
Socio-economic Effects Management Plan Annual Report

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1 Introduction

Elkview Operations (EVO) has committed to annual summary reports on the follow management plans as part of the Socio-Economic Effects Management Plan.

- Noise
- Blasting and Vibration
- Air Quality and Dust Control
- Reclamation and Closure
- Visual Quality
- Socio-economic Effects

These management plans outline actions which EVO completes to mitigate impacts from the Baldy Ridge Extension Project (BRE). Below is a summary of the status of each of these plans monitoring actions, any changes to the planned actions, and feedback received from communities on those actions.

1.1 Project Status

BRE Construction began in December 2016 and Operations started in January 2017. Construction/operations started in Baldy Ridge 6 (BR6) pit and consisted of:

- placing a skid shack for power;
- adding a portable washroom;
- creating a lay-down area for storage;
- removal of a power line;
- road construction and upgrades;
- overland belt protection;
- spoiling of material; and
- blasting.

EVO paused activities in BR6 (Appendix A) pit on September 19, 2017 and did no work within the BRE footprint in 2018. Activities have resumed within the BRE footprint in the first quarter of 2019 and will continue throughout 2019.

2 Noise

Activities at EVO include mining, processing, maintenance, coal storage and rail loading coal. All of these activities generate sound that may be audible beyond the mine site boundary and could become more noticeable as future mining activity progressively moves closer to residences and infrastructure. EVO is committed to working with the surrounding community to ensure that noise levels generated from EVO do not exceed recommended guidelines defined within the Noise Control Plan.

The primary objective of the Noise Control Plan is to ensure that noise levels do not exceed daytime (7:00 am to 10:00 pm) and nighttime guidelines. This will limit any potential noise nuisance to the local community and wildlife.

Critical separation distances from mining activities and local residences has been defined in the BRE project in order to understand if and when further modeling and mitigation work may be required at EVO. EVO's current noise model defines the critical separation distances as 1,000 m from the Baldy Ridge 3 Pit and 3,000 m from the Baldy Ridge 4 pit as measured from the nearest residences on Michel Creek Road. Outside of these distances, measured sound levels attributable to mining operations are not verifiable. Through the BRE project, noise control limits at selected receptor locations were determined based on the British Columbia Noise Control Best Practices Guideline (Table 2-1). Noise receptor location were determined with feedback from the community.

The scope of the Noise Control Plan includes mining activities that occur within the permitted active disturbance boundary of the operation or any construction activities that are directly associated with the operations that may exist outside of the disturbance boundary. The Plan encompasses all mining activities, except blasting, that have the potential to generate noise. The Blasting and Vibration management plan is overviewed in Section 3. Specifically, the Plan focuses on the following mine-activity related aspects; including but not limited to:

- site preparation and site access;
- operation of heavy equipment in active mining areas (pits, haul roads, waste rock spoils, hopper, raw coal conveyance and breaker); and
- process plant activities such as train loading.

The volume of intensity of sound is measured in decibels (dB). Some examples of common sounds and their intensities are listed below:

- Library – 40 dB
- Refrigerator – 50 dB
- Normal conversation – 60 dB
- Doorbell – 80 dB
- Jazz concert – 91 dB
- Power Mower – 94 dB
- Nightclub – 94 dB
- Car horn – 100 dB
- Ambulance siren – 120 dB
- Shotgun – 170 dB

2.1 Noise Monitoring

A qualified professional (Teresa Drew, INCE with RWDI) was hired in 2018 to review the implementation of the Noise Control Plan. Their review concluded that Teck is complying with all conditions and actions outlined in the Noise Control Plan.

A qualified professional (Richard Wright, P.Eng. with SLR Consulting) has also been hired to review the predictive noise model and modelling results to determine if there are any additional concerns for exceeding noise limits (Table 2-1). This work was being conducted through 2018 and will conclude in Q2 2019. If

additional concerns are noted, a updated noise monitoring program will be designed and implemented to further validate model results. In order to support the noise model review, sampling was conducted September 25-29 and October 15-16 in 2018. Receptors near R01, R02, R03 and R04 (Figure 2-1) were selected for sampling as they are located closest to the mine site and allow for the most representative data to be collected. Receptors from this sampling were altered slightly from the locations chosen in the BRE assessment to get more complete results (some locations for example were private property, close to a roadway or did not have a reliable source of power). The results from this sampling will be used to update the model and in turn the management plan. Values in Table 2-1 may be updated based on results and recommended changes in locations.

Table 2-1: Noise control limits at receptor locations

Receptor Location	Day Time (07:00 – 22:00) PSL	Night Time (22:00 – 07:00) PSL
R01– Michel Creek Road	55 dBA L _{EQ}	52 dBA L _{EQ}
R02 – Michel Creek Road	53 dBA L _{EQ}	43 dBA L _{EQ}
R03 – Cyprus Drive	58 dBA L _{EQ}	48 dBA L _{EQ}
R04 – Elk Valley Trailer Park	63 dBA L _{EQ}	58 dBA L _{EQ}
R05 – Alexander Creek North	50 dBA L _{EQ}	40 dBA L _{EQ}
R06 – Alexander Creek South	50 dBA L _{EQ}	40 dBA L _{EQ}

dBA = A-weighted decibel; L_{EQ} = equivalent continuous sound level; PSL = permissible sound level

