# Users Guide for Mobile Mining Equipment Database

A Multi-Client Statistical File developed by The Parker Bay Company





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# Mobile Mining Equipment Database

# 'PRIMARY MINES' Table Summary

<u>Field Name</u>	Data Type	Size	Description
ACCT #	Integer		Key linking mine to machine and personnel records
ACCT_TYPE	Text	48	Mine, Corporate, Contractor, Lease/Rental, Unspecified
NAME – ABBREV	Text	32	Company & mine (abbreviated and using commonly accepted company descriptions)
COMPANY	Text	48	Proper/official name of mine operator/company
MINE-LOCATION	Text	48	Name of specific mine/operation
ADDRESS-1	Text	48	Address – first line (street, PO Box, etc)
ADDRESS-2	Text	48	Address – second line (Intnl. – city, postal code, etc)
ADDRESS-3	Text	48	Address – third line (U.S. – city, state, zip; INTNL = country)
CITY	Text	28	City where mine office is located
COUNTY	Text	28	County where mine is located (U.S. only)
STATE/PROV	Text	8	State/Province (2-digit official for U.S. & Canada; others include Austr., Brazil)
POSTAL	Text	12	Postal/Zip Code
COUNTRY	Text	16	Country where mine is physically located
PHONE #	Text	24	Phone number (begins with country code followed by blank)
FAX #	Text	24	Fax number (begins with country code followed by blank)
EMAIL	Hyperlink		Mine general contact email
WEBSITE	Hyperlink		Mine or Corp. Web site including extended link to best available page
OWNERSHIP	Text	72	Parent company, joint venture partners & minority holders (incl. % when less than 100%)
REGION – NEW	Text	40	Geographic region (classification assigned by Parker Bay)
MINERAL(S)	Text	14	Minerals/material mined (one or two primary)
MINERALS GROUPS	Text	20	Groups mineral classifications into 5 primary minerals and "other" for simplified reporting.
OUTPUT (1)	#,###.###		Primary mineral production (MM tonnes per year, ex. Gold – tonnes, Diamonds – MM cwts.)
OUTPUT (1) MEASURE	Text	40	Unit of measure for primary mineral production (metric)
OUTPUT (2)	#,###.###		Secondary mineral production (MM tonnes per year, ex. Gold – tonnes, Diamonds – MM cwts.)
OUTPUT (2) MEASURE	Text	40	Unit of measure for secondary mineral production (metric)
OUTPUT YEAR	Text	4	Year for which output is reported.
VOLUME	#,###.###		Annual volume of all materials handled (MM tonnes)
WASTE/OB RATIO	Text	8	Ratio of waste/overburden to ore/coal (e.g. "10:1" = ten tonnes of waste per tonne of ore/coal
START-DATE	Date		Mine start-up date
RESPONSE	Text	48	Mine Equipment List – how & when received
UPDATED	Date		Date PRIMARY MINES record was last updated/modified
NEW ACCOUNT	Text		Account added in current monthly update = X
REMARKS	Text	200	Comments. Used for identifying smaller machines, other conditions, events not included elsewhere
STATUS	Text	12	Mine operating status: e.g. 'active', 'inactive', 'closed', 'development'.
EQPT	Text	4	Mine with equipment in "Machine List file – "YES"; with no equipment – "NO"
EQPT TYPES	Text	12	Quick identification of equipment types at this location
KEY CONTACT NAME	Text	40	Name of senior operations person (from Personnel file)

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			Mobile Mining Equipment Database
KEY CONTACT TITLE	Text	40	Title of senior operations person (from Personnel file)
EQUIPMENT TYPES	Text	хх	T=trucks, S=elec. shovels, H=HX, W=wheel loaders, D=draglines, Z=dozers, G=graders, L=drills

# Mobile Mining Equipment Database

# <u>'MACHINE LIST' Table Summary</u>

Field Name	Data Type	Size	Description
MACH ID	Integer		Software-assigned number (unique 'identifier' for each individual)
ACCT NO	Integer		Mine account number – key to PRIMARY MINES table
MACHINE OPERATOR	Text	40	Company that operates equipment/mine (use for contractors, otherwise – mine operator)
CATEGORY	Text	8	Major equipment grouping for data sorting and searches ("HAULAGE", "LOADING", "OTHER")
PRODUCT	Text	16	Product (e.g. Truck, Wheel Loader)
ТҮРЕ	Text	16	Product qualifier (e.g. Rear Dump, Bottom Dump)
MFR	Text	16	Manufacturer
MFR GROUP	Text	16	Corporate parent of manufacturer
MODEL	Text	12	Model designation (e.g. '830E') including series when applicable & available (e.g. '777C' '777D')
SN	Text	12	Manufacturer's serial number
VEHICLE WEIGHT	Integer		Model empty weight – metric tonnes (per manufacturer's specifications)
CAPACITY	Integer		Bucket or Truck-Bed Volume in cubic meters (per manufacturer's specifications)
SIZE	Integer		Standard measure of equipment size; varies by TYPE (kW, working weight, etc.)
SIZE CLASS – NEW	Text	20	New size categories for competing models.
PAYLOAD	Integer		Average or mfr-rated payload of truck bed or loader bucket/dipper
DRIVE	Text	3	Electric = Exx, EAC or EDC; M= Mechanical; D = Diesel' H=Hydraulic
DRIVE SYS MFR	Text	30	Manufacturer of Primary Drive System
TIRE SIZE (STD)	Text	16	Tire size
SHIPQTR	Integer		Calendar quarter of shipment (e.g., "1" = Jan./Feb./Mar.)
SHIPYR	Integer		Year machine was originally shipped and/or commissioned.
SHIPALT	Text	12	Additional info. on shipment: e.g. range of ship years for given MODEL if SHIPYR unknown
RELOC	Text		X to indicate machine moved from original delivery site
MM\$	\$xxx.xxx		Approx. market value ("replacement cost") at 2010 price levels: all SIZE CLASS same value
ORIGIN	Text	12	Country where machine was manufactured
STATUS	Text	12	Current machine operating status (e.g. 'operating', 'parked', 'for sale')
A/I	Text	4	Activity status: A = active - 'operating', 'parked', 'mfg./shipping'; I = inactive - 'scrapped', 'sold',
			'for sale', etc
STATUSDATE	Date		Month/year when operating status was confirmed by reliable source. Default: Dec. of SHIPYR
AUC	Text	1	Record was: A= added; U = modified; C = record including machine status confirmed
UPDATE	Date		Date MACHINE record was last updated/modified.
CONTRACTOR LINK	Integer		Where applicable links machine to ACCT # of contractor in mines table
RENTAL LINK	Integer		Where applicable links machine to ACCT # of rental company in mines table

# Mobile Mining Equipment Database

# <u>'PERSONNEL' Table Summary</u>

Field Name	Data Type	Size	Description
ID	Integer	auto	Software-assigned number (unique 'identifier' for each individual)
ACCT #	Integer		Mine acct. number – key to PRIMARY MINES table
SURNAME	Text	24	Contact's last name
FIRSTNAME	Text	16	Contact's first name, middle
TITLE	Text	40	Contact's title
UPDATE	Date		Date record was last updated
EMAIL	Text	40	E-mail address (as available)

# Mobile Mining Equipment Database Explanatory Notes

The following descriptions relate to tables/files contained in the "Mobile Mining Equipment Database" provided to subscribing clients by The Parker Bay Company. These notes are intended to clarify the nature and potential application of the data fields contained in The Database.

