (& Treatment)

Engine Blocks & Parts

Poor site management



Spillages

Poor surface water control & inappropriate surface

Poor site management

Poor litter control
+Increased vermin risk

Open burning of waste
‘I Suspect most fires are deliberate’

Sources of odour – process design & maintenance

Equipment Failure

Site integrity

Sources of odour – need to control storage

Raw material storage

Waste storage

Sources of odour – need to contain process air

Poor process design: doors left open to facilitate operation, no ‘airlock’ system, no negative pressure system

Sources of odour – control the quality of raw materials

Age of raw materials

Secondary source

Sources of odour – effluent treatment

Lack of control of the treatment process

4. Building a checklist using a MRF as an example

Understanding your approach

Q1. How would you approach a waste inspection (what would you do)?

Q2. Would you use any different approaches based on a difference in activity type?

Q3. What document do you inspect against?

Pros & Cons of checklists

PROs

- Act as an aide memoir
- Consistency & standardisation
- Efficiency & time saving
- Documentation & record keeping
- Potentially useful for seeing change over time
- Can be used to support training & guidance

CONs

- Potential over reliance
- Rigidity
- Can lead to a false sense of security
- Doesn’t replace adequate training
- Doesn’t support critical thinking
- Not sufficient for evidential purposes

Checklist design principles

Alignment

- Link to permit
- Link to specific legislative requirements

Structure & Organisation

- Use a logical flow
- Can prioritise key areas

Usability

- Clear language
- Easy to use (especially if digital)

Flexibility

- Space for comments
- Allow ability to capture other identified issues or things discussed with the operator e.g. future devlopments

Generic or activity specific checklist?

There is no right or wrong answer although there is a lot more effort in drawing up activity specific!

MRFs can be:

- Clean (sorting through pre-segregated recyclate)
- Dirty (sorting through un-segregated waste)
- Low tech (segregation by manual labour)
- High tech (segregation by machinery)

Manual picking station

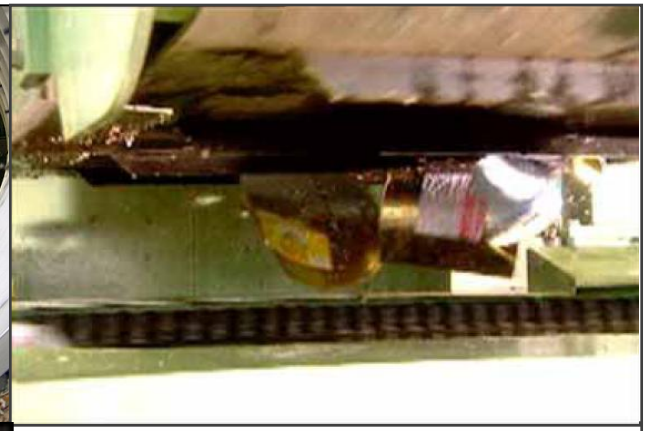
Benefits	Concerns
Cheap to run	Labour intensive
Consistent separation	Health & safety concerns
Easy to identify key materials	
Easy to spot contaminants	

Clean MRF

Dirty MRF

High Tech MRFs – automated separation

Trommel Screen (based on size)



Magnetic Separation (ferrous metals)

Eddy Current Separation (Aluminium)

Optical Separation - NIR (plastic & cartons)

MRF – What to look out for

- Inspection of incoming waste
- Unauthorised acceptance of waste, quarantine area
- Site security – metal theft,
- Waste stored within correct bays, no cross contamination. How are fines disposed of?
- Excess storage – Stockpiling of segregated waste shows signs of a larger problem
- Areas cleared of waste to keep rotation of waste
- Maintenance of infrastructure and machinery – shows operator has good working practices
- Spillages dealt with
- No burning or evidence of fires
- Pest controls – Household waste high likelihood of contamination attracting flies, birds, vermin. How do they deal with this?
- Dust controls – Using a trommel can give rise to dust, check abatement

- Odour – Household waste can sit for awhile prior to deposit at site, if stored too long at site this can give off strong odours
- Waste escaping the site boundary or being tracked off by vehicles – windblown waste/litter
- Record keeping – waste tracking and logging

Potential checklist criteria for a generic list

1. Gates & fencing
2. Security
3. Notice boards
4. Site office
5. Site diary
6. Management & staffing
7. Transfer notes
8. Consignment notes
9. Waste analyses/sampling
10. Weighbridge
11. Wheel cleaning
12. Internal roads & surfaces
13. Surface water & drainage
14. Lighting
15. Waste reception
16. Waste operations
17. Tanks & bunding
18. Waste types
19. Litter screens
20. Plant/machinery

Inspection pointers

Note:

- Always follow-up significant non-compliance
- Most waste management inspections (non-IED) probably only need to take 2 to 3 hours
- Better to focus on significant areas of risk
- Better to inspect more often rather than inspect for longer
- Inspection reports should be short and to the point. Any longer and they will not get read

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