



City of Grand Island

Tuesday, October 11, 2016

Council Session

Item G-8

#2016-247 - Approving Purchase of a New Landfill Compactor for the Solid Waste Division of the Public Works Department

Staff Contact: John Collins, P.E. - Public Works Director

Council Agenda Memo

From: Jeff Wattier, Solid Waste Superintendent

Meeting: October 11, 2016

Subject: Approving Purchase of a New Landfill Compactor for the Solid Waste Division of the Public Works Department

Presenter(s): John Collins PE, Public Works Director

Background

The Solid Waste Division of the Public Works Department has one landfill compactor that is used on a daily basis for spreading and compacting solid waste at the landfill. The current landfill compactor is four years old and has approximately 9,000 operating hours.

This machine is a front-line piece of equipment and is vital to the daily operations at the landfill. It is very important to have this unit operating day-in and day-out to ensure continual landfill operations.

The current landfill compactor will be sold back to NMC, Inc. of Doniphan, NE for \$256,000.00 through the guaranteed repurchase agreement submitted with their bid at the time of the purchase.

Discussion

The purchase of a new landfill compactor was approved in the FY2017 budget. The Grand Island City Council approved the use of the Houston-Galveston Area Council Buying Group (HGAC) with Resolution 2013-193.

To meet competitive bidding requirements, the Solid Waste Division obtained pricing for a new landfill compactor from the HGAC Contract No. EM06-15 awarded to Humdinger Equipment, Ltd. of Lubbock, TX.

Public Works staff is recommending the purchase of a 2017 Tana ECO380 landfill compactor from Humdinger Equipment, Ltd. of Lubbock, TX in the amount of \$785,944.00.

Alternatives

It appears that the Council has the following alternatives concerning the issue at hand. The Council may:

1. Move to approve
2. Refer the issue to a Committee
3. Postpone the issue to future date
4. Take no action on the issue

Recommendation

City Administration recommends that the Council approve the purchase of a new landfill compactor from Humdinger Equipment, Ltd. of Lubbock, TX in the amount of \$785,944.00.

Sample Motion

Motion to approve the purchase of a new landfill compactor from Humdinger Equipment, Ltd. of Lubbock, TX in the amount of \$785,944.00.

**THE MOST PRODUCTIVE
COMPACTOR ON THE MARKET**

Unique design

Twin drums Fewer passes, smooth
and dense surface

Rigid frame Best crushing force

Crushing teeth Optimized size, shape
and number for optimized spreading and
crushing of waste

TANA ProTrack® To minimize downtime
and improve cost analysis



CRUSHING FORCE

TANA E380eco Landfill Compactor

GENERAL INFORMATION

Weight	38 000 kg
Total length	9 050 mm
Total width	4 500 mm
Total height	4 320 mm
Wheel base	4 050 mm
Ground clearance	890 mm
Length without dozer blade	7 430 mm
Width without dozer blade	4 390 mm
Inside turning radius	3 310 mm
Driving speed ranges	0–5 km/h 0–7 km/h
Maximum crushing force	186 kN

COMPACTION DRUMS

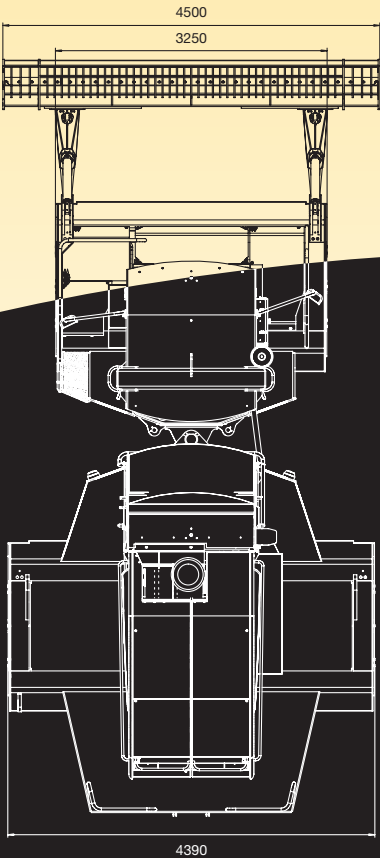
Uniform full width drums with forged solid steel crushing teeth. Adjustable scraper bars on both sides of the drums and adjustable steel wire cutters in the ends of drums.

	Front/rear drum
Crushing/compaction width	2 660 mm/3 800 mm
Diameter including crushing teeth	1 620 mm/1 620 mm
Number of crushing teeth	80 pcs/110 pcs
Height of crushing teeth	200 mm/200 mm
Number of scraper bars	14 pcs/20 pcs
Number of wire cutters	2 pcs/4 pcs

DOZER BLADE

The dozer blade is operated with two hydraulic cylinders and it is equipped with two arms. Arm joints are with hardened pins and spherical bearings.