## Table Name: PRIMARY MINES

This file contains all data pertaining to the individual locations/mines where equipment covered by the database is located. It is the overall intention for these records to represent specific geographic locations: i.e. individual surface mines. For most operations, the definition of a unique, contiguous location is unambiguous. But in some instances, mining companies have chosen to consolidate more than one location/pit under a single management group. In such instances, this Database follows the mine management's definition of 'mine' and thus combines multiple-pit locations as a single mine: e.g. Peabody Coal's North Antelope-Rochelle mine in Wyoming, Newmont's Carlin gold mine in Nevada. For such examples, the Database contains only a single mine record in the PRIMARY MINES file even if the physical dimensions of these multiple-pit locations indicate separate 'entities'. In a few instances, even when separate mine locations are known to exist (operating under separate management teams), they have been grouped together because insufficient information is currently available with respect to address, phone, fax, etc. and/or the equipment within the grouped mines. For example, for some of the coal-producing entities in the U.K. and India, data for only the corporate entity are currently available. In these instances, a single PRIMARY MINES record is included but, where known, the multiple pit locations are indicated in the MINE-LOCATION field. For example, the U.K. opencast contractor named, appropriately enough, Coal Contractors operates three sites: Broomhill, Low Gordon and Viaduct. However, specific address, phone, fax and related information is not currently known to the Database developer, nor is the breakdown of the Company's equipment fleet known to the Database developer. Accordingly, all mine information on Coal Contractors is contained in a single record in the PRIMARY MINES file, and all individual machines in the MACHINE LIST file are linked to this single record. To permit searches by individual site (say "Low Gordon"), all three of Coal Contractors' sites are listed in the MINE-LOCATION field of the single PRIMARY MINES record. When data does become available that permits a division along individual mine locations, new mine records are created, and clients will be advised of such new breakdowns. Often such information is also noted in the COMMENTS field of the affected mine records.

#### ACCT #

#### Integer

This field is utilized to uniquely identify a specific mine location (as further defined above) and to link it to all records in the MACHINE LIST and PERSONNEL files. Records in those files can be linked to only one PRIMARY MINES record. These is no significance to the numbering system employed except that for convenience and data processing purposes, all North American mine records were assigned numbers between '1' and '4999'; all mines outside North American have been assigned numbers between '5000' and '7999'. Lease/rental companies are assigned account numbers '8xxx'. Mining corporate headquarters (used only when individual mines where machines are delivered could not be identified) are assigned numbers 9001 – 9899. In limited instances where machines have been reported shipped by country but without mine name, they are assigned to generic country accounts: 9901 = U.S., 9902 = Australia, etc.

## NAME-ABBREV Text 32 characters

This field contains the most commonly used names for both the mining company and the mining operation. In general, an abbreviated form of the company's name is used (e.g. VALE, CODELCO) and this is often different from that which appears in the COMPANY field. The company and mine in this field are always separated by a "/" e.g. "FREEPORT/CHINO".

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MACHINE LIST	9	8 110	) Mine	North Cambria Fuel		North Cambria Fuel Co.		DB
PERSONNEL	B	6 111	Mine	Cambrian Coal/Premier Elkhorn		Premier Elkhorn Coal Co., LLC		Job
	B	E 112	2 Mine	Simplot/Vernal		Simplot Phosphates LLC		Ven
PRIMARY MINES	B	6 113	Mine	Sky Haven Coal		Sky Haven Coal, Inc.		Spe
Consultas 🏾 🔅	9	8 114	Mine	Freeport/Chino		Chino Mines Co.		Chi
EQUIP BY GEOG & MINERAL	6	e 115	Mino	Cumborland No. 1		Horizon Natural Recourses Inc.		Curr

This field may be useful when running reports with limited space (e.g. table row or column headings); or when searching for all mines operated by a mining concern that utilizes different names for its operating entities. For example, Peabody Coal operates as "POWDER RIVER COAL" in Wyoming and "PEABODY WESTERN COAL" in Arizona; all Peabody mines can be identified by searching this field for "\*PEABODY\*".

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### COMPANY

### 48 characters (max. size)

This field contains the full legal name of the company that operates the mine described by this record (to the extent that it is known). When searching by company name, it may be necessary to utilize a segment of the full name enclosed in \*'s (e.g. "\*name fragment\*"). The new Peruvian copper mine Antamina is operated by "Cia. Minera Antamina S.A.". You may have difficulty finding some mines doing an alpha search or if you try simply typing in Minera Anatamina. However, if you search using \*Antamina\*, it will turn up. Other searches by this field may be even less fruitful because the common name for a mining company may not appear in the proper name. Example: 'Peabody' does not appear in this field for mines in Wyoming because the operating company name used for these mines is Powder River Basin Coal Co. To overcome such search problems, the Database includes a field called NAME-ABBREV (see above).

# ACCT\_TYPE Text 48 characters

Text

This field is intended to clarify the nature of the operation represented by each record in the table. A bit of explanatory background: one of the primary the objectives of the Database is to identify a specific location (mine) where each machine is operating. And in the vast majority of cases (over 80%), that is what is represented by each record in the "Primary Mines" table – a specific mining location with all the appropriate machines linked.

However, as the Database service evolved, a significant number of records for machines shipped and/or located in the operation were not identified to Parker Bay by a specific physical location where units were delivered and employed. Whether reported by the manufacturers when delivered, by a mining company, non-mining company owner, or other sources deemed reliable by Parker Bay, these units could be clearly defined as being placed in a mining operations without sufficient details as to exactly which mine. The following are four such categories as are defined in the "Acct\_Type" field (along with the "Mine" classification). The numbers listed below apply to the totals/subtotals contained in the full Database service:

 "Mine": (81% of all active machine records). Each location is understood to be the closest to the mining operation where the units are physically located and represents the best contact details for those machines. In some instances, more than one mining operation may be covered by the same Primary Mines record. In these instances, the operations are identified in the "Mine-Location" field in the Primary Mines table, and in the "Machine Operator" field of the "Machine List" table. For example, Syncrude produces oil sands from several operations (Mildred Lake, North, Aurora) but all these locations are directed from the offices defined in the Primary Mines account # '766'. Whenever possible, the individual machine records for Syncrude are identified under the "Machine Operator" as being located at Aurora, Mildred Lake or North. But when not so identified, they are simply identified as being operated at Syncrude. All these machines are considered to be identified as being located at the mine 'Syncrude' – and so account #766 carries the "Acct\_Type" category "Mine".

- "Corporate": (1.6% of all active machine records). When Parker Bay has obtained reliable information that a machine has been delivered to a mining company by name (e.g., "Peabody", "VALE") but not the specific location where the unit is physically located, a corporate account has been created with the Acct # series "90xx" and the machines have been attached to this account with the "Machine Operator" field designated as "mining company name/Various". The defining fields in the Primary Mines record may refer to a corporate headquarters, e.g., Peabody Energy in St. Louis, or one of the company's regional offices closer to where the machine was delivered, e.g., Peabody (Australia) in Brisbane. After machines are attached to a corporate account, Parker Bay continues to solicit additional details to permit identification of the specific mine where each machine is located. Once obtained, the machine record is modified to include that location and reattached to that mine's account in the Primary Mines table.
- "Contractor": (10.7% of all active machines). As has been explain in previous correspondence, mining contractors own/operate nearly 20% of the machines included in the Database. Whenever possible, machine records are attached to specific mines where they are operating and both the contractor and the mining company/mine are included in the "Machine Operator" field of the "Machine List" table, e.g., "KMC Mining/Syncrude-Aurora". But when the mine is not identified, Parker Bay attaches the machine record to the Contractor's headquarters account, and these are identified in this new field accordingly.
- "Lease/Rental": (1.7% of all active machines). Whether owned by an independent company, e.g., Emeco, or a manufacturer's dealer, e.g., Westrac Fleet Contract, all account numbers designated "8xxx" in the "Primary Mines" table are assigned to lease/rental companies and machines are attached when Parker Bay is unable to determine to what mine the machines have been 'hired out'.
- "Unspecified": (5.3% of all active machines). The vast majority of machines reported by participating manufacturers each quarter are identified by one of the above four types of locations with defined names, addresses, phone/fax, personnel contacts, etc. However, there are instances where the only defining field for the location where the machine has been delivered is the country (and sometimes, the state). In order to include as complete an accounting of shipments and machine population, Parker Bay has taken the reported machine data (manufacturer, size-class, model, ship date, serial number) and attached such "Unspecified" machines to an account in the Primary Mines table that does nothing more than identify the country of destination and, presumably, current operation. It is one of the major 'housekeeping' tasks of each monthly update to identify as many of these machines as possible and reassign them to specific locations. This is the case for several hundred machines most months (nearly 1,000 in a single month earlier this year). Our goal is to keep this category below 5% of all active machines. But realistically, it will almost inevitably remain above 2% unless manufacturers' reporting changes.