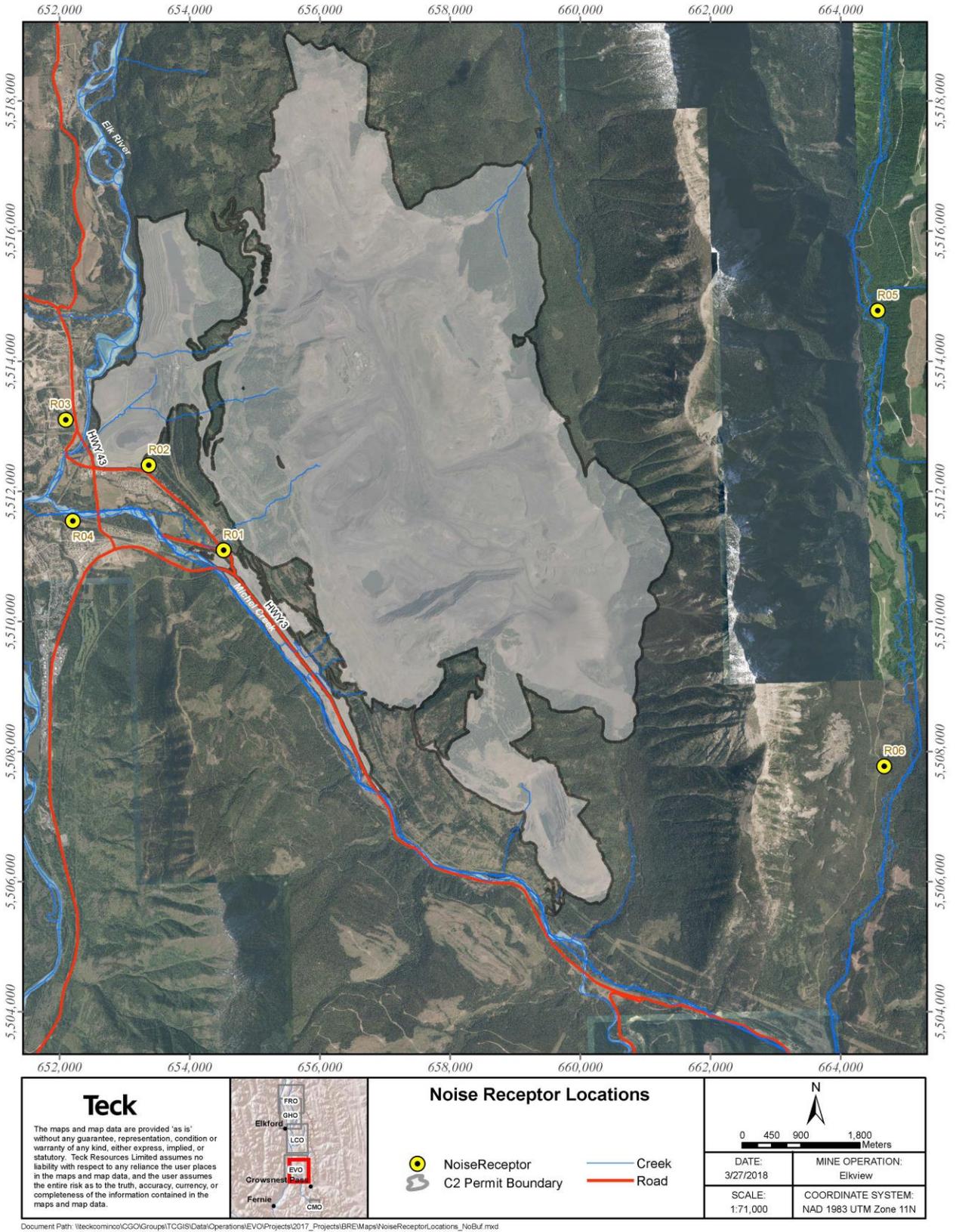


Figure 2-1 Noise receptor locations

2.2 Feedback Received in 2018

During 2018, no community feedback was received through Teck's Feedback Mechanism related to the Noise Control Plan.

2.3 Changes and Updates to the Plan

There were no changes or updates to the Noise Control Plan in 2018. The plan will be updated in 2019 following the review of the Noise Model.

3 Blasting and Vibration

Extraction of coal at EVO requires the blasting of hard rock layers. Due to EVO's close proximity to the community of Sparwood, special considerations with respect to blast design and practice are required. We understand that mining is progressing closer to Sparwood and we continue with our commitment of mitigating impacts in a collaborative spirit with the community.

Several aspects of blasting require management in order to minimize the potential impacts to the receiving environment and stakeholders. Specifically; fly rock, ground vibrations, air over pressure vibrations, blast fumes and dust.

Fly rock is material that is ejected into the air during a blast. Fly rock will be managed through engineered blast design and processes with consideration of shot direction, material types, topography, borehole size, charge weight and proper burden/relief, stemming material and practices. Blast clearance zones are used to manage the risk of injury to on site personnel, wildlife, equipment and infrastructure from fly rock.

Blasting related vibrations have two components outlined below: ground vibration and air over pressure. Both will be managed through blasting practice and design.

Ground vibration is the blast wave front that is carried through the ground. Ground vibration is measured as peak particle velocity (PPV) in millimetres per second (mm/s). While inaudible, ground vibration can be detected by humans and, if they are not controlled could cause damage to property or infrastructure.

Air over pressure, also known as air blast, is the blast wave front that travels through the atmosphere as sound waves. Air over pressure is measured as pressure or decibels (dBL) and can be generally felt further away from the source than ground vibrations. The rate at which air blast vibrations diminish is dependent on distance, atmospheric conditions and topography. When a blast is felt or heard it is generally due to the air blast and not ground vibration as ground vibrations diminish closer to the source.

To meet our management objectives we use an adaptive management approach, making changes as site conditions and monitoring results dictate or as new technologies emerge. Through on-going blast monitoring our fly rock and blast vibration predictive models are updated. EVO is able to implement changes to blasting practices as mining progresses closer to residents and infrastructure. Monitoring and regular review of the results are the core adaptive management activity that helps guide improvement.

EVO has three (3) monitoring stations for ground vibrations and air overpressure, two (2) of them are located within the community of Sparwood (S1 and S2), and the third station (S3) is between the general location (S1 and S2) and the mine site (Figure 3-1 **Error! Reference source not found.**). The location S3 was chosen to provide more data by being on site and closer to active operations. EVO is conducting trials to optimize the location of two (2) additional monitoring stations within the planned green area in the figure below. S4 was moved to S3 during 2017, as BR6 was not in operation in 2018 (See Appendix A for a general overview map of location at EVO).

The primary objective of the Blasting and Vibrations Management Plan is to blast safely and sustainably, while protecting property and minimizing the effect on residents, wildlife and infrastructure within the blast clearance zone. This plan encompasses all blasting practices at EVO.

