Foreword

The foundations of our communities are literally built out of aggregate. In British Columbia, about 11 tonnes of sand, gravel and crushed rock per person per year are used to maintain infrastructure such as roads, sewers and utilities. An additional 2 to 4 tonnes are used for the construction of new homes, public and commercial buildings and schools. All told, the annual per capita consumption of aggregate in BC is about 14 tonnes -- the equivalent of one fully loaded dump truck.

British Columbia has abundant sand, gravel and quarry rock resources. Many of our communities have local aggregate resources that can supply their own consumption needs well into the foreseeable future. These deposits are formed and transported by natural geological process and cannot be relocated. The extraction of aggregate from deposits located within and adjacent to local communities often leads to social and environmental conflicts.

The aggregate industry largely develops local resources for local markets. Aggregate is needed as the raw material for building and maintaining a community's infrastructure and buildings, and it is least expensive when extracted, processed and distributed locally. Aggregate operations can be significant contributors to the provincial and local economies. The 1998 provincial production value for construction aggregate was more than $400 million dollars, greater than that of gold production for the same period.

This handbook provides technical information, guidance and best management practice options to sand and gravel pit and rock quarry operators for many aspects of planning, operating and reclaiming aggregate operations in British Columbia. Best Management Practices (BMPs) are tried and true solutions to common pit and quarry issues, challenges and problems.

Using the BMPs and the other planning tools described in this handbook may help producers supply the aggregate needs of local communities while supporting local economies, respecting neighbourhood values, and operating with environmental responsibility.

Incorporating BMPs into an aggregate operation may:

- provide for effective, economical and safe stormwater management and discharge,
- provide for effective and safe erosion and sediment control,
- reduce siltation of aquatic habitats and storm water conveyance systems,
- control dust through minimizing exposed soil areas, re-establishing vegetation and promoting the use of buffers,
- aid in the planning, design and implementation of settling ponds for process water and the proper disposal of the resultant mud,
- control noise emissions through strategic placement of points sources and buffering structures, and reductions in transient noise generating activities,
- discourage garbage dumping at aggregate operation sites,
- provide pollution control through equipment management and maintenance, proper fuel handling, spill avoidance and emergency planning,
- aid in planning for and implementation of reclamation for subsequent land uses,
- promote an ethic of environmental responsibility and land use stewardship,

- reduce traffic conflicts through planning and driving protocols, and
- aid in reducing visual interruptions thought site layout and design.

This handbook was written and compiled by the British Columbia Ministry of Energy and Mines (MEM), with the assistance of a dedicated committee of stakeholders. The authors have drawn heavily on previous work by aggregate producers and professionals from around the world.

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The Aggregate Operator's Best Management Practices Handbook for British Columbia (Handbook) is intended as a general guide to assist aggregate operators. As a general guide, the practices set out in this Handbook may not be appropriate for all circumstances. Accordingly, users of this Handbook must use their own judgement as to whether the practices set out in this Handbook are appropriate for any particular situation.

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