## MINE-LOCATION Text 48 characters

Contains the name of the mine as commonly applied by mine management, industry sources, etc In limited instances, this field is blank. Where more than one mine site is covered by a single record, the several names are listed in this field. In those instances where a contract mining company is known to have purchased equipment but the mine is unknown, an account has been established for the mine contractor and this field has been designated "VARIOUS SITES". Note: this does not apply to equipment owned/operated by contract mining companies where the mine is known. In those cases, the equipment is assigned/linked to the specific mine, but the MACHINE OPERATOR field in the MACHINE LIST file indicates the mine contractor that owns/operates the equipment and the machine is linked to the contractor via the CONTRACTOR LINK field (see below).

# ADDRESS-1 Text 48 characters

This and the following two fields contain the full mailing address for each mine location. Note: the separate fields for state/province, country are not needed to complete the mailing address. Generally the street address (if the mine has one) and/or postal box number are contained in this first address line.

# ADDRESS-2 Text 48 characters

For U.S. listings this second line contains supplemental address information that may include a physical description of the location ("Highway 170, 17 mi. N of Farmington") but does NOT contain any city/state/zip code information which is always listed on "ADDRESS-3". For mines outside the U.S., this field contains the city, state (if applicable), and postal code.

## ADDRESS-3 Text 48 characters

For U.S./Canadian listings, this field contains the city, state and zip code. For international locations, it contains only the country.

# CITY Text 28 characters

This field is used to separately list the city where the mine office is located. For remote locations, the mine office may not be physically located within the municipal limits but, to the extent known, the designated city is where the mine received mail, packages, etc. This field may prove useful with mapping software that relies on municipal coordinates.

## COUNTY Text 28 characters

This field is used only for U.S. mines. Its primary application is for those Database users utilizing county data from other statistical sources (e.g. EMI), or for those clients that may divide the geographic responsibilities of sales/service organizations and distributors along county lines. Note: clients who have no use for this field may wish to suppress its display by going to the *"Format"* button on the tool bar and selecting *"hide columns"*.

# **STATE/PROV** Text 8 characters

This field contains an abbreviation for the state or province where the mine is located. Standard postal service abbreviations are used wherever applicable (U.S., Canada, Australia, Brazil). This field is useful primarily for searches and sorts where using the Access feature '\*character string\*' on an address field to search for a state abbreviation may pick up extraneous listings.

# **POSTAL**Text12 characters

Contains the full postal code where known. Commonly used separators (dashes or blanks) are not included in this field.

# **COUNTRY** Text 16 characters

Abbreviated form of the country where mine is located (e.g. 'U.S.', 'South Africa'). This field is useful primarily for searches and sorts; and for reports where an abbreviated version is useful when space is limited. Also, this field may aggregate across certain national designations indicated in the ADDRESS fields (e.g. Scotland and England are both designated "U.K." is this field).

### PHONE # Text 24 characters

Phone number for the specific mine when known. Where multiple phone listings exist, the main access number is listed. In some instances, mines have installed computer-controlled phone exchanges, and you will have to follow the prompts provided to reach the party you wish to contact. Each phone number begins with the appropriate country code followed by a blank. Note: it is common practice in some countries to precede the state or city codes with a "0" that is NOT used when connecting from outside the country. For example, Australian state codes are typically listed as "02". But when dialing from overseas, the "0" is omitted (as has been done in this field). If an individual mine's phone number is unavailable, this field contains the number for the parent company. To distinguish such corporate listings, these phone numbers are followed by the designation "HQ".

### FAX # Text 24 characters

Fax number for the specific mine unless otherwise indicated by the "HQ' suffix. The primary/main mine office fax number is included, unless an alternative listing was recommended by the mine itself.

### WEBSITE

### Hyperlink

Link to mine or corporate website; either the homepage or the most relevant extended link within the site.

## **OWNERSHIP** Text 72 characters

Mine ownership is indicated here in an abbreviated form, and at the highest level of corporate organization, i.e. if the mine is owned by Company A which is, in turn 60% owned by Company B, this field will list "Company B". In some instances there are two prominent names in the corporate hierarchy for which ownership searches might be made and, in those instances, an effort is made to include both entities (e.g. "RIO TINTO-KENNECOTT" is listed in OWNERSHIP for Bingham Canyon to permit searches using either "\*KENNECOTT\*" or "\*RIO TINTO\*"). In such instances, the higher-level entity is listed first, followed by a hyphen (in this example Rio Tinto owns Kennecott which owns and operates Bingham Canyon). When ownership is outright, i.e. 'wholly-owned', only the name is included (100% is implied). When ownership is divided, the major shareholders are listed with their respective shares. Non-mining entities with minority shares are often omitted. For mines with government ownership, the designation "GOVT country name" is utilized. Ownership information is as accurate and current as possible relying on both mine input and published information including regular updates gleaned from the trade press (e.g. Grupo Mexico's reacquisition of ASARCO, Cliffs' acquisition of Consolidated Thompson). But clients are cautioned to consult other sources when mine ownership issues are critical.

### **REGION - NEW** Text 12 characters

This field represents the new definitions for grouping countries (and mines) into regions such as Latin America, Africa, etc. Some changes were made to the previous regional definitions, combining North America East and West into one region, grouping the northern African countries with the rest of Africa and placing the former Soviet Union countries that are not part of the CIS (Commonwealth of Independent States) in Europe/Middle East. A map and complete listing of the regions with the countries included in each is provided in a later section.

## MINERAL(S) Text 14 characters

The primary mineral mined at this location. Because certain two-mineral combinations are common this field contains such combinations separated by as "/" with the primary mineral

shown first (e.g. Gold/Silver, Gold/Copper, Lead/Zinc). Output for minerals defined here are indicated in the below fields.

### MINERALS GROUPS Text 20 characters

Groups the minerals as identified in the above field into five primary groups plus "Other". The primary mineral groups are Coal, Copper, Gold, Iron, and Oil Sands. Each of the five groups includes any mine whose largest economic output is accounted for by that primary mineral (ie a mine with Gold/Silver is in the "Gold" mineral group, one with Copper/Gold in the Copper group, etc.). These five minerals each have a significant share of the total equipment population with any other mineral with a lesser share falling under the group "Other". This field simplifies analysis of equipment by mineral application.

### **OUTPUT (1)** *Number #,###.###*

This field contains the mineral production of the mine as measured by commonly accepted industry standards. It is expressed in millions of metric tonnes of annual output except for gold, silver and platinum (expressed in metric tonnes), and diamonds (expressed in millions of carats). If a mine is under development (see STATUS field below) and targeted annual production is known, it is provided here. Mines that are closed will have no figure herein, but mines that are 'inactive' but not permanently closed may show the latest annual production figures. The industry standard definition is summarized in the OUTPUT (1) MEASURE field.

## OUTPUT (1) MEASURE Text 40 characters

This field contains the industry standard definitions for the unit of measure. For example, mine copper production is commonly measured as the tonnage of copper content produced, whereas iron ore is measured in tonnes of "usable ore" – after upgrading via pelletizing. Note: this field is hidden in the file as distributed to clients as it is lengthy, repetitive and seldom used. To permit its display, go to the "*Format*" button on the tool bar and selecting "un*hide columns*" and click on the box opposite the "OUTPUT (1) MEASURE" field.

**OUTPUT (2)** *Number #,###.###* Mineral production for the second mineral listed in the MINERAL(S) field if applicable.

## **OUTPUT (2) MEASURE** Text 40 characters

See comments for OUTPUT (1) MEASURE.

# OUTPUT YEARText4 characters

The calendar year for which OUTPUT fields are reported. The latest available year is used.

### VOLUME

*Number #,###.###* 

This field contains a figure for the annual tonnage of all material moved at this location on an annual basis, and expressed in millions of metric tonnes. This includes both raw ore and waste/overburden moved. Many mines do not make such information publicly available, so VOLUME is often blank.

### WASTE/OB RATIOText8 characters

The ratio of waste to ore, or overburden to coal is expressed here as *"XX:1"*. Although the coal industry common expresses this ratio as volume (cubic yards or meters) of overburden per ton of coal, these volume figures have been converted to tonnages in this field (at approx. 1.8 metric tonnes per cubic meter).

# **START-DATE** Date Year

The year the mine began commercial production.

