

## **Comparison of Mine2-4D versus MineSched for Mine Scheduling**

by  
Martin Drennan, P.Eng., B.Eng., and  
Dave Kenwell, Python Mining Consultants

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**WHITE PAPER**



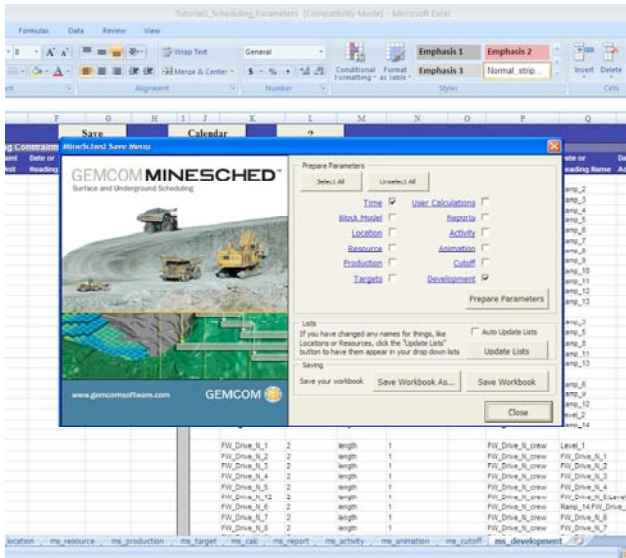


Fig. 2 - One of the MineSched setup screens.

complicated. Once installed, it operates automatically. In Mine2-4D, you can arrange to have certain tasks run automatically at a pre-set time period, such as detailing a ramp. MineSched has this capability, but it is less detailed.

In comparison to Mine2-4D's method of sequencing dependencies, MineSched allows the modification of heading definitions in Excel or in the Surpac window. Therefore, it is straightforward to create a development heading for each heading group in a workbook-based spreadsheet and complete the work for each group consecutively. You can arrange for different crews to work at their maximum rates and also modify planning and sequencing details, which makes scheduling and managing large mines more organized.

## Reporting and Presentation

MineSched can export any combination of data directly into Microsoft Project or Microsoft Excel. 3D animations can be created for reporting, sharing with other applications, and transferring results to other persons. MineSched displays Gantt charts in Microsoft Project, which is more open and flexible. Because of its ability to export data directly to standard Microsoft Project files, MineSched has the flexibility and power to work with other project management software including Primavera. We have found MineSched's customization, template creation and graphical presentation functions advantageous for producing customer reports quickly.

Excel spreadsheet users will find working in MineSched substantially more user friendly than Mine2-4D. With Excel's auto-fill and copying capabilities, there is no need to retype data, which is a shortcoming of Mine2-4D. MineSched can also output to standard Microsoft Project files. This is advantageous for companies whose IT environments and users are heavily Microsoft-oriented, like some of our clients. It also makes the MineSched learning curve significantly shorter.

MineSched supplies a selection of drop-down menus, which make the entire setup process fast and intuitive. From the resources tab, users can arrange the work for various development or production crews and assign resource capacities.

MineSched lists segments in the order in which they will be mined and splits them by resources. The software only allows the scheduling of one activity per crew per period, which maintains an orderly mining process. Alternatively, we have noted Mine2-4D's automatic sequencing capability; however, setting it up is

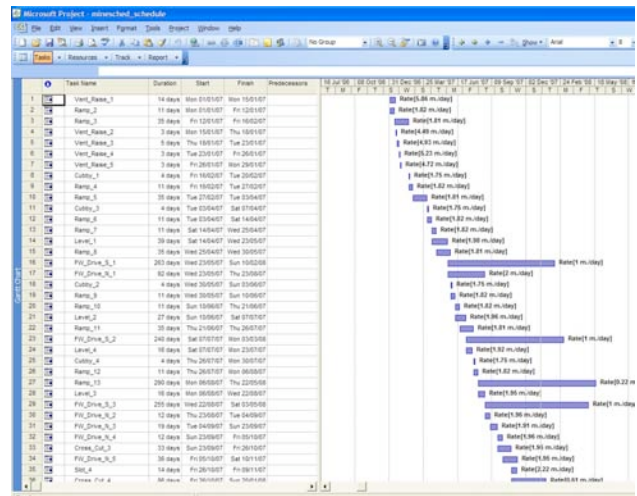
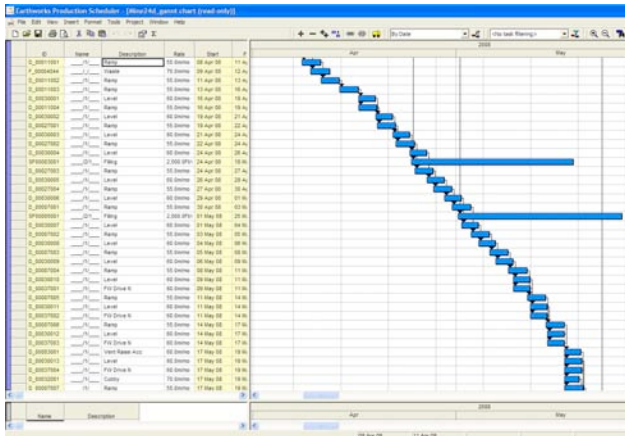


Fig. 3 - MineSched output to Microsoft Project.