Specifically the Plan focuses on managing the following mine blast-related aspects:

- blast safely and control the generation of fly rock;
- protect property and infrastructure from the potential effects of ground vibration;
- protect property and infrastructure from the potential effects of air overpressure vibration;

- manage nuisance vibration and noise effects to local community; and
- minimize and avoid the generation of blasting related dust and fumes.

The plan also outlines ground vibration and air overpressure limits which are listed below in Table 3-1.

Table 3-1 Ground vibration and air overpressure limits at EVO

Component	Limit
Ground Vibration ¹	12.7 mm/s
Air Overpressure Limits ²	133 dB3

Nicholas Pennell, P. Eng. (a qualified professional) reviewed the implementation of the Blasting and Vibration Management Plan. His review concluded that Teck is complying with all conditions and actions outlined in the Blasting and Vibrations Management Plan.

¹ U.S. Bureau of Mines: Investigation RI-8507 (1980).

² U.S. Bureau of Mines: Investigation RI-8485 (1980). dB = decibel; mm/s = millimetres per second; USBM = United States Bureau of Mines.

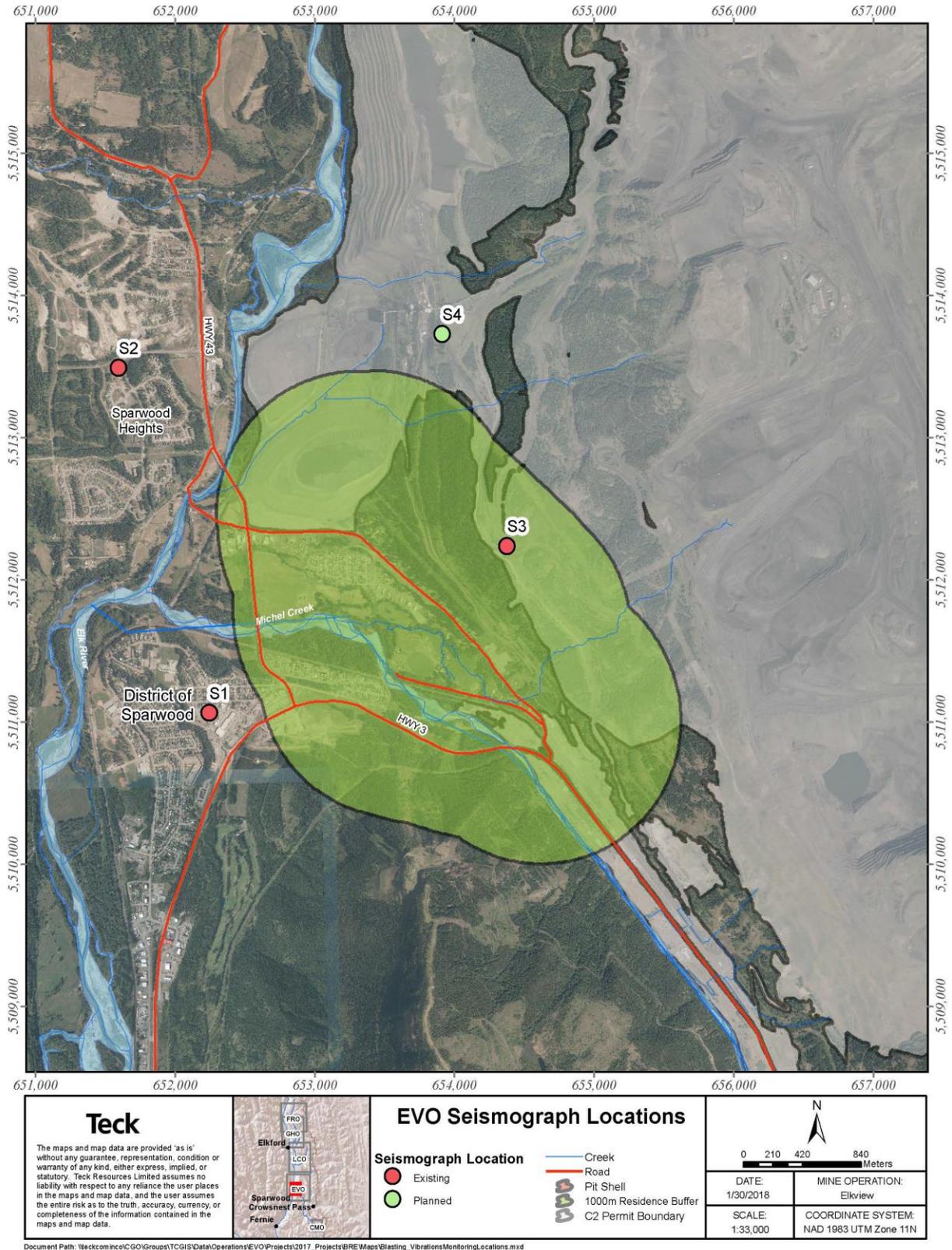


Figure 3-1 Seismograph Locations for Monitoring Blasting and Vibration at EVO

3.1 Air Over Pressure and Vibration Monitoring

EVO conducted two hundred and sixty five blasts in 2018. The distribution of blasts are shown in Figure 3-2 below. In 2018 no blasts occurred within the BRE footprint.

