



Phosphate Program – Environmental, Health and Safety (EHS) Department

Heavy Mobile Equipment Safety Program

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1. PURPOSE

To establish a program for operational guidelines and training for heavy mobile equipment as defined by OSHA, MSHA and other regulatory or consensus standards.

2. SCOPE

This program shall cover all Heavy Mobile Equipment and employees in Mosaic Fertilizer LLC Phosphates Business Unit. Contractors operating Heavy Mobile Equipment on Mosaic Fertilizer's property and their employees shall also conform to the same procedures stated in this policy. Heavy Mobile Equipment includes:

Bobcats	Motor Graders	Payloaders
Bulldozers	Off Road Haul Trucks	Street Sweepers
Excavators (and Backhoes)	Pans	Tractors
Gradalls		

3. DEFINITIONS

- 3.1 Attachments – A device that can be attached to a machine to be used for a specific purpose.
- 3.2 Backhoe - An attachment mounted on the back of an industrial tractor which digs, elevates, swings 180 degrees, and dumps material by action of the boom and arm with bucket.
- 3.3 Bobcats – A small skid -steering machine used for moving bulk material, transporting material, or other activities.



- 3.4 Bulldozers - A track driven with a shovel like blade in front for pushing earth, debris, etc.
- 3.5 Designated – A person selected or assigned by the employer or the employer's representative as being qualified to perform specific duties.
- 3.6 Excavators - A self-propelled track driven or rubber-tire mounted machine with an upper structure capable of continuous rotation and which digs, elevates, swings, and dumps material by action of a boom and arm with bucket.
- 3.7 Gradalls – A self-propelled machine (truck or track mounted) with an upper structure capable of continuous rotation and which digs, elevates, swings, and dumps material by action of a telescoping boom with bucket.
- 3.8 Haul Trucks - An off road truck used for transporting and dumping loose material.
- 3.9 Motor Graders - An earthmoving machine used for leveling earth or loose material.
- 3.10 Pans – A rubber tire earth moving machine that quickly scrapes or skims the top soil surface and transports to another location.
- 3.11 Payloaders / Rubber tire loaders - A rubber tire machine with a front mounted bucket used for digging and loading.
- 3.12 Qualified Person – A person who by reason of knowledge, experience, or training is familiar with the operation to be performed and the hazards involved.
- 3.13 Street Sweepers – A machine designed and used specifically for cleaning of roadways and parking areas.
- 3.14 Tractors – A small piece of equipment commonly referred to as a farm tractor or industrial tractor. Tractors do not include rough terrain tractors with permanent fork attachments.
- 3.15 Transport - A tractor trailer with a lowboy used to haul large pieces of equipment.
- 3.16 High Activity Work Zone – Work activity/project taking place within twelve feet of the centerline of the track that has high potential for workers, materials, or equipment to cross into the eight feet minimum clearance zone.

4. REQUIREMENTS

- 4.1 General Operation Guidelines
 - 4.1.1 Only qualified personnel designated by the company shall operate Heavy Mobile Equipment.
 - 4.1.2 Operators of payloaders ("rubber tires") and bulldozers shall have a physical examination and vision check every two years. The physical shall follow the same criteria as required for DOT - Commercial Motor Vehicles.
 - a. Tractors are not included in the operator's biennial physical examination.
 - 4.1.3 Safety must always be the operator's most important concern. The operator must refuse to operate when he knows it's unsafe and consult the supervisor when safety is in doubt.
 - 4.1.4 Heavy Mobile Equipment shall be inspected using the The "Heavy Mobile Equipment Daily Prior-to-Use Checklist" (Appendix A) at the beginning of each shift prior to its use. The supervisor must act on the deficiencies noted to ensure repairs are made and equipment is safe to use.
 - a. All Heavy Mobile Equipment shall have a place to store the Daily Prior-to-Use Checklist.
 - b. The "Heavy Mobile Equipment Daily Prior-to-Use Checklist" (Appendix A) shall be completed by the first operator each shift and shall be inspected and signed by each subsequent operator during the same shift not to exceed 16 hours.
 - 4.1.5 Seat belts shall be worn and properly adjusted at all times while operating Heavy Mobile Equipment.



