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Ministry of Labour Underground Diesel Equipment Survey for Mine Operators and Contractors

Glenn Staskus
Provincial Specialist Mining
Ontario Ministry of Labour

Ontario Ministry of Labour
Occupational Health and Safety Branch

1 Ministry of Labour




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Purpose

The Ontario Ministry of Labour (MOL) is surveying mine operators and mining contractors to obtain information regarding underground diesel fleets.

The information collected from completed surveys will be a valuable resource in the work undertaken by the Ministry in consultation with the Diesel Subcommittee and the Mines Legislation Review Committee (MLRC).

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Purpose

Continued review of the diesel requirements set out in sections 182, 183, 183.1 and 183.2 of Regulation 854 (Mines and Mining Plants) under the Occupational Health and Safety Act (OHSA).

The information provided may assist in determining potential impact of possible future recommendations to regulatory requirements.

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MOL's Vision, Mission and Implementation

The Ministry of Labour's (MOL's) occupational health and safety mandate is to set, communicate and enforce occupational health and safety legislation and its regulations with respect to Ontario workplaces.

The ministry's strategic objective of reducing or eliminating workplace injury or illness is consistent with that of its occupational health and safety system partners, including the Health and Safety Associations and the Workplace Safety and Insurance Board.

The prevention of work-related injuries and illness is an integral part of maintaining safe and healthy workplaces and a competitive and sustainable economy.


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Ministry of Labour mandate

The MOL's mandate of protecting the health and safety of workers on the job is guided by its Safe at Work Ontario (SAWO) strategy and enforced by workplace compliance to the *Occupational Health and Safety Act* (OHSA) and its Regulations.

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Past Survey's Conducted 1990

The Mines Legislation Review Committee (MLRC) first established a Diesel Subcommittee in 1989 to review workplace environment regulations with respect to underground diesels equipment usage.

In October 1990, the "1990 Ontario Underground Diesel Equipment and Procedure Survey" was published by Mining Health and Safety Branch of the MOL.

This survey was invaluable during the discussions to change the Regulations for Mines and Mining Plants with respect to diesels and the MLRC recommendation to amended the regulation in 1994.

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Past Survey's Conducted

Provided information to assist with changes to:

- remove weekly gas tests at the operator replaced with testing at the request of a worker
- removal of prescribed logbooks for each piece of equipment
- inclusion of the CAN/CSA M424.2-M90, "Non-Rail-Bound Diesel-Powered Machines for Use in Non-Gassy Underground Mines" into regulation.
- set exposure to respirable combustible dust (RCD) to a 1.5 mg/m³ level.

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Past Survey's Conducted

In May 1993, the Diesel Subcommittee was redirected by the MLRC to "look at advancing technology and how it affects volumes of air and testing".

In 1996 mines were given the opportunity to provide additional information in the form of another Diesel Survey that was conducted.

As a result the Diesel Subcommittee supported lowering the fuel sulphur content from 2500 to 500 ppm and on highway diesel fuel is now allowed in underground mines.

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Past Survey's Conducted

The information from the 1996 Survey has also been used and quoted by the Diesel Emission Evaluation Program (DEEP), the completed Canadian mining industry research initiative. The objective of DEEP was to develop and coordinate research to reduce exposure to diesel emissions.

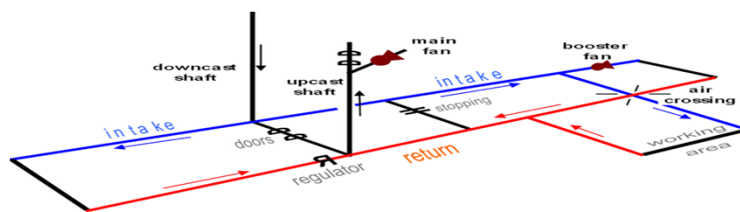


Figure 1.1. Typical elements of a main ventilation system

Past Survey's Conducted

In 2001, the Diesel Subcommittee continued with its work concentrating on the improvements to air quality that could be obtained through improved maintenance practices. As a result this Diesel Survey was conducted with by the MOL with endorsement of the MLRC.

A detailed questionnaire was distributed to all mining operations in the Province by the Ministry of Labour in 2002.

Information requested included make up of equipment fleets, maintenance programs, and detailed exposure data of workers in underground mines.

OVERVIEW 2002 DIESEL SURVEY RESULTS

In early 2002 all Ontario mines were requested to supply information on the make up of their underground diesel fleet plus respond to a questionnaire.

Fleet Information

- 30 mines provided fleet information, 28 answered questionnaire
- 1952 units with 248,033 brake horse power (bhp); down from 2250 units with 257,906 bhp in 1996
- Number of units decreased by 13% but the horsepower only decreased 4% from 1996
- Heavy duty vehicles (LHDs, trucks) represent 49.8% of installed horsepower or 123,564 bhp, down from 60% in 1996
- Personnel carriers increased from 267 units in 1996 to 427 units

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OVERVIEW 2002 DIESEL SURVEY RESULTS


Engines

- Engines rated at 200 bhp or greater represent 43% of installed power versus 17% in 1996
- Electronically controlled engines represented 320 units and 35.6% of the installed power versus only 11% in 1996
- 7 diesel particulate traps were in use, a direct result of the Diesel Emission Evaluation Program (DEEP).

Other Information

- Mines used ~ 30.6 mL of diesel fuel in 2002
- Responses on engine maintenance show most mines had a good planned maintenance program.

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OVERVIEW 2002 DIESEL SURVEY


Respirable Combustible Dust (RCD) data submitted

- 25 mines submitted 1923 personal samples taken on underground workers
- only 0.3% or 5 samples exceeded 1.5 mg/m³ regulated limit.
- 93.3% of samples reported 0.40 mg/m³; 96.5% reported 0.50 mg/m³; 98% reported 0.60 mg/m³.

Highest average concentrations:

- mucking, bolting and shotcreting, 0.2 - 0.3 mg/m³.

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Regulation Amendment 2012

RCD Changed Total Carbon

- The flow of air must reduce the time-weighted average exposure of a worker to total carbon to not more than 0.4 milligrams per cubic metre of air

Exhaust Limit

- An employer shall ensure that the undiluted exhaust emissions from diesel-powered equipment contain less than 600 parts per million by volume of carbon monoxide.

Testing Procedures Developed in Consultation JHSC

- Each individual piece of equipment must be tested under consistent conditions so that results from different tests can be compared.

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Diesel Survey 2014 Survey Overview



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Diesel Survey 2014 Survey Overview

The Ontario Ministry of Labour sent out a voluntary survey to mine operators and mining contractors June 4, 2014 requesting information pertaining to underground diesel equipment. The suggested date for the completion of the survey was September 8th 2014.

We continue to encourage the completion of the voluntary survey and would like to remind those who choose to participate to direct any question and/or submit the completed survey directly to one of the following:

E-Mail: Diesel.Survey2014@ontario.ca

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Diesel Survey 2014 Survey Overview

To ensure that the information provided is used for the intended purpose of analyzing and summarizing the results into a final report containing aggregate data, we asked that completed surveys are provided back to the ministry via the e-mail address provided in the survey.

This important work was developed in consultation with the Diesel Subcommittee of the Mining Legislative Review Committee (MLRC).

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Thank you Questions ?

After the Conference;

Contact the Provincial Coordinator's Office, Ministry of Labour Operations Division 933 Ramsey Lake Road, Building B 933, Sudbury, ON Sudbury (Ontario)P3E 6B5

Telephone: (705) 670-5695

Fax: (705) 670-5698

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