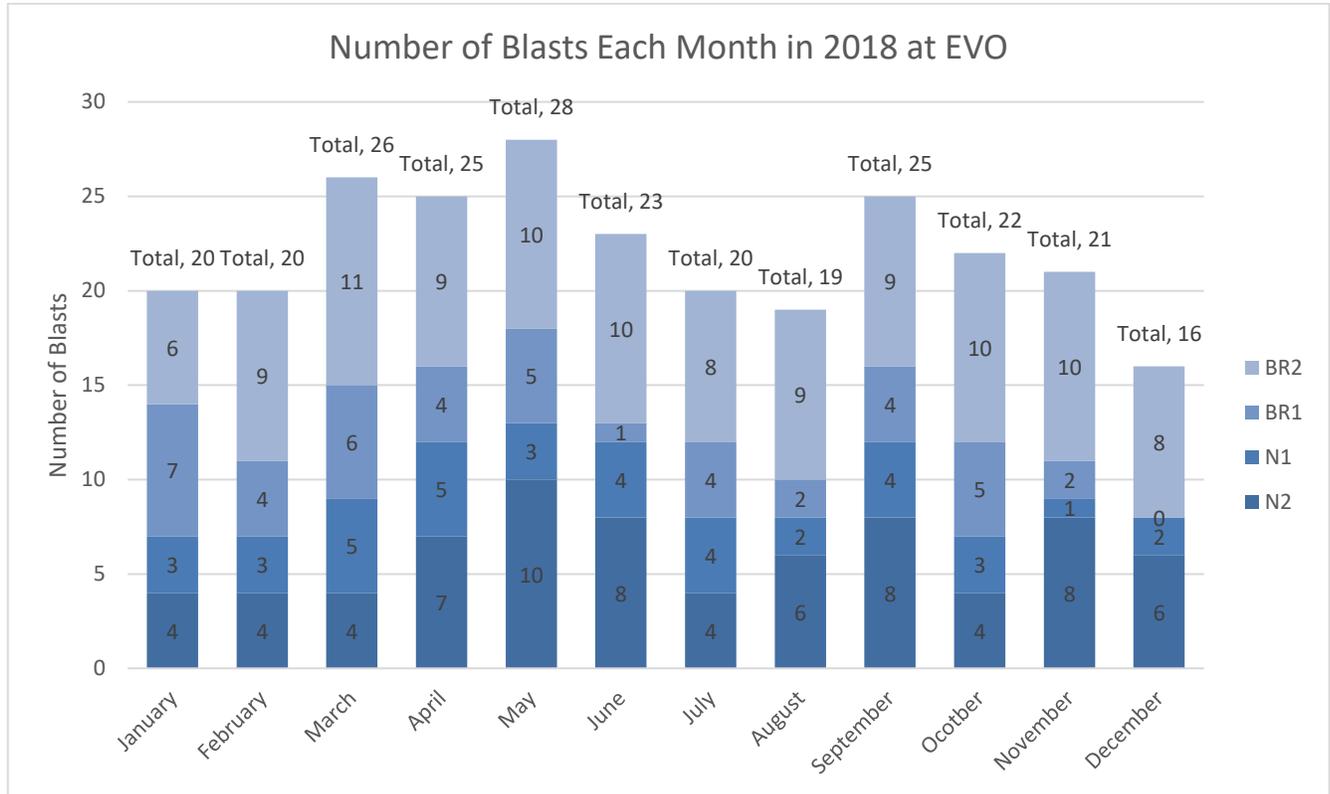


Figure 3-2: Number of Blasts at EVO for each month in 2018

1.2 Air Over Pressure and Vibration Monitoring Results

During 2018 a total of seventy two blast events were detected in our three seismograph locations (Figure 3-3), all of which were below the limits for ground vibrations of 12.7 mm/sec and air overpressure of 133 dB(L). Monitor detection limits are set low to maximize the data points available for modeling and making adjustments to blasting practices as part of the adaptive management approach.

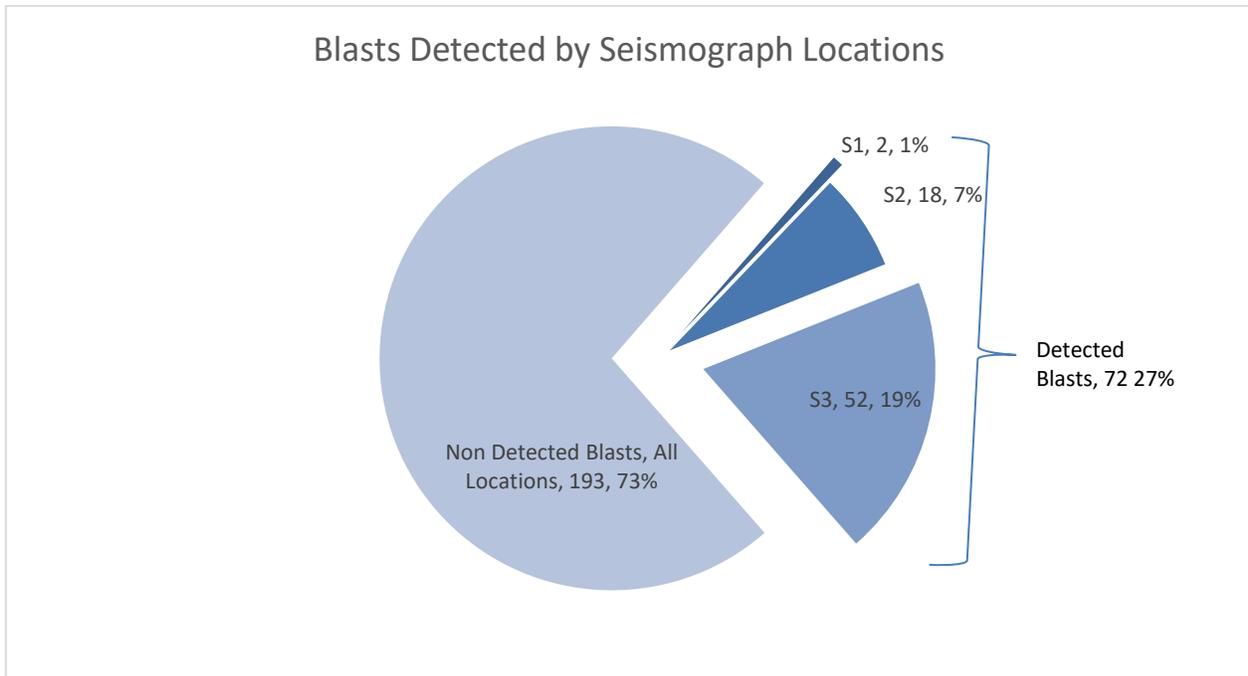


Figure 3-3 Number of blasts detected and non-detected at each seismograph location in 2018 (Location, Number of Blasts, Percent of Blasts)

The highest recorded ground vibration PPV was 1.103 mm/sec at our monitoring station S2 located at the Sparwood heights fire hall, overpressure recorded at this location was 102.8 dB (L). The highest value for air overpressure was 114.6 dB (L) at our monitoring station S2 located at the Sparwood heights fire hall, PPV value recorded was 0.57 mm/sec. All values were well below the specified regulatory limits.

