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PRESENTED IN COOPERATION WITH



LANDFILL OPERATIONS & WORKING FACE PROCEDURES

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ASSISTANT LANDFILL SUPERINTENDENT

DEVELOPMENT AUTHORITY OF THE NORTH COUNTRY

MATERIALS MANAGEMENT FACILITY

2



A yellow bulldozer is shown in the process of compacting a large pile of garbage at a landfill. The bulldozer is positioned on the right side of the frame, facing left, with its front blade partially buried in the trash. The garbage consists of various types of waste, including plastic bags, bottles, and other debris. The background features a clear blue sky with scattered white clouds. The overall scene depicts the 'working face' of a landfill, where waste is being managed and compacted.

Working Face Procedures

OUR RESPONSIBILITIES

- **COMPLY WITH ALL REGULATORY REQUIREMENTS**
- **PROTECT THE ENVIRONMENT**
- **PROVIDE EXCELLENT CUSTOMER SERVICE**
- **MAXIMIZE AIRSPACE**
- **OPERATE WITHIN BUDGET**



Access Control



08.03.2017 13:25



ACCESS CONTROL

- **CONTROL ACCESS OF ALL PERSONS AND VEHICLES ENTERING THE SITE**
- **WASTE SCREENING**
- **VERIFYING HAULER PERMITS**
- **WEIGHING IN THE WASTE**
- **CHARGING FEES**
- **RADIATION DETECTION**
- **DIRECTING CUSTOMERS TO WORKING FACE**

WASTE HANDLING REQUIREMENTS

- **CORRECT PERSONNEL AND STAFFING**
- **THE RIGHT EQUIPMENT**
- **EFFECTIVE PLAN**
- **SUPERIOR CUSTOMER SERVICE**
- **CONTINGENCY PLAN – (W.C.P.G.W.)**

COMMERCIAL HAULERS



06/03/2009 13:42

OR: THE “DO IT YOURSELF”



SCALE OPERATIONS

- **COLLECTING SCALE WEIGHTS**
- **SCALE SOFTWARE**
 - **RECORD KEEPING & TRACKING**
 - **REPORTING**
 - **BILLING**
- **COMMUNICATION SYSTEM (PRIVATE RADIO, CITIZEN BAND RADIO, CELL PHONES).**



Road Network

SITE ROADS

- **PROVIDE CUSTOMER ACCESS**
- **PROVIDE EQUIPMENT ACCESS**
- **TEMPORARY VS. PERMANENT**
- **PAVED / UNPAVED**
- **PROVIDE ALL WEATHER DURABILITY**
- **MAINTENANCE REQUIRED**





WEATHER

- **ONLINE WEATHER INFORMATION TO PROVIDE FORECASTING AND WARNING**
- **HAZARDOUS WEATHER DETECTION AND WARNING SYSTEM**







Waste Handling & Compaction



FIRST LIFT

USE SOFT TRASH 5– 10' LIFT

THE WORKING FACE



REMEMBER:

- **WE SELL AIRSPACE BY THE TON**
- **WE CONSUME AIRSPACE BY THE CUBIC YARD**

HOW IMPORTANT IS COMPACTION?



Airspace Gain Chart Based On 280,000 Tons Per Year

Airspace Value @ \$35.00 per cubic yard

| % | Lbs Per Yd³ | Cu Yd Per Ton | Cu Yd Req | Airspace Gain Yd³ | Value of Add. Airspace |
|----------|-------------------------------|----------------------|------------------|-------------------------------------|-------------------------------|
| 0% | 1,600 | 1.25 | 350,000 | 0 | 0 |
| 1% | 1,616 | 1.24 | 346,535 | 3,465 | \$121,287 |
| 2% | 1,648 | 1.21 | 339,740 | 10,260 | \$359,105 |
| 3% | 1,698 | 1.18 | 329,845 | 20,155 | \$705,442 |
| 4% | 1,766 | 1.13 | 317,158 | 32,842 | \$1,149,463 |
| 5% | 1,854 | 1.08 | 302,055 | 47,945 | \$1,678,060 |

