GLOSSARY OF TERMS

Acute Exposure - Repeated or single dose contact with a chemical for less than 24 hours.

Chronic exposure - Repeated contact with a chemical for more than 3 months.

Lowest observable adverse effect level (LOAEL) - The lowest dose of chemical in a study that produces statistically or biologically significant increases in frequency or severity of adverse effects between the exposed population and its appropriate control.

Maximum contaminant level (MCL) - A maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

Maximum risk level (MRL) - The estimate of daily human exposure to a substance that is likely to be without an appreciable risk of adverse noncancerous effects over a specified duration of exposure.

No observed adverse effect level (NOAEL) - The dose of chemical at which no statistically or biologically significant increases in frequency or severity of adverse effects between the exposed population and its appropriate control. Effects may be produced at this dose, but they are not considered to be adverse.

Permissible exposure limit (PEL) - A maximum allowable atmospheric level of a substance in workplace air averaged over an 8-hour shift.

Reference concentration (RfC) - An estimate of a daily contaminant exposure to the human population (including sensitive subgroups) that are likely to be without appreciable risk of deleterious effects during a lifetime.

RMA acute fence line criteria - Chemical concentrations in air that are allowable for remedial activities at RMA which are applied to fence line and visitor accessible locations. These criteria are permitted for short-term exposure (less than 24 hour duration). An exceedance would require work modifications to reduce future emissions. Two criteria were established:

acute reference concentration (ARC) - An allowable air concentration, based on animal and/or human toxicity data, derived with the intent of negligible potential for adverse health impacts to the public. Any reports of concentrations exceeding the ARC will result in work modifications to reduce emissions.

maximum acute reference concentration (MARC) - An allowable air concentration derived from a lowest observed adverse effect level based on animal and/or human toxicity data, so that exposure to these levels

would be expected to present only minor potential for adverse health effects to the public. Any reports of concentrations exceeding the MARC will require remediation operations to be ceased immediately. Work modifications will be made to reduce future emissions.

RMA chronic fenceline criteria - Health based chemical concentrations in air that are allowable for remedial activities at RMA which are applied to fence line and visitor accessible locations. These criteria are designed for long term exposure (15 year exposure of remedial activities). The development of air criteria is based on EPA risk assessment methodology using chronic reference concentrations (RfCs) and cancer slope factors. Chronic cancer criteria were calculated based on an excess lifetime cancer risk of one in one million.

Short term exposure limit (STEL) - The maximum concentration to which workers can be exposed for up to 15 minutes continually. No more than four excursions are allowed per day, and there must be at least 60 minutes between exposure periods. The daily TLV-TWA may not be exceeded.

Subacute exposure - Repeated contact with a chemical for 1 month or less.

Subchronic exposure - Repeated contact with a chemical for 1 to three months.

Threshold limit value (TLV) - The maximum concentration of a substance to which most workers can be exposed without adverse effect. TLV is a term used exclusively by the ACGIH..

ACRONYMS

ACGIH American Conference of Governmental Industrial Hygienists
ARC Acute Reference Concentration
ATSDR Agency of Toxic Substances and Disease Registry
EPA Environmental Protection Agency
CDPHE Colorado Department of Public Health and Environment
LOAEL Lowest Observed Adverse Effect Level
MARC Maximum Acute Reference Concentration
MCL Maximum Contaminant Level
MRL Minimum Risk Level
NIOSH National Institute of Occupational Safety and Health
NOAEL No Observed Adverse Effect Level
OSHA Occupational Safety and Health Administration
ppb parts per billion
ppm parts per million
PEL Permissible Exposure Limit (up to 8 hours per day in a 40 hour work week)
REL Recommended Exposure Level (up to 10 hours per day in a 40 hour work week)
RfC Reference Concentration
RMA Rocky Mountain Arsenal
RMPDC Rocky Mountain Poison and Drug Center
RTECS Registry of Toxic Effects of Chemical Substances
STEL Short Term Exposure Limit (15 minute ceiling)
TLV Threshold Limit Value
TWA Time Weighted Average.

EPA Weight-of-Evidence Classification for Carcinogens

Each toxicity summary lists the EPA weight-of-evidence classification for carcinogens. This assesses the likelihood that the substance is a human carcinogen. The classification description is as follows:

A **Carcinogenic to Humans** - sufficient evidence from epidemiologic studies to establish a causal association between exposure to agent and cancer

B **Probable Human Carcinogen** - evidence of human carcinogenicity from epidemiologic studies inadequate, but animal evidence supports carcinogenicity

C **Possible Human Carcinogen** - limited evidence of carcinogenicity in animals in the absence of human data

D **Not classified** - inadequate evidence of carcinogenicity

E **No evidence of Carcinogenicity to Humans** - no evidence based on both animal data and human epidemiologic evidence

Sufficient evidence - There is an increased incidence of malignant tumor or combined malignant and benign tumors in a well-designed and conducted study. Benign tumors are combined with malignant tumors only if they have the potential to progress to malignancies of the same morphologic type.

Limited evidence - The available evidence is based upon a single species, strain, or experiment or that experimental design is flawed by inadequate dosage levels, inadequate duration of exposure, inadequate follow-up, poor survival, too few animals, or an increase in benign tumors only.