All events recorded during 2018 were below limits set in the Blasting and Vibration Management Plan. PPV of (12.7 mm/s) for ground vibration (Figure 3-4). (127 dB (L)) for air over pressure (Figure 3-4 and Figure 3-5).

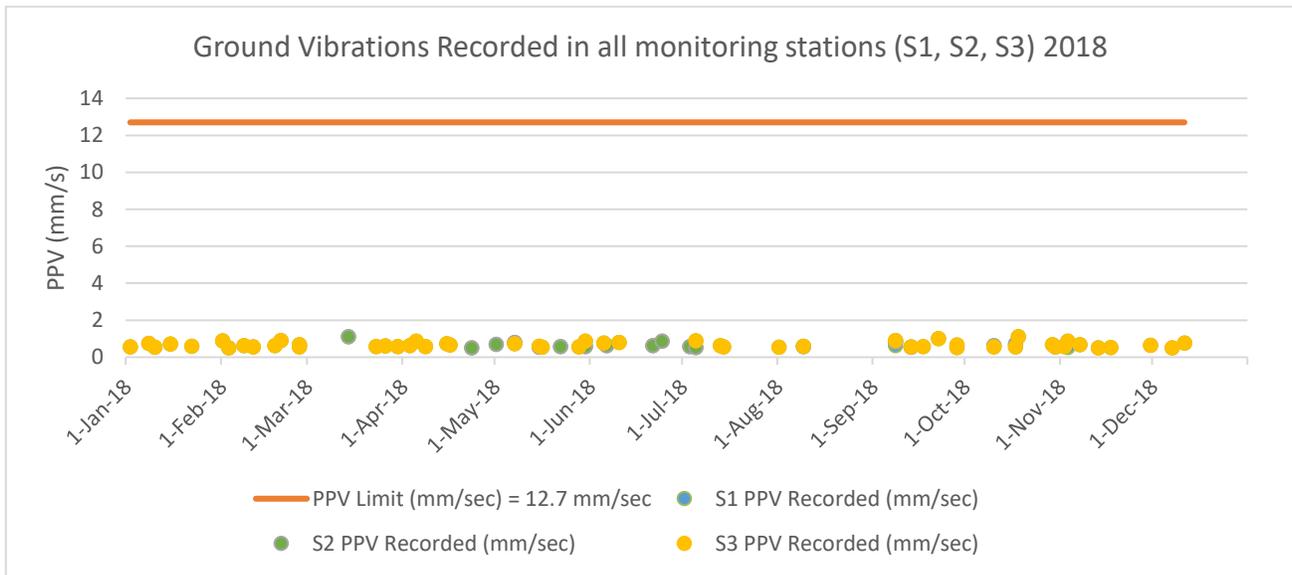


Figure 3-4 Recorded ground vibrations (GV) at each station in Q4 2018 compared to limits

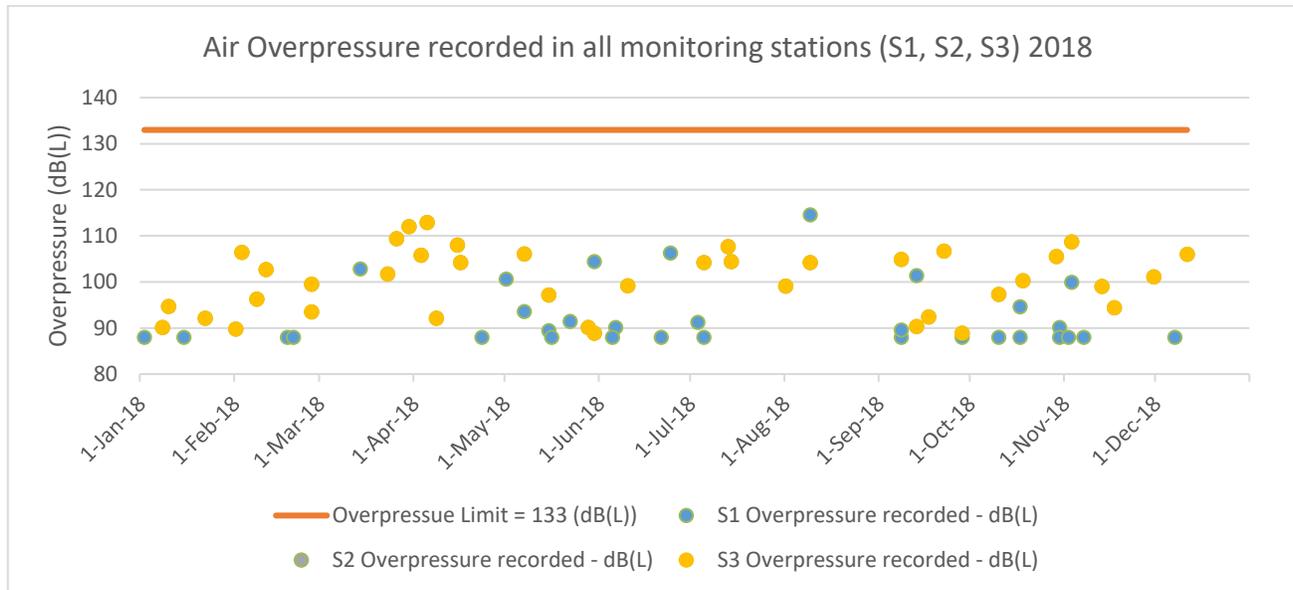


Figure 3-5 Recorded air over pressure (PPV) at each station in 2018 compared to limits

3.2 Feedback Received in 2018

During 2018, no community feedback was received through Teck’s Feedback Mechanism related to the Blasting and Vibrations Management Plan.

3.3 Changes and Updates to the Plan

There were no changes or updates to the Blasting and Vibration Management Plan in 2018.

4 Air Quality and Dust Control

4.1 Air Quality and Dust Control Management Plan

The primary objective of the Air Quality and Dust Control Management Plan is to manage site activities and mitigate effects on air quality related to particulate matter (fugitive and source) and greenhouse gases (GHG).