## **RESPONSE** Text 24 characters

This field indicates when and how the data for both the mine and its equipment were reported. If the information was assembled from a collection of sources (i.e. mining directories, OEM shipment reports, etc.), no date is included in this field. But when detailed mine listings were obtained (as they have been for almost 500 of the mine records), the source and date are identified here in general terms (e.g. "MINE-DIRECT 01/01/10" or "THIRD PARTY 11/09"). Specific individuals' names have been omitted to avoid possible concerns over confidentiality of sources. This field may be of use to clients where comparing Database information to that obtained from other sources.

## UPDATED Date mo./day/year

The date this record was last updated. This will often differ from the RESPONSE field because it is also used to indicate partial updating to the record when obtained from sources not recorded in the RESPONSE field. For example, if new output data is obtained/ added from a published source, the UPDATED field will indicate the date of that change. This field can be used to identify mine records that have been updated/ changed in a given timeframe. However, it does not indicate which fields have been updated.

### NEW ACCOUNT Text

Denotes the accounts that have been added in the most recent update.

## **REMARKS** Text 200 characters

This field is used to record a wide variety of information that does not fit in the other data-specific fields. Each comment has a date at the end of the text to indicate its currency. Clients may want to review recent comments by searching records that have been UPDATED since the previous copy of The Database was received.

## **STATUS** *Text* 12 characters

This field indicates whether this mine is ACTIVE, in DEVELOPMENT, INACTIVE, or CLOSED. Mines that are INACTIVE or CLOSED will have equipment that is also INACTIVE (see MACHINE LIST file field for equipment STATUS). Mines that have been permanently closed for an extended period, with all equipment sold off or scrapped, are deleted from the Database entirely.

# **EQPT** Text 4 characters

This field has a simple "YES" or "NO' to indicate whether there are any records in the MACHINE LIST file attached to this PRIMARY MINES record. The majority of mines in this file (over 92%) are linked to at least one machine record. However, in order to track new mine developments and to solicit data from mines that may have equipment as yet unreported, a number of locations have been added to the PRIMARY MINES file without accompanying equipment in the MACHINE LIST file. This field may be useful if a search or report is focused only on those mines with equipment in the Database: by restricting a query or report to "YES" in this field, only mines with equipment will be included.

# **KEY CONTACT NAME**Text40 characters

Senior or operations person from the PERSONNEL table. This field is included here as a simpler reference when viewing the PRIMARY MINES table.

### **KEY CONTACT TITLE** *Text* 40 characters Title of the person named in the KEY CONTACT NAME field.

EQPT TYPESText12 charactersThis field is intended to permit quick searches for mines using particular types of equipment<br/>without resorting to queries combining the PRIMARY MINES and MACHINE LIST tables. Product<br/>abbreviations are: T = Trucks, S = Electric Shovels, H = Hydraulic Excavators, W = Wheel Loaders, D<br/>= Draglines, Z = Dozers, G = Graders, L = Drills.

# Table Name: MACHINE LIST

This file contains all data specific to individual pieces of equipment operating at the mines identified in the PRIMARY MINES file and covered by the definitions of large mobile mining equipment that constitute the parameters for inclusion in the Database. Each record represents a specific unit that has been identified by type, manufacturer and model. Certain fields in this file (defined below) contain data that are common to the model (e.g. "MM\$", "SIZE CLASS") while others are unit-specific (e.g. "SN", "SHIPYR"). The primary objective of this file is to identify machines that are currently located at each operation identified in the PRIMARY MINES table, i.e. this is a "current machine population", not a "historical ship list". Extensive efforts are made on an on-going basis to confirm the location of each machine and its current operating status (see STATUS field for details). When a machine is relocated, only the new/existing location is included in the Database (thus significant differences should be noted between the Database and external listings containing original shipment locations). But to help track these relocated machines, notations of machine relocations are contained in the SHIPALT field.

### MACH ID

### Integer

Primary key for the Machine List table; unique ID number automatically assigned to each machine record.

### ACCT NO

### Integer

This field links each MACHINE record to one, and only one PRIMARY MINES record. But there is no limit to the number of MACHINE LIST records that can be linked to a given PRIMARY MINES record (in practice, the largest mines have hundreds of machines).

## MACHINE OPERATORText40 characters

This field is identical to NAME-ABBREV in the PRIMARY MINES file with two notable exceptions. If two or more distinct operations are included in a single PRIMARY MINES account, and when the location of equipment can be differentiated by these distinct operations, individual names are assigned in this field. For example, even though Syncrude operates as a single entity, they now operate two distinct pits – Aurora and North. Some equipment is moved freely between these pits and is thus only identified as "Syncrude". But those machines which are known to be running in one location or the other are identified herein as "Syncrude/North" or "Syncrude/Aurora".

26490	766 NO. AMERICAN CONSTR./SYNCRUDE-AURORA	HAULAGE	TRUCK	REAR DUMP	CATERPILLAR	CATERPILLAR	777
30181	766 NO. AMERICAN CONSTRUISYNCRUDE-AURORA	HAULAGE	TRUCK	REAR DUMP	CATERPILLAR	CATERPILLAR	777
25451	766 NO. AMERICAN CONSTR./SYNCRUDE-AURORA	HAULAGE	TRUCK	REAR DUMP	CATERPILLAR	CATERPILLAR	777
51538	766 NO. AMERICAN CONSTR./SYNCRUDE-NORTH	HAULAGE	TRUCK	REAR DUMP	EUCLID-HITACHI	HITACHI	R90
8065	766 NO. AMERICAN CONSTR./SYNCRUDE-NORTH	OTHER	DOZER	CRAWLER	CATERPILLAR	CATERPILLAR	D10
0000	TCC NO. INTERIOUN CONSTR. INTERIOR	OTHER	0.0350	00.000.00	0475000440	CATERONIA P.	240

A second function of this field is to identify equipment that is owned/ operated by a contract mining company (e.g. North American Contracting, Thiess) at a specific site. The contract miner is identified in this field followed by the mine name. However, the CONTRACTOR LINK field (see below) provides a direct link between all machines owned/operated by a given contractor and that company's primary offices as contained in the PRIMARY MINES table.

### CATEGORY Text 8 characters

This field represents groupings broader than those defined in PRODUCT (see below) but which have little practical significance for some Database users (who may wish to hide this column as indicated in the PRIMARY MINES section above). The three categories currently defined are HAULAGE, LOADING, and OTHER. The Database developer is in the process of expanding the product coverage of the Database at which time this field may take on greater value to users. One possible user application is to select LOADING in this field to get all electric shovels, hydraulic shovels/excavators and wheel loaders as a single group.

### **PRODUCT** Text 16 characters

Text

This field is used to identify the major product types/categories covered by the Database (and abbreviated as follows): "TRUCK", "ELECT SHOVEL", "HYD EXCAVATOR", "WHEEL LOADER", "DRAGLINE", "DOZER", "GRADER", "DRILL". These product labels are primarily for use in search and sort functions in query and report development.

### TYPE

16 characters

There are several major categories within the various product definitions that are identified within this field. By Product, they are:

TRUCK:	REAR DUMP, BOTTOM DUMP, WATER, TOW, LUBE, OTHER
HYD EXCAVATOR:	SHOVEL, BACKHOE
DRAGLINE:	WALKING, CRAWLER
DOZER:	CRAWLER, WHEEL
DRILL:	ROTARY, DTH (down the hole)

There are no TYPE classifications for electric shovels, wheel loaders or graders.

### MFR Text 16 characters

This field provides an abbreviated form of the original equipment manufacturer (OEM) whether the machine was manufactured at the OEM's works or under license/subcontract. Because many of the OEM's have been acquired in recent years but often maintain their trade names, the Database permits identification of both the parent company and the subsidiary or trade name of the product. This is done utilizing the following compound identifiers:

OMZ/IZ-KARTEX
EUCLID/HITACHI
KOMATSU/DEMAG
P&H/PAGE

# MFR GROUP Text 16 characters

This field was added for convenience in searching, sorting and report writing. All equipment produced by companies like Komatsu, Terex and Bucyrus are identified by the common parent company's abbreviated name. In some instances the parent company name is distinctly different from the MFR name, e.g., Joy Global – P&H.