- 4.1.6 Only the operator shall be permitted to ride equipment with the exception for training or maintenance purposes only, provided the trainer or observer is secured with a seat belt or safety harness and lanyard of appropriate length.
- 4.1.7 The operator shall completely walk around the equipment and clear the area of personnel and obstructions before operating Heavy Mobile Equipment.
- 4.1.8 Engines shall not be started unless gears are in neutral or park and the master clutch disengaged if so equipped.
- 4.1.9 Mount and dismount equipment correctly. Do not jump off Heavy Mobile Equipment. Face equipment when mounting or dismounting. Maintain three points of contact at all times. Hands shall be free of materials.
 - a. Before an operator dismounts from Heavy Mobile Equipment, the brakes must be set, gears placed in position to prevent equipment movement, all attachments lowered to the ground and shut the engine off.
 - b. The special instructions available in the operator's manual on shutdown and safety consideration shall be followed on diesel equipment.
- 4.1.10 All equipment left unattended at night, adjacent to public roadways in normal use, or adjacent to construction areas where work is in progress, shall have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors to identify the location of the equipment.
- 4.1.11 When parked on a grade and left unattended, the wheels of Heavy Mobile Equipment shall be either chocked or turned into a bank. On tracked Heavy Mobile Equipment, the blade or bucket should be lowered to the ground.
- 4.1.12 Prior to moving Heavy Mobile Equipment at any time, audible warnings above the surrounding noise level should be sounded or other effective means to warn all persons who could be exposed to a hazard from the equipment should be used.
- 4.1.13 Operation near drop-offs:
 - a. Equipment being operated along the edge of pits, material piles or draw holes shall be operated perpendicular to the drop-off at a safe distance determined by the nature of the material involved.
 - b. Equipment being operated on an engineered surface (ex. dams, gyp dikes) may be operated parallel to the drop-off.
- 4.1.14 Heavy Mobile Equipment, traveling on bi-directional roads, carrying loads that project beyond its sides or 4 feet beyond the rear shall have warning flags at the ends of projection. Under conditions of limited visibility these loads shall have a warning light at the end of the projection. Flags or lights shall be attached to the end of the projection or be carried by persons walking beside or behind the projection.
- 4.1.15 The maximum speed of travel shall depend upon the load being carried, current road, weather, and traffic conditions.
 - a. Limit speed to maintain complete control over the machine.
 - b. Equipment operators shall not exceed the posted speed limit.
- 4.1.16 Heavy Mobile Equipment shall come to a complete stop at blind corners and before entering doorways. The horn shall be sounded before proceeding.
- 4.1.17 Headlights shall be turned on at all times when operated at night, inclement weather, or inside any of the storage buildings.
- 4.1.18 Operators should keep eyes forward and the load should not block view of path. If load is blocking view the operator should back up with load.
- 4.1.19 No person shall work or pass under elevated forks, loads, blades or buckets unless properly blocked.

- 4.1.20 No person should ever approach Heavy Mobile Equipment until they communicate with mobile equipment operators and receive confirmation from the operator indicating the operator's awareness of their presence.
- 4.1.21 Buckets, forks, or attachments shall be kept as low as possible when traveling.
- 4.1.22 No modifications shall be made to equipment that affects the safe operations of the piece of equipment without the manufacturer's or distributors written approval. If such modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly. In no case shall the original safety factor be reduced.
- 4.1.23 Heavy Mobile Equipment, including attachments, shall not be operated beyond its designed limits.
 - a. Equipment and attachments shall be operated according to the manufacturer's operating manual.
 - b. Decals or placards shall be placed within operator's view, stating load capacities.
- 4.1.24 Operators shall be provided the weight of the load before lifting.
- 4.1.25 Standard hand signal charts shall be posted on machines used for lifting.
- 4.1.26 The operator shall not leave his position at the controls while a load is raised.
- 4.1.27 Raised loads shall be kept clear of all obstructions.
- 4.1.28 Employees shall not ride equipment sleds or loads being moved which are being pushed or pulled.
- 4.1.29 Buckets shall not be used for hoisting personnel or as a work platform.
- 4.1.30 Operators cab shall be clean and free of loose items such as tools, spare parts or personal items that may damage or jam control levers. Cab floor, all windows, controls, steps & handrails should be maintained free of dirt, grease or oils.
- 4.1.31 Insure all safety guards are in their proper position and all safety warning graphics and decals are in place and readable.
- 4.1.32 At no time shall an operator ride in the cab of a transported piece of Heavy Mobile Equipment.
- 4.1.33 The engine shall be shut off and parking brake set during refueling. Smoking is not allowed in the refueling area. This does not apply to diesel powered equipment.
- 4.1.34 Heavy Mobile Equipment working near or around storage piles having the vertical height of the working face of the material more than six (6) feet above the maximum reach of the equipment shall have falling object protective structure (FOPS) guarding. (Additional operating guidelines around storage piles are contained in Material Handling - Storage Procedure.)
- 4.1.35 Refer to the [Phos Water Safety Program](#) for use of flotation devices when working near water.
- 4.1.36 Safe Work Procedures must be utilized while performing work on Heavy Mobile Equipment at all times. Any means that could be used to start the equipment must be removed/isolated and a sign, "Out of Service" (or similar signage), be attached to door or steering mechanism. Prior to entering underneath the equipment, the bucket should be lowered to ground, blocked against motion and the wheels chocked. [See section 5 for Servicing and Repairs.](#)
- 4.2 Heavy Equipment Operations Around Power Sources
 - 4.2.1 Operators shall be alert for buried electrical lines and electrical line indicators in the form of flags or red concrete when performing any type of excavation.
 - 4.2.2 When high-voltage power cables for draglines, pit cars, or mining pumps shall be handled refer to the Electrical Procedure.