Primary sources of fugitive dust generated at EVO include the use of haul and light vehicle roads, spoiling of waste rock, coal processing, blasting and stockpiling of materials. Source dust at EVO is primarily related to building emissions. The primary sources, associated with GHG and managed within the plan, are from vehicle and mining equipment emissions while operating.

Below are definitions of terms as they relate to Section 4 of this report.

Greenhouse gas: any or all of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride and any other substance prescribed by regulation.

Particulate matter: all solid and liquid particles suspended in air, can be measured based on the size of a particle or all particles (total particulate matter).

Source dust: dust emitted from a definable point source.

Fugitive dust: dust not emitted from a definable point source.

Ambient air monitoring: continuous assessment of the surrounding air quality as it relates to fugitive dust emissions.

4.2 Air Quality Monitoring

During 2018, EVO monitored three ambient air quality stations in conjunction with meteorological stations adjacent to the mine site (Figure 4-1). Samples were collected continuously and monitored for particulate matter (PM) less than 10 µm diameter (PM₁₀) and less than 2.5 µm diameter (PM_{2.5}). Ambient air stations are used to assess air quality related to fugitive dust emissions.

Source locations, the Dryer Stacks and Breaker Stack (Figure 4-1), are sampled twice a year and compared to permit PA1807 discharge limits issued by the Ministry of Environment and Climate Change Strategy (BC ENV). Source sampling was conducted in Q2 2018 and again in Q4 2018. Source monitoring is used to assess the effectiveness of control measures on particulate and GHG release at a point or single source.



Figure 4-1: EVO permitted air monitoring locations

4.2.1 Source Monitoring

Source sample locations, Dryer Stack and Breaker Stack, are sampled twice a year at approximately equal time intervals per Section 3.1.1 PA1807. Each stack must be under normal operating conditions and at least 75% of nominal load during sampling. The Dryer Stacks and Breaker Stack were sampled in Q2 and Q4 2018 (Table 4-1)

Source emissions sampling in Q2 2018 occurred from June 8th to June 10th. Results from the Q2 Dryer Stacks, conducted June 9th and June 10th, remained below permit limits. Results from the Q2 2018 Breaker Stack sampling, occurring June 8th, exceeded permit limits for Total Particulate Matter (150 mg/m³) with a sample result of 272.0 mg/m³. EVO became aware of the non-compliance on July 16th, upon receipt of sample results from qualified samplers. The ENV was immediately notified by email and a re-sample scheduled for August 15th, within 30 days of determining the non-compliance. Re-sample results at the Breaker Stack were below permit limits.

Source emissions sampling in Q4 2018 occurred from December 4th to December 6th. Results from the Q4 2018 source emissions sampling remained below permit limits for both the Dryer Stack and Breaker Stacks. Results of Q4 2018 source emissions sampling are shown in Table 4-1.

On Dec. 18, 2018, EVO received a notice prior to the determination of Administrative Penalties (Notice) from the Ministry of Environment and Climate Change Strategy (ENV). This Notice is related to contraventions of the *Environmental Management Act*, Permit 1807 at EVO's coal breaker stack for exceedance of permit limits and failure to maintain authorized works since 2015. The initial Notice identified a combined preliminary penalty assessment of \$45,500. Additional information was provided to the ENV and in Q1 2019, EVO was issued an Administrative Penalty of \$37,500. Further improvements in 2019 include a new air compressor system which will further improve the quality and reliability of air to the system, installation of more filter gauges to monitor performance and regular testing for any air leakage throughout the system.

Table 4-1: Source Monitoring Results in 2018

Location	Sample Date	Average Flow Rate (m ³ /s)	Average Total Particulate Matter (mg/m ³)	Average Production During Source Test (tonne/hour)
Coal Breaker Stack	8-Jun-18	9.6	272	904
	15-Aug-18	9.3	118	1334
	6-Dec-18	11.1	12.7	1386
Permit Limit		14	150	-
North Dryer Stack	9-Jun-18	-	30.3	994
South Dryer Stack	10-Jun-18	-	21.9	848
Combined Dryer Stacks	-	102	-	-
North Dryer Stack	4-Dec-18	-	38.1	1026
South Dryer Stack	5-Dec-18	-	31.8	989
Combined Dryer Stacks	-	117.2	-	-
Permit Limit		133	85	-
Annual Average Clean Coal Production				856

4.2.2 Ambient Monitoring

EVO monitors ambient air quality at three monitoring locations: Downtown Sparwood Centennial Square (DTAM); Whispering Winds Trailer Park (WWTP); and the old Michel By-Products Plant (MBPP). Results of

continuous air monitoring at these stations is compared to British Columbia Ambient Air Quality Objectives⁴ (BC AAQO) for PM₁₀ (Figure 4-2 and Figure 4-3)