# MODEL Text 12 characters

The OEM's model designation is used here including any series designation if known, e.g. Caterpillar's 793, 793B, 793C, 793D, 793F. Caution should be exercised when searching by MODEL to pick up all series for a given model. This can be done most easily by searching for the basic character string for a given model (e.g. "\*793\*", "\*2800\*").

Text 12 characters

The OEM's unique serial number is included in this field whenever known. Some OEM's include a non-unique prefix and/or suffix with their serial numbers and these have generally been omitted. If any duplication of serial numbers for the same OEM and model are encountered, please notify the Database developer as there may be a duplicate machine listing.

### VEHICLE WEIGHT

SN

### Integer

The standard empty vehicle weight (GVW) for a given model and series is included in this field. This field was added in mid-1999; vehicle weights for some models are unavailable (esp. obsolete models).

## CAPACITY Integer

Many manufacturers rate their excavating, loading and haulage equipment according to the volume of material the bucket or truck body will hold (measured here in cubic meters). Such measurements permit the comparison of loading and haulage equipment with respect to the number of passes required for a given loading tool to fully load a given truck. This field might prove useful in making such a comparison. Note: standard ratings are included in this field because individual volume measures (adjusted for material density, bed liners or other factors) for specific machines are generally unavailable. Accordingly database figures are intended for general, comparative purposes, not detailed applications work.

### SIZE

### Integer

This field and the following one are intended to provide comparative measures of different models within each PRODUCT group using the most widely applied industry standard of measurement. These standard measures vary by PRODUCT as follows:

TRUCK	Payload capacity in metric tonnes
ELECTRIC SHOVEL	Dipper capacity (struck) in cubic meters
HYDRAULIC EXCAVATOR	Empty machine weight (GVW) in metric tonnes
WHEEL LOADER	Engine power rating: kW
DRAGLINE	Bucket capacity (struck) in cubic meters
DOZER	Engine power rating: kW
GRADER	Machine weight (GVW) in metric tonnes
DRILL	Maximum pulldown/ bit loading ('000 kg)

As with measures of WEIGHT and CAPACITY, the SIZE of a given model and series is applied to all such units unless individual measurements for a specific machine are known. Generally, the SIZE applied to a given model is that which is indicated in OEM's official specification sheets. Different series of the same model (2800, 2800XP, 2800XPB) may have different SIZE measures if OEM specification sheets indicate this – as is often the case with model/series upgrades.

## SIZE CLASS - NEW Integer

This field is an updated classification for comparing competing units of a product that replaces the SIZE CLASS field. It groups models using ranges of a comparable size metric for each product (payload, engine power rating, net pulldown rating, etc.). This allows for comparison of competing models both within and across products. For example, all loading equipment utilize size classes of payload in metric tonnes which facilitates comparing wheel loaders to hydraulic excavators to electric shovels, as well as enabling comparative loader/truck match-ups. The use of a range for defining a size class helps to better identify the different models that are grouped together, as well as consolidating the total number of size classes (now between 3 and 6 depending on the product). Whereas the original size class would put all trucks with a payload rating from 127-150

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into the 140 mt class, the new size class uses the range itself (127-150). Tables at the end of this Guide indicate the new size classes for each PRODUCT and the various models for each manufacturer that fall within these classes.

#### PAYLOAD

Integer

The average or manufacturer-rated payload of the truck bed or loader bucket/ dipper. This field is only applicable for loading equipment (electric shovels, hydraulic excavators, wheel loaders), haulage equipment (trucks) and draglines. Values are listed in metric tonnes (mt). The payload capacity serves as the size metric for size class groupings for the 5 products listed.

# DRIVE Text 3

Identifies what type of primary drive system is utilized on the machine. This field is more relevant for certain products (trucks) than others, but is populated for the majority of machines to the extent that it is known. The drive system is listed in an abbreviated form of the 4 primary drive types: mechanical (M), hydraulic (H), diesel (D) or electrical (EAC, EDC or E for those that are known to be electrical drive but not whether it's AC or DC). The following is a listing of the types of drives identified for each of the different products in the database:

TRUCK	M, EAC, EDC, E
ELECTRIC SHOVEL	EDC, EAC
HYDRAULIC EXCAVATOR	D, E
WHEEL LOADER	M, E, EAC
DRAGLINE	EDC, EAC
DOZER	Μ
GRADER	Μ
DRILL	Е, Н

### DRIVE SYS MFR Text

Where available, this field identifies the manufacturer of the primary drive system utilized on the machine. This is primarily based on the OEM specifications for each particular model. The main drive system manufacturers are either the OEM's themselves or suppliers such as ABB, GE, Siemens, etc.

30

### TIRE SIZE (STD)Text16

For the tired products in the database (Trucks, Wheel Loaders, Graders, Wheel Dozers), this field identifies the tire size utilized by the machine according to the model specifications. For some models (Komatsu 630E for example), units of the same model may utilize different size tires, which is identified by each machine record. This field can be used to search for all machines employing a certain size tire. Tire sizes are listed by the standard measure of 'width-diameter of rim' (27.00-49) or where applicable 'width/aspect ratio-diameter of rim' (53/80-63).

### SHIP QTR & SHIPYR Integer

These fields indicate the calendar quarter and year this specific machine was shipped and put to work. While seemingly unambiguous, there are some complications to the meaning of SHIPYR. Participating OEM's have supplied ship dates for their equipment and these were used originally. For non-participating OEM's, published or informal order reports, serial number guides and other sources were used. But the most common source for all Database records including SHIPYR has become the mines themselves. And when reporting dates for their equipment, many mines utilize a 'commissioning date'. This may differ from the ship date reported by the OEM by a few days or many months. To begin with, the OEM often delivers to an independent dealer/distributor who may transfer ownership to the end-user immediately, or hold the machine

"in stock" for months. Secondly, assembly on-site may take only a few days for a small wheel loader, or many months for the largest draglines. And finally, some machines are not accepted immediately upon physical start-up, being officially commissioned by the mine only after a trial period. As a result the SHIPYR may contain a date for shipment by the OEM, 'retail' delivery by a dealer, or official commissioning by the mine. It is the judgment of the Database developer that, in the vast majority of cases, these differences do not affect the year indicated in this field. However, users who may wish to compare annual shipments indicated by Database records with external sources (e.g. EMI) should be aware of the somewhat inexact nature of the dates in this field.

### SHIPALT Text 12 characters

Text

Ship dates are currently available for approx. 83% of all active machines in the Database. For many of the remaining machines for which no ship dates are known, a ship-date range has been developed based on the model, series and other indicators. For example, the Cat 789B truck was built between 1992 and 1998. If a mine reported operating such machines but didn't indicate their ship or commissioning date, the range "1992-1998" is included in the SHIPALT field. If the trucks were reported on-site in 1996, the range "1992-1996" would be included; if the mine started up in 1994, the range could be further narrowed to "1994-1996". While imperfect, such data might provide useful, for example, when searching for equipment approaching 'retirement/replacement'. This field is also used to identify equipment that has been relocated to its current mine from some other, unspecified location.

### RELOC

If the machine is relocated/ moved from its original delivery site, it will be marked with an X.

### MM\$

#### Integer \$xxx.xxx

Accurate individual machine pricing is not an objective of the Database. The objective of this field is only to provide a general comparative unit of value for each machine measured at current "market levels". Each PRODUCT/SIZE CLASS combination (e.g. TRUCK/REAR DUMP/220 m.t.) is assigned a value – million US\$ to three decimals – which is intended to represent the approximate unit price FOB manufacturer for the calendar year in which the existing Database file was created. Prices are estimated by the Database developer based on information from a variety of industry sources. They DO NOT represent the prices charged by participating OEM's; and at no time has the Database developer solicited and exchanged pricing data for/between participating OEM's. The primary purpose of this pricing data is to permit users to measure the approximate current value of equipment by mine, geographic region, by and across products and models, over time, etc. exclusive of upgrades, special features, depreciation/wear. Such analysis of equipment value should always be done with an understanding and appreciation of the manner in which such values have been assigned by the Database developer.