- 4.2.3 When Heavy Mobile Equipment is in use near overhead power lines refer to and follow the requirements in the North America High Voltage Lines and Cables Program.
Reference: NA EHS Program – High Voltage Lines and Cables
- 4.3 Heavy Mobile Equipment Operations Around Railroad Tracks
 - 4.3.1 When operating Heavy Mobile Equipment near railroad tracks, they shall be operated in accordance with the recommended minimum clearance of at least 8 feet from the center line of the track. Any work on areas less than 8 feet shall be marked as low clearance area.
 - 4.3.2 In high activity work zones, the minimum clearance zone should be clearly delineated by red barricade tape or equivalent. When there is high potential for workers, materials or equipment to cross into the 8 feet minimum clearance zone, the track should be blue flagged and locked per the Railroad Program lockout procedure.
- 4.4 Bulldozers
 - 4.4.1 The winch cable hook must be secured when the winch is not in use.
 - 4.4.2 Employees must stand clear of winch cables when load is applied.
 - 4.4.3 Personnel guarding shall be provided between the operator and winch.
- 4.5 Excavators
 - 4.5.1 Load charts, permanently affixed in cab, are required when an Excavator is used as a lifting device.
 - 4.5.2 The operator's manual for the particular machine shall be consulted before using an Excavator as a lifting device.
- 4.6 Gradalls
 - 4.6.1 Load charts, permanently affixed in cab, are required when Gradall is used as lifting device, refer to operator's manual.
 - 4.6.2 The operator's manual for the particular machine shall be consulted before using a Gradall as a lifting device.
- 4.7 Haul Trucks
 - 4.7.1 Dump bed vehicles shall be equipped with permanently attached safety bars capable of supporting the fully loaded bed. The vehicle bed shall be secured in the raised position by the supplied safety bars before any part of the body is placed between the raised bed and the frame of the truck.
- 4.8 Motor Graders
 - 4.8.1 Seat belts shall be worn at all times except while standing. When standing a full body harness with lanyard shall be worn with lanyard attached to a proper tie off point.
- 4.9 Payloaders / rubber tire loaders
 - 4.9.1 Load charts, permanently affixed in cab, are required when a payloador is used as a lifting device. Refer to operator's manual for proper use.
 - 4.9.2 The side-boom winch cable hook must be secured at all times when the winch is not in use.
 - 4.9.3 Employees must stand clear of winch cables when load is applied.
 - 4.9.4 The danger area between the front section and rear section (articulating area) of a Payloader shall not be entered at any time while the engine is running, except during maintenance activities when safety struts (mechanical lock) shall be properly engaged.