WASTE DENSITY CONTROL

- **LIFT THICKNESS CONTROL**
- **GLOBAL POSITIONING SYSTEM (GPS)**
- **ON BOARD COMPACTION MONITORING AND CONTROL SYSTEM.**
- **TRADITIONAL SURVEYING**



EQUIPMENT

EQUIPMENT CONSIDERATIONS

- **SPECIALIZED LANDFILL EQUIPMENT**
- **STANDARD CONSTRUCTION EQUIPMENT**
- **ASSET MANAGEMENT PROGRAMS**
- **PURCHASE VS. LEASE**
- **SIZING FOR VOLUME (WASTE & LEACHATE)**
- **PLAN FOR REPLACEMENT COSTS (RESERVE FUND)**

WASTE HANDLING EQUIPMENT PRIMARY EQUIPMENT

- **WASTE DOZER (S)**
- **SLOPE DOZER**
- **LANDFILL COMPACTOR (S)**
- **BACKHOE AND/OR EXCAVATOR**

WASTE DOZER

- **EROPS EQUIPPED**
- **PRESSURIZED CAB WITH A/C**
- **WASTE HANDLING PACKAGE**
- **CAT D6R CLASS OR EQUIVALENT**

WASTE HANDLING TECHNIQUES

- **WASTE HANDLING DOZER PUSHES TO COMPACTOR**
- **COMPACTOR SPREADS AND COMPACTS**
- **THIN LIFTS (1 TO 2 FT.)**
- **MAINTAIN FLAT WORKING SLOPES (1 TO 5 TO 1 TO 3)**
- **BUILD SMALLEST DAILY CELL NEEDED.**
- **WORK UP VS. DOWN**
- **3 TO 5 PASSES**



WASTE DOZER



LANDFILL COMPACTOR

- **HEAVIER IS BETTER**
- **100,000 – 126,000 POUND CLASS**
- **SERVICE AND SUPPORT**
- **WHEELS AND TEETH**

BACKHOE/HYDRAULIC EXCAVATOR

- **DIGGING TRENCHES FOR SPECIAL WASTE**
- **DIGGING OUT FROZEN OR STUCK LOADS**
- **LOADING COVER MATERIAL INTO HAUL TRUCKS**
- **APPLYING TARPS**





SUPPORT EQUIPMENT

- **SMOOTH DRUM VIBRATORY ROLLER**
- **SHEEPS FOOT ROLLER**
- **WATER TRUCK**
- **GRADER**
- **ARTICULATED HAULERS**
- **TANDEM AXLE DUMP TRUCK W/PLOW & SANDER**
- **FIELD SERVICE TRUCK**
- **SWEEPER TRUCK**

SMOOTH DRUM VIBRATORY ROLLER

- **DRUM AND WHEEL DRIVE**
- **FOAM FILLED TURF TIRES**
- **TYPICALLY USED FOR COARSE FILL, GRANULAR MATERIALS AND OTHER MIXED SOILS**
- **SMOOTHING WASTE BEFORE COVER APPLICATION**
- **MAINTAINING ROADS AND TIPPING AREA**
- **SEALING ROADS AND COVER MATERIALS**