### **ORIGIN** *Text* 12 characters

This field contains the country of manufacturing origin for the specific machine. This may or may not coincide with the main location of the OEM (e.g. HITACHI is headquartered in Japan but its trucks are built in both Japan and Canada, so "CANADA" or "JAPAN" appears in ORIGIN for Hitachi trucks depending on which manufacturing facility built each unit). If specific units are known to have been built under subcontract in another country (as was often the case for electric shovels built frequently in Japan during the 1970's and 80's), that country is indicated in this field. In some instances, joint manufacturing arrangements exist and where known, the joint manufacturing origin is shown with the OEM's or primary manufacturing location shown first. For example, shovels supplied by U.S. manufacturers with Chinese subcontract content are indicated in this field as "U.S./CHINA".

### STATUS

Text

This field indicates the current operating status of every machine in the Database. The primary purpose of the Database is to identify machine that are currently located at specific mines, and whether those machines are currently operating, parked, for sale, etc. This field provides that information. To determine how recently the STATUS was confirmed, this field should be viewed in conjunction with STATUS DATE (see below). There are a number of STATUS classifications with the most important being:

12 characters

- OPERATING: Approximately 75% of all machines in the Database (45,000+ units as of March 2011) are identified as OPERATING. Machines that may be temporarily out of service for routine maintenance are still identified as OPERATING, but machines that are out of service for an extended period receive one of the following classifications.
- IDLED: Machines considered to be integral parts of a mine's fleet but which are inactive for an extended period (e.g., units shut down due to labor strikes, weak market conditions) are classified as IDLED. This classification is also used for machines owned by lease/rental companies but not identified by a mine where known to operate. Such units may be in operation by the Database developer could not confirm such.
- PARKED: Around 4% of all machines in the Database are classified as PARKED. A machine that is out of service for a variety of reasons, including major repairs or suspension of operations is classified as PARKED. In some instances, when a mine no longer reports a machine's. Such classification generally indicates an uncertainty about the machine's long-term status but reflect a definite knowledge that the machine is no longer operating.
- SOLD: If a machine is reported SOLD by a mine but the new location is unknown, it receives this classification until such time as its ownership/location is determined (at which time the machine record is moved/attached to the new PRIMARY MINES record). Less than 1% of machines are classified as SOLD.
- SCRAPPED: If a machine is reported as having been SCRAPPED or decommissioned in some permanent form (e.g. "parting out"), it receives this classification. Machines that are classified as SCRAPPED constitute less than 2% of the Database records.

# MFG/ SHIPPING, ERECTION, REERECTION

Machines that have been recently ordered but not yet commissioned receive one of these classifications. Machines relocated may also be classified as ERECTION if not yet commissioned. This category is regularly reviewed and units reclassified as OPERATING at the appropriate time. Generally around 1% of all machines fall in this category.

FOR SALE If a machine is identified as being 'officially' FOR SALE, it receives this classification. Approx. 900 units in the Database (1.5%) are thus identified at this time. Note: the Database developer understands that a significant, but unknown number of machines classified as PARKED or SOLD, may be available for purchase. But these units are not classified as FOR SALE

unless the mine or some authoritative source has indicated their being 'on the market'.

REMOVED Often, mines do not report the final disposition of older equipment. In such instances that the machine is confirmed as being inactive, but without specific confirmation of having been SCRAPPED or otherwise, they are classified as "REMOVED". These records are maintained in the Database for clients who wish to perform analyses of historical shipments including machines no longer in service. Among inactive machines in the Database, this is the largest categorization with around 12% of the total Database population.

There are a few other miscellaneous classifications including DAMAGED, RETURNED, and UNKNOWN but these classifications account for far less than 1% of all machine listings.

### A/I

### 4 characters

Given the many different classifications in STATUS, some clients sought a simple way to select only machines that were active (or inactive). This field is intended to permit quick identification of such an "either/or" division of equipment between active machines (coded in this field as "A") and inactive ones ("I"). Active machines include all those with a status of OPERATING, MFG/SHIPPING, ERECTION, REERECTION. Machines that are not in operation at an active mine, but not decommissioned or for sale, are also coded "A" and given a status of "IDLED". Machines that are SCRAPPED or PARKED at an active or closed mine are coded "I". Roughly 80% of machines in the Database are active and coded "A". Users who are interested only in active machines should utilize the filter function on this field when performing searches/queries of the Database. However, users seeking to perform historical analysis (e.g. past shipments or historical populations) should be careful to include inactive ("I") machine records depending on when they were made inactive (refer to the STATUS DATE field below).

### STATUS DATE Text month/year

Text

This is the date when each machine's STATUS was last confirmed. For many of records it is the same as the date indicated in the RESPONSE field of the PRIMARY MINES file, as machine records have been confirmed through receipt of a machine 'inventory' list supplied by the mine, parent company or an authoritative third party. The status of many other machines is obtained through other sources that may not be mine-specific (OEM's annual shipments reports, specific manufacturer/ model shipment lists, etc.). For example, in one instance, a multi-national mining company source confirmed the operating status of all trucks at the company's mines worldwide. The individual truck listings indicate the dates their STATUS was updated, but there is no corresponding date in the RESPONSE field of PRIMARY MINES because this information did not come from the individual mines and did not cover all equipment at these mines. Note: if an OEM ships a piece of equipment to a mine in a given year, it is assumed that the equipment is operating at year-end (with a few exceptions like draglines or shovels with extended erection/ commissioning cycles). The STATUS DATE of 12/xx is assigned at year-end and remains in this field until a confirmation is obtained from the mine or other source at a future date. As a result, a small but not insignificant number of machines in the Database have a STATUS DATE of December of the year they were shipped. The operating status of more than 90% of all machines in the Database has been confirmed since their original ship date, and the status of most machines is confirmed on a regular basis. But users are cautioned to check the STATUS DATE for machines to determine how recently their operating status has been confirmed.

AUC

Text

Date

1

This field is updated each month and populated only for those records that have been A (added), U (modified), or C (status of the machine was confirmed) during the month prior to the given Database file's distribution to clients. This permits subscribers to the monthly updating service to track the changes made to the machine table each month when they receive an update of the database.

### UPDATE

### mo./day/year

Date this record was last updated. Note: this date may indicate an addition, change or confirmation. It is important to note that the record may be updated but not have the STATUS DATE updated (previous field) although this is infrequent. This field thus provides an indication of when a change was last made to this record, but NOT how recently the operating status was changed/ confirmed. Note that is some instances the STATUS DATE will vary significantly from the UPDATE date. For example, a directory listing of equipment may be published and the data entered in January 2011. But equipment listings may be known to have been compiled no more recently than October 2010. In this case, the STATUS DATE will read "10/10" while the UPDATE would read "01/15/11". The update field may be most useful when checking what machine records have been changed since the last version of the Database was received.

### CONTRACTOR LINK Integer

For those machines that are operated by a contractor, this field is populated with the ACCT # of that contactor's record in the PRIMARY MINES table. This permits searches by contract mining concern across all mines, while still identifying the equipment with the mine where it is operated, as each of these machines is also linked to the mine where it operates via the ACCT NO field. Although the MACHINE OPERATOR field would identify the contactor by name, linking the machines here makes it easier to query the data. There are approximately 100 contractors and 9,000 contractor machines identified in the database.

### RENTAL LINK

### Integer

Similar to the CONTRACTOR LINK above, this field links machines to the ACCT # of the rental company's record in the primary mines table. In some specific instances, a machine may be linked to both a contactor and a rental company in addition to the mine itself. There are more than 1,000 machines identified as being owned and rented by different rental companies.

### Table Name: PERSONNEL

This file contains the names and titles of key operating managers at the individual mines listed in the PRIMARY MINES file. The objective of this file is to provide one or more key contacts at the mines in The Database. It is not intended as a comprehensive personnel directory and it does NOT include senior executives at headquarters locations. Whenever a specific individual could not be identified for a given location, a record was inserted with a generic listing, e.g. "Mine Manager" to permit development of mailing lists to all mines if desired. NOTE: because many individuals do not wish to have their personal phone or fax numbers listed in a commercial data source such as this one, the Database does not attempt to list these individual numbers. All such contact numbers are confined to the mine-level and are contained only in the PRIMARY MINES file. Mailing lists, phone/ fax directories, and related reports can be generated by constructing queries combining the PRIMARY MINES and PERSONNEL files.