- Width 4 500 mm
- Height 1 750 mm
- Movement above ground level 1 170 mm
- Movement below ground level 150 mm
- Upper part of blade: trash screen
- Bolt-mounted reversible cutting edges



FRAME

The frame is constructed of two modular drum frames connected together with a longitudinal upper frame. The drum frame acts as a shell around the drum, which helps to prevent waste raising to the upper parts of the machine from below.

The upper frame is equipped with center point articulated steering operated with two hydraulic cylinders.

- Articulation links are equipped with hardened pins and spherical steel bearings
- The angle of articulation to the left or right is 40 degrees

SERVICE PLATFORMS AND PROTECTION

Service platforms and steps are equipped with banisters and anti-slide surfaces. Engine and powerpack are protected with lockable hood (bonnet). Opening of hood is made easier by using wind hooks.

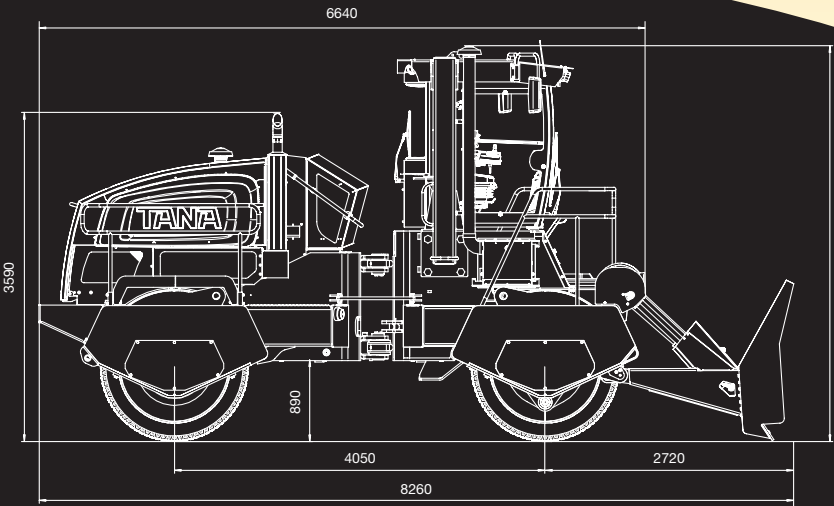
VANDALISM PROTECTION

- Lockable cabin, engine compartment and fuel tank filling cap
- Electronic key for ignition

ENGINE

- Cummins QSX15-C450
- Turbo charged, 6 cylinders in line, water-cooled, after-cooled, four-stroke diesel engine
 - Fulfills U.S. EPA Tier 4 (f), CARB Tier 4 and EU Stage IV non-road emission certificates
 - Maximum power: 500 BHP (373kW) @ 1 800 RPM
 - Power rating: 450 BHP (336kW) @ 2 100 RPM
 - Maximum torque: 2 305 Nm (1 700lb-ft) @ 1 400 RPM

- Engine equipment
- Attachment to the frame with vibration and noise damping rubber mounts
 - Service indicator
 - Dry-type air cleaner with replaceable primary and safety element
 - Fuel filter and water separator
 - Oil filter 1 pc
 - Radiator + separate charge air cooler
 - Aftertreatment system



CABIN AND CONTROLS

Equipment

- Pressurized, heat and sound insulated cabin with cabin lights
- Insulation materials in accordance with ISO 3795
- Air-suspended swivelling operator's seat with head rest, built-on controls, seat heating and seat belt
- Laminated safety glass windows
- Socket for mobile phone charger, radio/CD/USB player
- Front and rear windshield intermittent wipers and washers, suncover in front
- Heater and A/C unit
- Emergency exit, lockable door, shelf and lockers, external rear window mirrors, foot support, inside mirror
- Replaceable cabin air filters
 - pre-filter grade EU3
 - micro filter grade EU7, grade EU14 (option)
 - active carbon filter (option)

Gauges included in TANA Control System (TCS)

- Engine oil pressure, temperatures for engine intake manifold, engine oil and hydraulic oil, coolant and hydraulic oil
- Final drive gearbox temperatures
- Fuel level, total fuel consumption
- Voltage, tachometer, boost pressure, engine working hours
- Engine load rate

System warnings in TCS

(indicator light, acoustic warning and alarm log)

- Engine air filter contamination
- Hydraulic oil temperature
- Low hydraulic oil level
- High hydraulic oil contamination
- Fuel level
- Gear box temperature
- Hydraulic oil return line filter clogging
- Charge pressure filter contamination
- Low charge pressure
- Voltage
- In addition to above all the alarms from the diesel engine control module (95 different alarms, including low engine oil pressure, high coolant temperature, etc). Totally more than 500 alarms.