4.10 Equipment Specific

- 4.10.1 All Heavy Mobile Equipment shall be provided with:
- a. Operators and attachment manuals on the equipment or near its normal place of work for reference.
 - b. Equipment used for lifting shall have posted on the machine:
 - i. A standard hand-signal chart;
 - ii. Maximum load capacities; and
 - iii. All safety decals or placards as required by the manufacturer.
 - c. At least a five pound ABC fire extinguisher mounted on operator's cab, unless equipped with an on-board fire suppression system.
 - d. Seat belts (meeting SAE J386 standard).
 - e. If equipped on the machine, lights shall be maintained in operating condition.
 - f. Slow moving vehicle sign (triangle) if it crosses a public highway.
 - g. Primary walking surfaces of the skid resistant type.
 - h. Back-up / travel alarm if rear vision is impaired. Exception: Dozers not originally equipped and have a clear unobstructed view to the rear.
 - i. Manually operated horns or other audible warning safety devices which shall be maintained in functional condition.
 - j. Roll over protective structures, "ROPS", with permanently affixed identification including:
 - i. Manufacturers or fabricator's name and address.
 - ii. ROPS model number if any.
 - iii. Machine make, model, or series number that the structure is designed to fit.
 - iv. If there is any danger of falling objects hitting the operator, then falling object protective structures - "FOPS" - shall be installed.
 - v. Windows of safety glass or material with equivalent safety characteristics based on the hazard and maintained to provide visibility for safe operation if equipped. Examples include:
 - A. Equipment exposed to water hazards shall have flat tempered glass on at least three sides of the cab.
 - B. Equipment exposed to potential storage pile highwall hazards shall have front impact resistant glass and side glass shall be tempered glass

5 Servicing or Repairs to Rental, Leased, Contractor or Subcontractor Mobile Equipment on Mosaic Property (previously referenced in the Contractor Safety Program)

5.2.1 **Minor repairs and routine maintenance** - servicing, minor repairs, and routine maintenance can be conducted without specific Mosaic point of contact approval. Examples of minor repairs, routine equipment maintenance include (but are not limited to): fluid/filter changes, normal tire and brake work/repair, hydraulic cylinder, hose, belt replacements, battery charging/replacement, replacing alternators/starters, light repairs, handrails/steps and other minor structural work, glass replacement, A/C repair, and bucket teeth/attachment cutting edge replacements.

5.2.2 **Major repairs or non-routine maintenance** - major repairs or non-routine maintenance conducted on-site Mosaic property is prohibited unless specifically approved from the site General Manager (or work location equivalent) or their written designee. A designated Mosaic representative, along with the contractor representative in charge of the affected piece of



equipment, shall assess the safety of repair on-site versus the safety of removal from site. The assessment shall take into consideration such factors as: the hazards associated with loading, and transporting the equipment, work in open weather vs. an enclosed building, and any other risk applicable to conducting the work on-site.

5.2.3 Only trained, qualified personnel authorized to be on site shall be allowed to conduct servicing or repairs to mobile equipment on Mosaic property.

5.2.4 Equipment taken out of service for repairs will be tagged out and a barrier placed with appropriate signage (cones, barricade tape, berms, etc.) that serves to keep unauthorized personnel out of the immediate area. Only trained, authorized personnel will be allowed to enter the demarcated area to inspect and repair the equipment.

5.2.5 All repairs will be done with proper tools, equipment and in accordance with a pre-approved Field Level Hazard Assessment or Safe Work Procedure for that specific task. Major repairs will require a more detailed JSA/Safe Work Plan (generic or existing form) to be completed by the contractor and approved by the Mosaic Supervisor of the affected equipment or designated Mosaic Competent Person.

5.2.6 Repairs will be done following an Equipment Specific Lockout Procedure which will address securing the key, disconnecting the battery, (i.e. Disabling the master switch or the cable connections) and all other pertinent energy control concerns (blocking, chocking, bleeding down, isolation, etc.). The procedure will also address any tasks that will require the motor to be running with reason, risk, exposure and controls. The key and work area will be under the control of the technician or mechanic at all times.

Note: If the equipment manufacturer does not provide a LOTO procedure; the repairing organization shall create one.

5.2.7 When servicing and performing maintenance of mobile equipment, there shall be no “over-riding of interlocks or safety features,” to assure safe and positive control of the machinery is assured while work is being performed.

5.2.8 All elevated work above 4ft will require the use of engineered or manufacturer approved fall protection systems and 100% tie off.

5.2.9 Servicing and repairs must be conducted in areas free of ground control, water or other hazards. Equipment will be relocated, if possible, or additional controls will be put in place to eliminate the hazards.

6. TRAINING

6.1 Only trained and qualified employees shall be permitted to operate Heavy Mobile Equipment. Employees will be required to attend:

6.1.1 A general awareness class.

6.1.2 Equipment Specific Training, as follows:

a. Before being authorized to operate Heavy Mobile Equipment the operator shall have:

i. Been instructed by a Qualified Person in the intended purpose and function of each of the controls.

ii. Read and understood the manufacturer's operating instructions and user's safety rules, or been trained by a Qualified Person on the contents of the manufacturer's operating instructions and users safety rules.