### ID

### auto

This field is a simple numerically-sequenced record identifier assigned by the ACCESS software when records are added. It has no significance or linkage to other tables/files.

## ACCT # Integer

This field links each PERSONNEL record to one, and only one PRIMARY MINES record. If a single individual has responsibility for two locations, he/she will appear as more than one PERSONNEL record linked to the two or more mines where joint responsibilities exist.

### **SURNAME** Text 24 characters

This field contains the surname of each individual in the file. When reported, the compound surnames of Spanish-speaking personnel are included in the appropriate sequence (*e.g. father's surname -mother's surname*). Titles (e.g. P.E.) are generally omitted.

### FIRSTNAME Text 16 characters

The individual's first name and middle name or middle initial is included here. Titles (e.g. Dr., Ing., etc.) are generally omitted.

# TITLE Text 40 characters

This field contains the individual's full management-designated title. Most titles are obtained directly from the mines or from industry directory listings. In some instances, generic titles may have been assigned by secondary sources (e.g. directories). With few exceptions, abbreviations have been omitted so that 'common language' searches will provide all listings for "General Manager".

### UPDATE Date mo./day/year

Date this record was last updated. Note: this date may indicate an addition, change or confirmation. It is important to note the latter category: if an individual's name and title are re-confirmed as accurate on a given date, that date is added to the UPDATE field even though no change to this record occurred. This field thus provides an indication of how recently each given individual is known to occupy the position listed herein.

# EMAIL Text 40 characters

Individual's email address. Only company/business email addresses are listed.

The above comments provide a summary of the content, interpretations and possible applications of each field in the Database files. There may be additional information available and clients are encouraged to contact the Database developer with any questions (see first page for contact information).

# **REGION: Equipment Database Geographic Classification of Mine Locations**

The REGION field in the PRIMARY MINES table contains a supra-national geographic classification of all mines and equipment in the database. This classification is arbitrary and does not affect any of the standard geographic field (county, state/province, country). To select a region for a database search or sort, simply go to the filter function and type the name in caps assigned to each of the mapped regions defined below. The territories are outlined according to the map below with some, but not necessarily all, of the primary countries within each territory listed.

## EUROPE / MIDDLE EAST:

Austria, Belgium, Bosnia & Herzeg., Bulgaria, Cyprus, Czech Republic, Estonia, Finland, France, Germany, Greece, Iceland, Iran, Israel, Italy, Jordan, Macedonia, Montenegro, Norway, Oman, Portugal, Qatar, Romania, Saudi Arabia, Serbia, Slovakia, Spain, Sweden, Switzerland, Turkey, United Arab Emirates, United Kingdom

NORTH AMERICA: Bahamas, Canada, U.S.; all states and provinces including

RUSSIA / CIS: Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan

### ASIA:

China, India, Japan, Laos, Malaysia, Mongolia, Myanmar, South Korea, Sri Lanka, Taiwan, Thailand, Vietnam

# LATIN AMERICA:

Argentina, Bolivia, Brazil, Chile, Colombia, Dominican Rep., Guyana, Honduras, Jamaica, Mexico, Panama, Peru, Suriname, Uruguay, Venezuela

# AFRICA:

Algeria, Angola, Botswana, Burkina Faso, Central African Republic, Congo (formerly Zaire), Egypt, Eritrea, Gabon, Ghana, Guinea, Ivory Coast, Kenya, Lesotho, Liberia, Madagascar, Mali, Mauritania, Morocco, Mozambique, Namibia, Niger, Nigeria, Senegal, Sierra Leone, Somalia, South Africa, Tanzania, Togo, Tunisia, Zambia, Zimbabwe

# AUSTRALASIA: Australia, Indonesia, New Caledonia, New Zealand, Papua New Guinea, Philippines Solomon Island

The pages that follow contain tables for each of the 8 products, listing the models included in the Database by manufacturer and size class. The size classes group competing models based on a range of a comparable size metric for each product, as follows:

PRODUCT	# ACTIVE	METRIC	SIZE-CLA	SSES				
Trucks	28,000+	Rated Payload Capacity (90mt+)	90-110	127-150	154-190	218-255	290	308-363
Electric Shovels	1,600+	Rated Payload Capacity (20mt+)	20-25	30-35	40-50	63	77	90+
Hyd Excavators	3,200+	Rated Payload Capacity (20mt+)	20-25	30-35	40-50	63	77	
Wheel Loaders	3,000+	Rated Payload Capacity (20mt+)	20-25	30-35	40-50	63		
Draglines	500+	Rated Payload Capacity (20mt+)	20-30	40-55	70-90	100-120	140	>150
Dozers	5,700+	Net Power Rating (375kW+)	350-450	550-650	750+			
Motor Graders	2,000+	Net Power Rating (160kW+)	160	200	350+			
Drills	2,000+	Net Pulldown Rating (18,000kg+)	<23	27	34	45	54	>60

The models listed are identified as being current, previous or obsolete as follows:

- **BOLD**: current OEM models on offer
- *ITALICS*: obsolete models (all units in the database are inactive)
- REMAINDER: previous OEM models that are not currently being produced but have active units in the Database, ie operating at surface mines around the world

Trucks			
Size Class (PL)	Manufacturer	Current Model(s)	Previous Model(s)
90-110 m.t.	BelAZ	7512x, 7514x, 7519x, 75570, 7558x	7519
	BEML	BH85-1, BH100-1	
	Caterpillar (Bucyrus-Unit Rig)	777D,-F,-G	777,-B,-C, 776x,MK30, -B, M100, MT3000
	Hitachi	EH1700-3	EH1600, EH1700, R90,-C, R100
	Komatsu	HD785-7	HD785-x, 325M, 330M, 445E, HD985-3,-5
	SANY	SRT95	
	Terex (including North Hauler)	TR100,-C	33100, 33-11C/D/E, MK24
	XEMC	SF31904C, SF33901A	
127-150 m.t.	BelAZ	7513x	
	Caterpillar (Bucyrus-Unit Rig)	785D	785, -B, -C, 784x, MT3300,-AC, MK33
	Hitachi	-	R130, R130B, R150, CH210
	Komatsu	HD1500-7	HD1500-5, 530M, 510E
154-190 m.t.	BelAZ	7517x, 75180	7521x
	Caterpillar (Bucyrus-Unit Rig)	789D	788, 789,-B,-C, MT3600, -B, MK36, MT3700
	Hitachi	EH3500ACII, -AC3	R170, -C, R190, -C, EH3000, EH3500
	Komatsu	730E-7, -8	170x, 630E, 685E, 730E
	Liebherr	T252	KL2420
	XEMC	SF32601	
218-255 m.t.	BelAZ	7530x, 7531x	
	Caterpillar (Bucyrus-Unit Rig)	793D,-F, MT4400AC	793, -B, -C, MT4000,-DC
	Hitachi/Euclid	EH4000ACII,-AC3	R280, R260, EH4000, EH4500,-2
	Komatsu	830E-17AC,-1AC,-1AT, 860E-1KT	830E,-15,-17,-1LE, 860E-1K
	Liebherr	T262	KL2450
	MCC (Xiangtan)	HMTK400A	
	XEMC	SF33900	
290 m.t.	Caterpillar	MT5300D AC	
	Hitachi	EH5000AC-3	EH5000,-ACII
	Komatsu	930E-4AT, -4SE	930E-xx
	Liebherr	TI272	
	XEMC	SF35100	
308-363 m.t.	BelAZ	7560x, 75710	
	Caterpillar (Bucyrus-Unit Rig)	795F AC, 797F, MT5500AC, MT6300AC	797, -B, MT5500, -B
	Komatsu	960E-1, -1K, 960E-2,-2KT	960E-1, 960E-2K
	Liebherr	T282C, T284	Т282, -В
	MCC/Xiangtan	HMTK600B	