Controls

- Transmission on/off and parking brake
- Emergency shut down
- Ignition switch: power on/off and starting
- Heater and air conditioning, cabin temperature control
- Windshield wipers and washers, lights

Joystick controls integrated in arm-rests

- Return to neutral position automatically when released and all related movements will cease
- Left hand joystick for control of driving speed and direction as well as control of optional bucket and speed range selection by pressing a button
- Right hand joystick for control of steering, dozer blade and horn

ROPS / FOPS

Integrated in cabin structure

- ROPS in accordance with ISO 3471:2008
- FOPS in accordance with ISO 3449:2005

TANA ProTrack®

- Offers on-line information
- Monthly operational reports
- GPS available

TANA ProTrack®



State of the art information management system

Maximum uptime

- Remote access for quicker and more accurate trouble shooting by the distributor and TANA technical support
- Critical alarm notifications to several receivers by e-mail
- Reminders for scheduled maintenance to several receivers by e-mail

Accuracy to cost follow-up through

TANA ProTrack® reports (additional option)

- Monthly operational reports to given e-mails on e.g. working hours, fuel consumption, work load...

TANA ProLoc® (optional)



A smart solution for efficient landfill management

Optimized landfill space usage and efficient volume reduction

- A digitally imported filling plan gives the operator a realtime view of the work process through a colour 3D interface
- Reached compaction level is indicated by coloured squares

Profitability and remarkable savings

- No unnecessary compaction passes means up to 12 % less fuel consumed and remarkably higher compaction rate
- Machine uptime is maximized for efficient operation as idle machine time and unplanned transfers decrease
- All data is sent to TANA ProTrack® where reports can be generated and combined with other gathered operational information
- Provides for an even surface and uniform density on the entire landfill

Effortless use

- Clear, colour touch screen with Windows-based software
- Online downloading of work plans and software updates
- Remote connection enables trouble-shooting and problem solving
- Follow-up from computer display wherever internet connection is available



Landfill Compactor

POWER TRANSMISSION

- Closed circuit, hydrostatic transmission
- Separate systems for both drums
- Two driving speed ranges
- Control of driving speed and direction with one lever
- Stepless speed control

Pumps

- One tandem pump arrangement
- Variable displacement axial piston pumps with electrical proportional control

Motors

- Three variable displacement plug-in motors

Cooling of hydraulic system

- Air-operated oil cooler
- Openable air filtration screen

Hydraulic oil filtration

- Return line filter and two charge pressure filters, hydraulic oil filling filter

Final drive gear boxes

- Transmits hydraulic output to the drums
- Three-stage planetary gearboxes (2 pcs)
- Integrated hydraulic oil pressure released multi-plate parking brake
- Splash lubrication system

BRAKES

- Service brakes: hydrostatic transmission acts as service brakes, separate circuits for both drums
- Parking/emergency brakes: hydraulic oil-released, spring-actuated multi-plate parking brake integrated in planetary gear boxes

AUXILIARY HYDRAULICS

Open circuit system with electro-hydraulic load sensing (LS) control.

Pump

- Variable displacement axial piston pump

Directional control valve

- Electro-hydraulic proportional control

HYDRAULIC OIL TANK

The hydraulic oil tank is located inside the engine hood

- Electrical filling pump with filter
- Oil level sensor with alarm
- Breather filter

FUEL TANK

The 760 l tank is located inside the upper frame under the operator cabin

- Lockable filling cap
- Service hatch
- Suction strainer
- Drain valve
- Level sensor with alarm

UREA TANK

The 56 l tank is located inside the rear frame. It is equipped with a suction strainer and level sensor with alarm.

ELECTRICAL EQUIPMENT

- 24 VDC system
- Batteries 12 V 180 Ah, 2 pcs
- Lights: front 4 pcs, rear 4 pcs
- Horn
- Socket for hand light in engine compartment
- Back-up alarm, main circuit breaker, voltage reducer for radio

For details, please contact your local distributor or visit the manufacturer's web page at www.tana.fi

Weights and measurements are given within normal tolerances. Manufacturer reserves the right to alter the above as necessary. Some features shown may be optional and not standard.



TANA compaction drums – two full width drums with forged solid steel crushing teeth.

TANA
From Waste to Value®

Tana Oy

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Fax +358 20 7290 261
E-mail: mail@tana.fi

Your local TANA distributor:

RESOLUTION 2016 - 247

WHEREAS, the Houston-Galveston Area Council Buying Group was utilized to secure competitive bids for a new landfill compactor by the Solid Waste Division of the Public Works Department; and

WHEREAS, the Houston-Galveston Area Council Buying Group Contract No. EM06-15 was awarded to Humdinger Equipment, Ltd. of Lubbock, TX; and

WHEREAS, the Public Works Department has recommended the purchase of the new landfill compactor from Humdinger Equipment, Ltd. of Lubbock, TX for a purchase price of \$785,944.00; and

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF GRAND ISLAND, NEBRASKA, that a purchase order and subsequent payment is authorized for the new Tana ECO380 landfill compactor from Humdinger Equipment, Ltd. of Lubbock, TX and is hereby approved.

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Adopted by the City Council of the City of Grand Island, Nebraska, October 11, 2016.

Jeremy L. Jensen, Mayor

Attest:

RaNae Edwards, City Clerk

Approved as to Form	☐ _____
October 7, 2016	☐ City Attorney