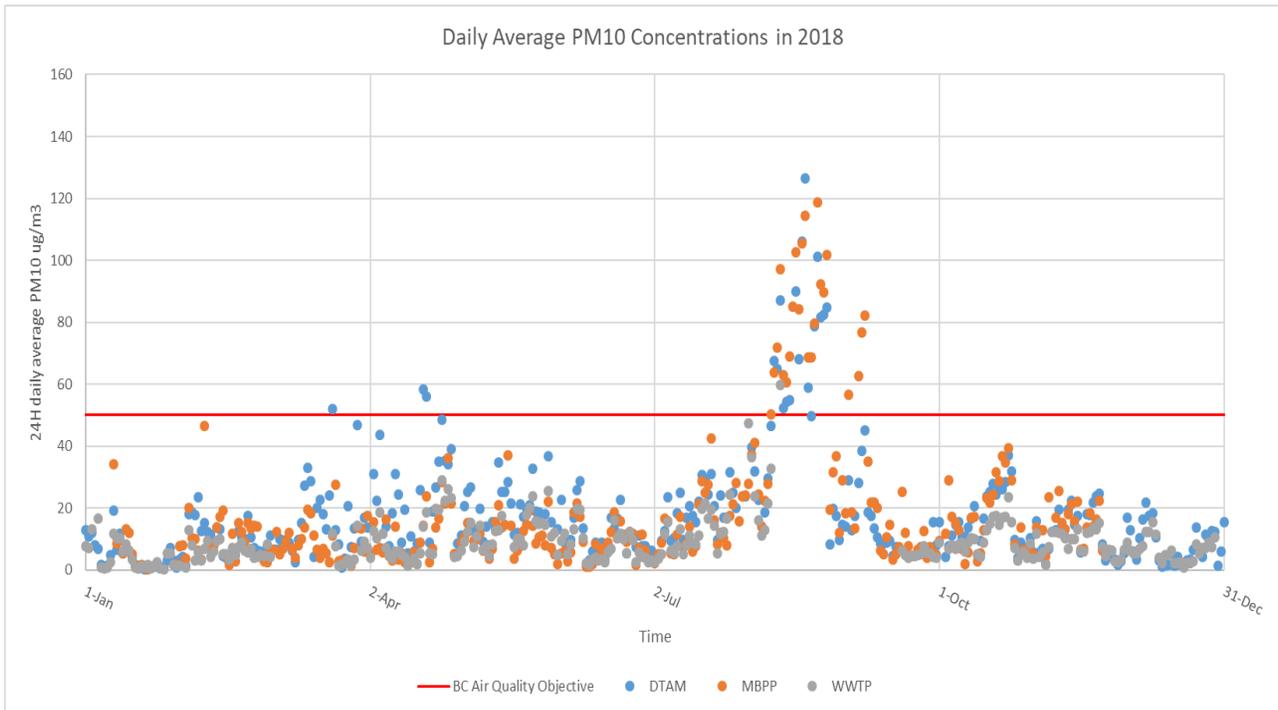


Figure 4-2: PM₁₀ daily average results at EVO continuous air monitoring locations in 2018

⁴ Available at <http://www.bcairquality.ca/reports/pdfs/aqotable.pdf>

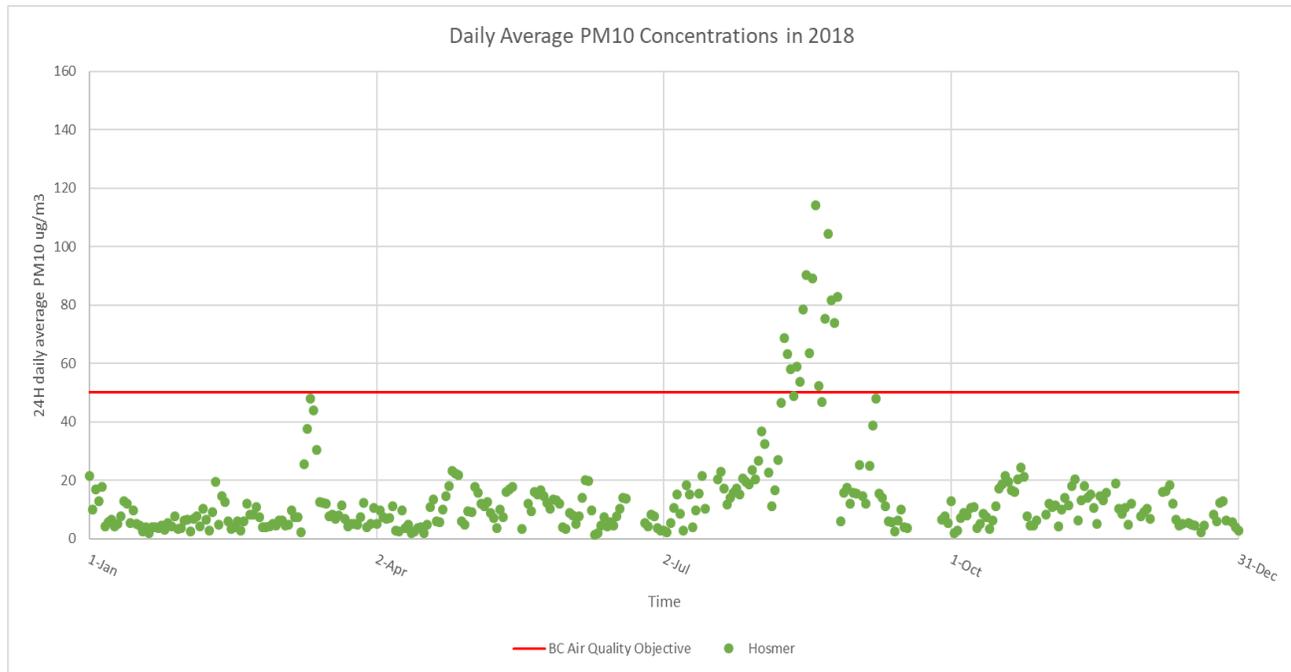


Figure 4-3: PM 10 daily average results at Hosmer continuous air monitoring station in 2018

During the summer of 2018, the Elk Valley experienced dry conditions, hot temperatures and forest fires; which may have impacted performance on dust mitigation activities and influenced ambient air quality results. The Hosmer background station is used to evaluate external factors as compared to mine influenced factors when evaluating ambient air quality results above BC AAQO (ie. trends and/or results above or similar at background to monitoring stations at EVO indicate external contributing factors such as, forest fires).

Figure 4-3 and Figure 4-6 illustrate the ambient air quality observed at the Hosmer Air Station, which has little to no mining impact (located approximately 16 km away from EVO). In 2018, the Hosmer air station showed predominant wind direction from the South-south West, towards EVO, and similar trends to EVO Ambient Air Monitors. An increase in PM₁₀ and PM_{2.5} can be seen throughout the valley air monitoring stations not just at stations near EVO. In 2018, sample results from continuous ambient air monitoring stations at EVO were above BC AAQO for PM_{2.5} at all three sample locations; DTAM, WWTP and MBPP as a result of forest fires in the area throughout August and early September. Daily average concentrations for PM₁₀ were above BC AAQO on 19 (5%) instances at DTAM, 1 (0.3%) instance WWTP and 23 (7%) instances at MBPP. Of the 43 daily average PM₁₀ concentrations above BC AAQO, 40 occurred in August and September, likely as a result of forest fires in the area (Figure 4-2 and Figure 4-3).