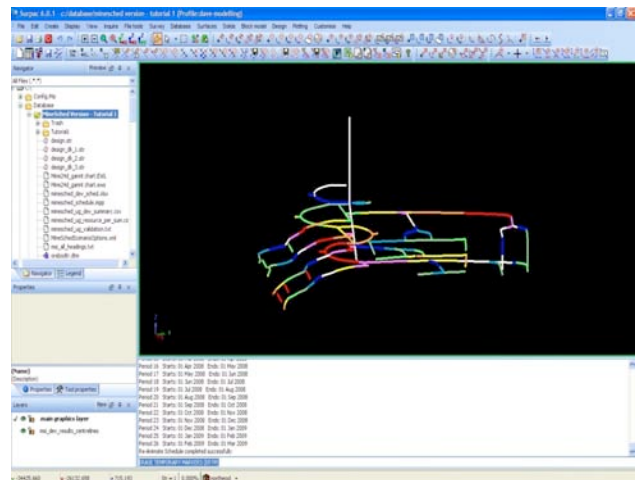
**Fig. 4 - Mine2-4D output to Earthworks Production Scheduler software.**

Mine2-4D does not interface directly with Microsoft Office applications, but does use Earthworks Production Scheduler (EPS). With modest customization capabilities, Mine2-4D results export to an EPS Gantt chart or a csv file, which can be pulled into an unformatted Excel workbook. Therefore, you must re-format the data to use it with other software besides EPS. Overall, more work is involved to produce reports with Mine2-4D, and if you want to share schedules among staff, they must have EPS installed.

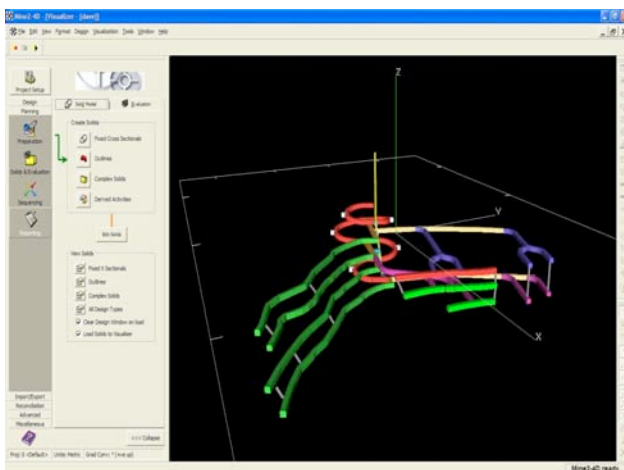
As we work with clients who have Mine2-4D, we appreciate MineSched’s ability to produce schedules in the Mine2-4D format that clients can use. MineSched has the flexibility to import/export to/from a variety of formats, including Datamine, Vulcan and AutoCAD files. As standalone software, Mine2-4D works best with the Datamine mine planning system and has little ability to import third-party files like Surpac.

## Scheduling and Validation

MineSched makes navigating changes easy. You can adjust parameters as necessary and automatically reprocess the schedule. If you need to determine what the schedule will look like with an extra crew, just add in the information and within minutes, MineSched generates a new schedule. Mine planners can explore alternative scenarios and schedules easily.



**Fig. 5 - A MineSched visual.**



**Fig. 6 - A Mine2-4D visual.**

In Mine2-4D you cannot easily conduct “what-ifs” and change parameters and simply re-run the schedule. Instead, Mine2-4D requires you to start at the beginning when items change and build the entire schedule again, which is time-consuming. In addition, Mine2-4D does not provide an alert if you make an error when you are changing parameters and trying out different scenarios. The software allows you to keep scheduling; thus, you can miss the error. MineSched stops scheduling at a heading if there is a mistake, so you can see the error immediately. You can make adjustments, and the software will reprocess the data automatically.

## Training

The surge in mining operations globally has brought about a shortage of mine planners. Recently, we have seen a combination of dynamics: personnel resistance to learning the Mine2-4D software package due to its difficulty and company reluctance to switch scheduling software because they have experienced Mine2-4D users. Both issues could impact the availability of skilled Mine2-4D users in the future. From our experience, MineSched is easier to learn than Mine2-4D. When we have brought new staff on board, they have been able to begin using the MineSched software in a relatively short period of time.

## Conclusion

In summary, both scheduling packages offer a comprehensive range of functionality for generating equivalent results. When scheduling is contracted outside of the organization, companies may think there are few alternatives beyond employing consultants with Mine2-4D experience, especially if companies wish to sustain their own data formats and knowledge base. However, companies can convert from Mine2-4D to MineSched with relative ease. Although MineSched requires users to employ new terminology, it takes little time for them to become proficient. If given a choice, we always prefer to work with MineSched.

**Martin Drennan, P.Eng. B.Eng.** is Principal Engineer for Python Mining Consultants Inc. and Chair of the Canadian Institute of Mining, Metallurgy, and Petroleum (CIM)-Metal Mining Society (MMS). He obtained his Bachelor's Degree in Engineering in 1991 from Laurentian University in Sudbury, Ontario, Canada.

**Dave Kenwell**, Engineering Technician with Python Mining Consultants Inc., is completing his final year of the Mine Engineering Cooperative Education Program at Laurentian University in Sudbury, Ontario. He expects to receive his Bachelor of Engineering Degree in May 2009.

*Based in Hamilton, Ontario, Python Mining Consultants provides all the engineering services necessary to perform basic scoping studies, to full feasibility work, and everything in between. Python's staff possesses a range of mining experience in base metals and gold with strong competency in both development and production scheduling. Python has consulted for companies with operations in Mexico, Ghana, Mongolia, Brazil, the United States, and many parts of Canada, including Manitoba, Quebec, Ontario and British Columbia. The firm's web site can be found at [www.pythongroup.ca](http://www.pythongroup.ca).*