SHEEPS FOOT VIBRATORY ROLLER

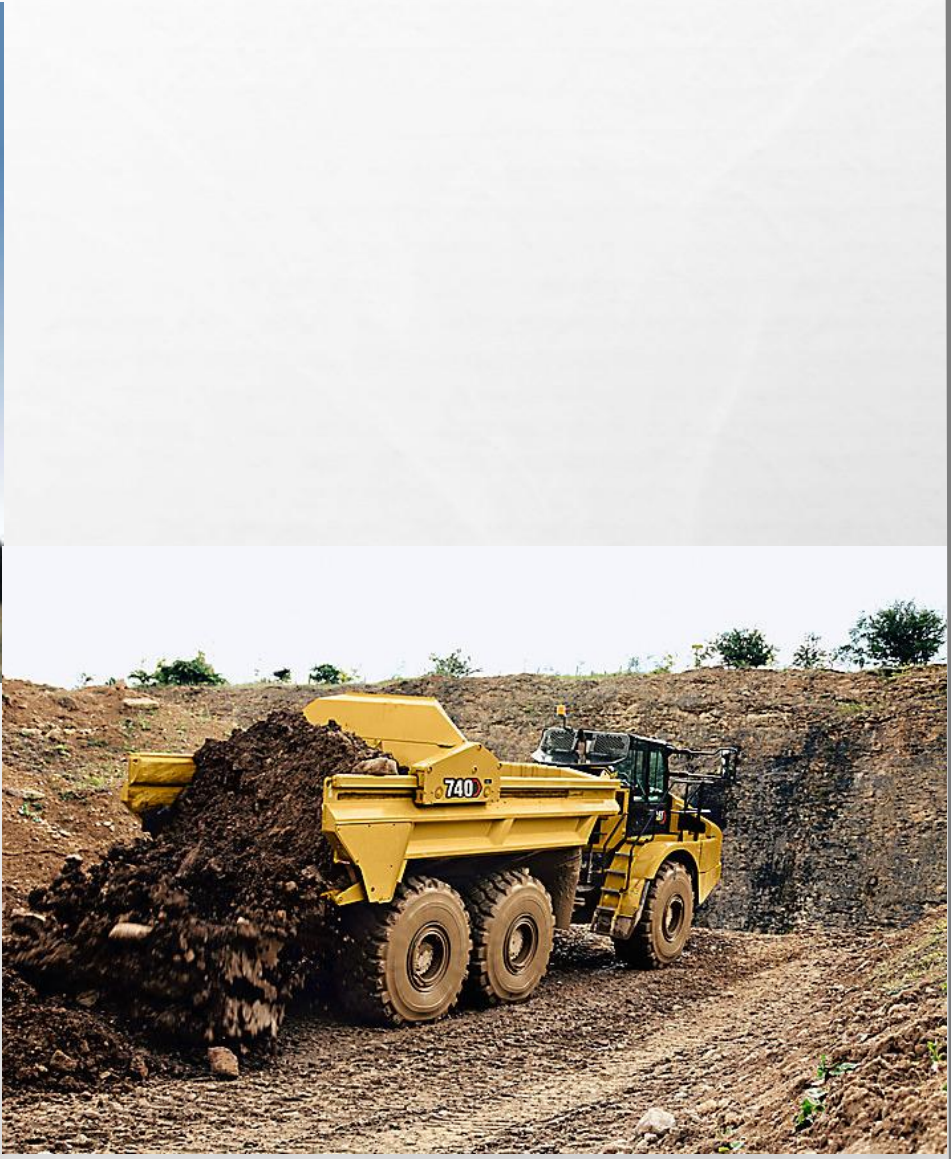
- **DRUM AND WHEEL DRIVE**
- **CHEVRON TIRES**
- **BUILDING ACCESS AND HAUL ROADS**
- **FOR KNEADING AND COMPACTING FINE GRAINED SILTS OR CLAYS**
- **COMPACTING INTERMEDIATE COVER**
- **COMPACTING FINAL CAP MATERIAL**



ARTICULATED HAULERS

- **ARTICULATED HAULERS**
- **ALL WEATHER TRACTION AND MOBILITY**
- **EFFICIENT, COST EFFECTIVE OPERATION**
- **LOW MAINTENANCE HAUL ROADS**
- **EJECTOR STYLE VS. DUMP BOX**







Cover

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DAILY COVER

- **THIS IS A REGULATORY REQUIREMENT NOT AN OPTION**
- **IT PROVIDES ODOR CONTROL**
- **IT PROVIDES VECTOR CONTROL**
- **IT ASSISTS WITH FIRE PREVENTION**
- **IT HELPS CONTROL LITTER**
- **IT REDUCES THE POTENTIAL FOR SCAVENGING**

COVER TYPES

- **DAILY COVER (6" COMPACTED SOIL) OR TARPS**
- **ALTERNATE OPERATING COVER (AOC)**
 - REQUIRES REGULATORY APPROVAL**
- **TARPS**
- **INTERMEDIATE COVER**
 - REQUIRED IN AREAS - AFTER 30 DAYS**
 - 12" COMPACTED SOIL / GEOMEMBRANE**
- **FINAL COVER (ENGINEERED SYSTEMS).**
- **ASBESTOS: COVER WITH 3' TRASH OR 18" SOIL.**