also included: Bryan, Kress, Norinco Group, Rimpull, MCC/Elite, Perlini

Electric Shovels			
Size Class (PL)	Manufacturer	Current Model(s)	Previous Model(s)
20-25 mt	Caterpillar (Bucyrus)	7182	190B, 195Bxx, 181M, 182M
	OMZ	EKG-8US, EKG10x, EKG12x, EKG14	EKG-5x, EKG-8,-U
	Joy Global/P&H	1900AL	1900, 1900A
	Taiyuan	WK10B, WK12C	
30-35 mt	Caterpillar (Bucyrus)	7295HD	191M, 280B, 290B, -BI, -BII
	OMZ	EKG-15,-15M	
	Joy Global/P&H		2100,-B,-BL,-XP,-XPA
	Taiyuan	WK20	
40-50 mt	Caterpillar (Bucyrus)	7295	295B,-BI,-BII,-BIII, 201M, 295HR
	OMZ	EKG-18R, EKG-20KM	EKG-18, EKG-20, EKG-1500R
	Joy Global/P&H	2300XPC	2300,-XP,-XPA,-XPB
	Taiyuan	WK27	
63 mt.	Caterpillar (Bucyrus)	7395	395B, -BI, -BII, -BIII, 395HR
	OMZ	EKG-32R	
	Joy Global/P&H	2800XPC,-AC	2800XP, -XPA, -XPB
	Taiyuan	WK35	
77 mt	Caterpillar (Bucyrus)	7495HD	495B, -BI, 301M, 351M, 595B, 495HD
	Joy Global/P&H	4100C, -Cboss, -Cboss AC	4100, 4100A
90 mt+	Caterpillar (Bucyrus)	7495,-HD,-HF	495BII,-HR,-HR2,-HF
	OMZ	EKG-50	
	Joy Global/P&H	4100-XPC,-AC	4100TS,-C,-XPB, 5700,-XPA
	Taiyuan	WK55	

Size Class (PL)	Manufacturer_	Current Model(s)	Previous Model(s)
<u>20-25 mt</u>	BEML	BE1600	
	Caterpillar (Bucyrus, O&K)	6018, 6020B	5130,-B, RH90C
	Hitachi	EX1900-6	EX1900,-5, EX1800,-3
	Komatsu	PC2000-8	PC1800,-6, PC1600, H185, H135
	Liebherr	R9250	R994, R992
30-35 mt	Caterpillar (Bucyrus, O&K)	6030	RH120C,-E, 5230, -B
	Hitachi	EX2500-6, EX2600-6	EX2500,-3,-5
	Komatsu	PC3000-6, -8	PC3000-x, H255S, H285S
	Liebherr	R9350	R994B
40-50 mt	Caterpillar (Bucyrus, O&K)	6040, 6050	RH170,-B, RH200
	Hitachi	EX3600-6, EX5500-6, EX5600-6	EX3500,-2, EX3600,-5, EX5500,-5
	Komatsu	PC4000-7, PC5500-6	PC4000,-6, PC5500, H455S
	Liebherr	R9400	R995
63 mt.	Caterpillar (Bucyrus, O&K)	6060	RH340,-B
	Hitachi	EX8000-6	EX8000
	Komatsu	PC7000, PC8000-6	PC8000, H485, H655, H685
	Liebherr	R996B	R996
77 mt	Caterpillar (Bucyrus, O&K)	6090	RH400
	Liebherr	R9800	

also included: Joy Global

	Wheel Loaders			
Size Class (PL)	Manufacturer	Current Model(s)	Previous Model(s)	
20-25 mt	Caterpillar	992K, 993K	992,-B,-C,-D,-G	
	Komatsu	WA800-3x, WA900-3x	WA800,-2,-3, WA900,-2,-3	
	Joy Global/P&H (LeTourneau)	L950	L800, L1000	
30-35 mt	Caterpillar	994Н,-К	994,-D,-F	
	Komatsu	WA1200-6	WA1200-3,-3E0	
	Joy Global/P&H (LeTourneau)	L1150, L1350	L1100, L1400	
40-50 mt	Joy Global/P&H (LeTourneau)	L1850	L1800	
63 mt	Joy Global/P&H (LeTourneau)	L2350		
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also included: Terex

Draglines			
Size Class	Manufacturer	Current Model(s)	Previous Model(s)
9 c.m.	Caterpillar (Bucyrus, Marion)	*	380W, 7400, W700
13 c.m.	Caterpillar (Bucyrus, Marion)	*	480W, 7450
	Joy Global/P&H (incl. Page)	*	732
17 c.m.	Caterpillar (Bucyrus, Marion)	*	7500, 680W
	Joy Global/P&H (incl. Page)	736	
31 c.m.	Caterpillar (Bucyrus, Marion)	8000	1260W, 7820, W2000
	Joy Global/P&H (incl. Page)	752	
57 c.m.	Caterpillar (Bucyrus, Marion)		1570W, 8050
	Joy Global/P&H (incl. Page)	757, 757LR	
80 c.m.	Caterpillar (Bucyrus, Marion)	8200	1570WS
	Joy Global/P&H (incl. Page)	9020	
107 c.m.	Caterpillar (Bucyrus, Marion)	8750	2570WS
	Joy Global/P&H (incl. Page)	9160	

also included: Manitowoc, OMZ, HEC

# Dozers (crawler)

Size Class	Manufacturer	Current Model(s)	Previous Model(s)
350-450 kW	Caterpillar	D10T	D10, -L, -N, -R
	Komatsu	D375A-5xx	D375A, -2, -3, D355A
550-650 kW	Caterpillar	D11T, D11T/CD	D11N, -R
	Komatsu	D475A-5xx	D475A, -2, -3, D455A
750 kW+	Komatsu	D575A-3A	D575A, -2

also included: FIAT-ALLIS

Dozers (wheel)				
Size Class	<u>Manufacturer</u>	Current Model(s)	Previous Model(s)	
350-450 kW	Caterpillar	834H, 844H	834, -B, -G, 844, -B, -G	
550-650 kW	Caterpillar	854K	854G	
	Komatsu	WD900-6	WD900-3x	
	Joy Global/P&H (LeTourneau)	D950		

Graders				
Size Class	Manufacturer	Current Model(s)	Previous Model(s)	
160 kW	Caterpillar	14M	14G, -H	
	Komatsu	GD755-5R, -Y		
200 kW	Caterpillar	16M	16G, -H	
	Komatsu	GD825A-3	GD825A, -2	
350kW+	Caterpillar	24M	24H	

Drills			
Size Class (PL)	<u>Manufacturer</u>	Current Model(s)	Previous Model(s)
18,000 kg	Atlas Copco (Ingersoll-Rand)	DM25SP, DM45SP	DM40, DM45, DM50
(< 23)	Caterpillar (Bucyrus, Svedala/Reedrill)	MD6240	SK35I, SK45I,SK40, SKT
	Sandvik (Driltech/Mission)	D245SP, D40KS	D30K, D40K, D45K
27,000 kg	Atlas Copco (Ingersoll-Rand)	DML-SP, PV235	DM50XL, DM50, DM60
	Caterpillar (Bucyrus, Svedala/Reedrill)	MD6290	SK50I, SK60I, SKF, 35R
	Sandvik (Driltech)	D55SP, T60KS	D50K, D60K
34,000 kg	Atlas Copco (Ingersoll-Rand)	DM70E, PV271, PV275	DMM, DMM2, DM70
	Caterpillar (Bucyrus, Svedala/Reedrill)	MD6420	45R, 50R, SK770, SK75, SKS
	Sandvik (Driltech)	D75KS	D75K, D80K
45,000 kg	Atlas Copco (Ingersoll-Rand)	DMM3, DMH	
	Caterpillar (Bucyrus, Marion)	MD6540	39R, 47R, 55R, M3, SKSS, SKS-W
	Joy Global/P&H (incl. G-D)	250XP-ST	GD70, 70A
	Sandvik (Driltech)	DR460	D90K
54,000 kg	Atlas Copco (Ingersoll-Rand)	PV351	
	Caterpillar (Bucyrus, Marion)	MD6640	39R, 49R (-H,_II,-III), 60R, 61R, M4
	Joy Global/P&H (incl. G-D)	100XP	GD100, 100A, 100B
	Sandvik (Driltech)	D90KS, 1190E	GD100, 100A, 100B
68,000 kg	Caterpillar (Bucyrus)	MD6750	49HR, 59HR, 59R
(>60)	Joy Global/P&H (incl. G-D)	120A	GD120, 320XPC

Also included: Gardner-Denver, Revathi, Robbins, Rudgormash,