- iii. Understand by reading or having a Qualified Person explain all decals, warnings, and instructions displayed on the Heavy Mobile Equipment.
- 6.1.3 Operators currently operating Heavy Mobile Equipment may be evaluated to verify operating skills to satisfy equipment specific training.
- 6.2 Management responsible for Heavy Mobile Equipment operations must attend a Heavy Mobile Equipment responsibility and safety awareness class.

7. PROGRAM REVIEW

- 7.1 The Phosphates EHS team will review this program annually and change/update as required.

8. INSPECTIONS

- 8.1 Daily: A daily, prior-to-use inspection will be done by each operator on all Heavy Mobile Equipment before each use. Approval of the supervisor is required prior to commencing work if any deficiencies are noted. The supervisor must act on the deficiencies noted to ensure repairs are made and the equipment is safe to use.
- 8.2 Frequent Inspection: The frequent inspection shall be made by a qualified person on the specific make and model of the Heavy Mobile Equipment. Inspection frequency shall be performed during routine PM or at not more than 250-hour intervals.

9. REFERENCES

- 9.1.1 MSHA
 - a. 30 CFR 56.9100 Traffic Control
 - b. 30 CFR 56.9101 Operating speeds and control of equipment
 - c. 30 CFR 56.9200 Transporting persons
 - d. 30.CFR 56.9201 Loading, hauling, and unloading of equipment or supplies
 - e. 30 CFR 56.12071 Movement or operation of equipment near high-voltage power lines
 - f. 30.CFR 56.14000 Definitions
 - g. 30 CFR 56.14100 Safety Defects; examination, corrections and records
 - h. 30 CFR 56.14101 Brakes
 - i. 30 CFR 56.14103 Operators Stations
 - j. 30 CFR 56.14105 Procedures during repairs or maintenance
 - k. 30 CFR 56.14106 Falling object protection
 - l. 30 CFR 56.14130 Roll-over protective structures (ROPS) and seat belts
 - m. 30 CFR 56.14131 Seat belts for haulage trucks
 - n. 30 CFR 56.14132 Horns and backup alarms
 - o. 30 CFR 56.14207 Parking procedures for unattended equipment
 - p. 30.CFR 56.14208 Warning devices
 - q. 30 CFR 56.14209 Safety procedures for towing
 - r. 30 CFR 56.14210 Movement of dippers, buckets, loading booms, or suspended loads.
 - s. 30 CFR 56.14211 Blocking equipment in a raised position
- 9.1.2 OSHA
 - a. 29 CFR 1926.600 Motor Vehicles, Mechanized Equipment, and Marine Operations.



- b. 29 CFR 1926.602 Motor Vehicles, Mechanized Equipment, and Marine Operations.
- c. 29 CFR 1926.604 Motor Vehicles, Mechanized Equipment, and Marine Operations.
- d. 29 CFR 1926.606 Motor Vehicles, Mechanized Equipment, and Marine Operations.
- e. 29 CFR 1926.1000 Rollover protective structures (ROPS) for material handling equipment.
- 9.1.3 PCSA (Power Crane and Shovel Association)
 - a. Standard No 1 Mobile Power Crane and Excavators Standards
 - b. Standard No 4 and No 5
- 9.1.4 NAB High Voltage Overhead Lines and Cables Program

10. APPENDICES

- 10.1 Appendix A - Heavy Mobile Equipment Daily Prior-to-Use Checklist

11. REVISION LOG

Revision Log				
Rev. No.	Requested By	Approved By	Revised By	Rev. Date
0	Mosaic Initial Issue	Safety Dept.	Safety Dept.	5/14/07
1	J Heaser - Change Safe Working Distances	Safety Dept.	Safety Dept.	7/28/10
	Reformat for ISO		D. Allen	7/7/2011
2	Mike Neal - Review for compliance		R. Coghlan	12/19/11
3		Safety Dept.	R. Withers	4/20/2012
4	Review Cycle	HSS Director	SME and HSS	5/03/2016
5	RCA Corrective Action	PMO	PMO	09/19/2022
6	Approved Field Request	Health and Safety	PMO	8/22/2023
7	MSHA Annual Review Required	EHS	EHS PMO	8/15/2024
8	MSHA Annual Review Required – Clarification to 5.2.6	EHS	EHS PMO	8/15/2025