CONSIDERATIONS

- **AIRSPACE CONSUMPTION**
- **COST OF MATERIAL**
- **REVENUE GENERATION (PCS, ETC.)**
- **DURABILITY**
- **APPLICATION METHOD & COST**
- **AOC'S**

TYPICAL AOC'S

- **ASH (INCINERATOR, POWER PLANT)**
- **SLUDGES (POTW, INDUSTRIAL)**
- **SLURRYS (CEMENT, CLAY)**
- **FOAMS**
- **SHREDDED C&D**
- **CONTAMINATED SOILS**

EXCAVATOR APPLIED TARP



Tarping Machine



NOBODY WANTS TO DEAL WITH:

FIRES

DO YOU HAVE A PLAN FOR FIGHTING LANDFILL FIRES?



- **DON'T FIGHT MAJOR FIRES**
- **USE PROPER TECHNIQUES**
- **PUSH AWAY & COVER W/ DIRT AND WATER.**

A wide-angle photograph of a landfill site. The foreground and middle ground are filled with a vast expanse of discarded waste, including plastic bags, crumpled paper, and other debris. In the background, a yellow CAT bulldozer is visible, partially obscured by the large blue text. The sky is bright blue with scattered white clouds. The word "SAFETY" is superimposed in large, bold, blue, sans-serif capital letters across the center of the image.

SAFETY

PERSONAL SAFETY EQUIPMENT (PPE)

- **STEEL TOE, PUNCTURE RESISTANT BOOTS**
- **PUNCTURE RESISTANT GLOVES FOR CLEANING TRACKS**
- **HEARING PROTECTION**
- **EYE PROTECTION**
- **HI VIS- SAFETY VESTS**
- **HARD HATS**

SAFETY PLAN CONSIDERATIONS

- **ROUTINE SAFETY TRAINING**
- **FIRST RESPONDERS (ANNUAL DRILLS)**
- **FIRST AID SUPPLIES**
- **CPR TRAINING**
- **BASIC FIREFIGHTING TRAINING**
- **DEFIBRILLATOR UNIT ON SITE**

VEHICLE & EQUIPMENT SAFETY

- **HIGH VISIBILITY PAINT/MARKING SCHEMES**
- **LIGHTING**
- **BEACONS AND/OR STROBES**
- **BACK UP ALARMS**
- **ON BOARD CAMERA SYSTEMS**
- **RADIO COMMUNICATION SYSTEMS**
- **CITIZENS BAND (CB) RADIOS**

LANDFILL CONTROLS



CONTROLS

- **WASTE SPOTTER (LIMITED USE)**
- **ODOR CONTROL**
- **LITTER CONTROL**
- **MUD TRACKING TO OFFSITE HIGHWAYS**
- **DUST CONTROL**
- **EROSION CONTROL**
- **LEACHATE SEEPS**
- **VECTORS (BIRDS & RODENTS)**

Controlling Litter





- **Prevent Erosion**
- **Limit Run-off Velocity**
- **Control Odors**

- **Reduce Open Areas- Get It Covered(< 20' h)**
- **No more than 5 Acres Open**



BAD EROSION CONTROL



GOOD CONTROLS



STABILIZE AS SOON AS POSSIBLE



OUTSIDE SLOPES

- Constructed to 3 on 1, OR 33 degrees, OR 3:1, OR 33%. However you say it.
- Prevent 'lens affect' for leachate seeps
- Cover and seed as soon as possible

TOO STEEP ?



Permanent Capping of Cell 7 west slope



JUST RIGHT!



Cover

Inspection

Roads

Compaction

Access

Controls

Safety

Control

Equipment

Weather

**IT
WILL ALL
COME
TOGETHER...**

**WHEN YOU
HAVE
TEAMWORK**

A photograph of a pond with a grassy embankment and a chain-link fence topped with a blue safety net. The word "Questions?" is overlaid in large blue text. The scene is set outdoors under a clear blue sky. The pond's surface reflects the fence and the sky. The embankment is covered in green grass, and there is a small rocky area near the water's edge. The fence runs along the top of the embankment, curving away into the distance. The text "Questions?" is centered in the middle of the image, rendered in a bold, blue, sans-serif font with a slight drop shadow.

Questions?