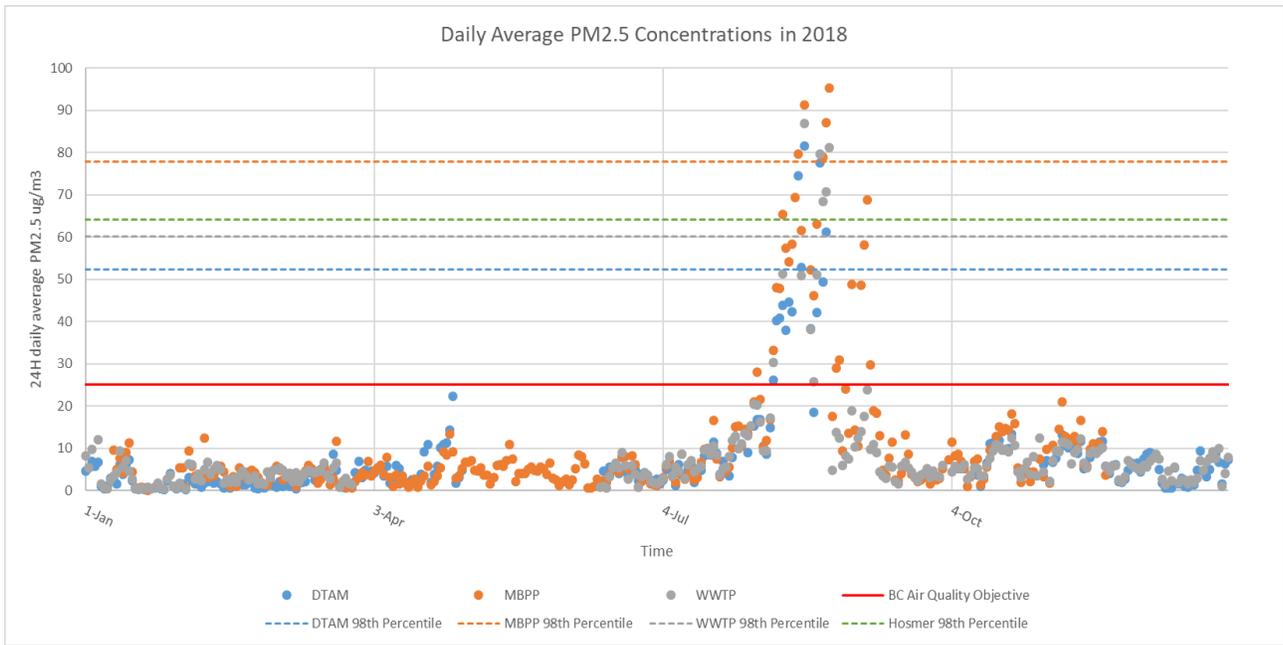


Figure 4-4 Daily Average PM 2.5 Concentrations in 2018 at all permitted stations at EVO

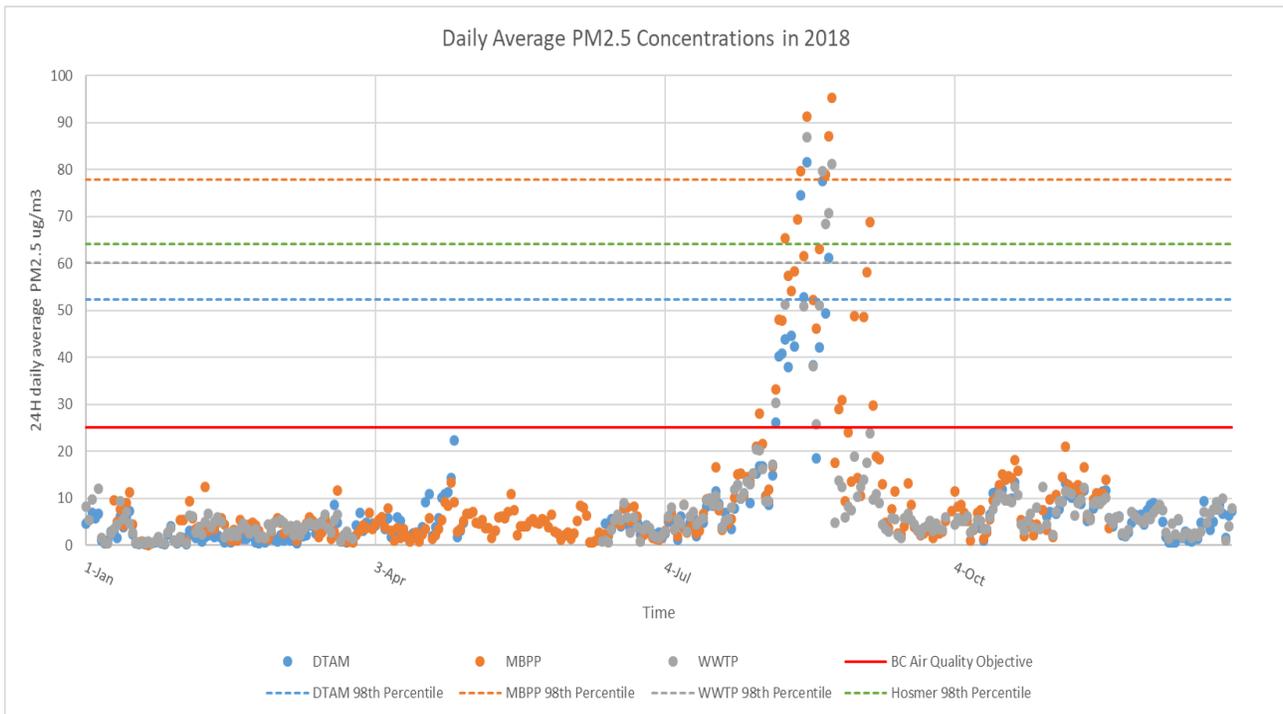


Figure 4-5: PM_{2.5} daily average results at EVO continuous air monitoring locations in 2018

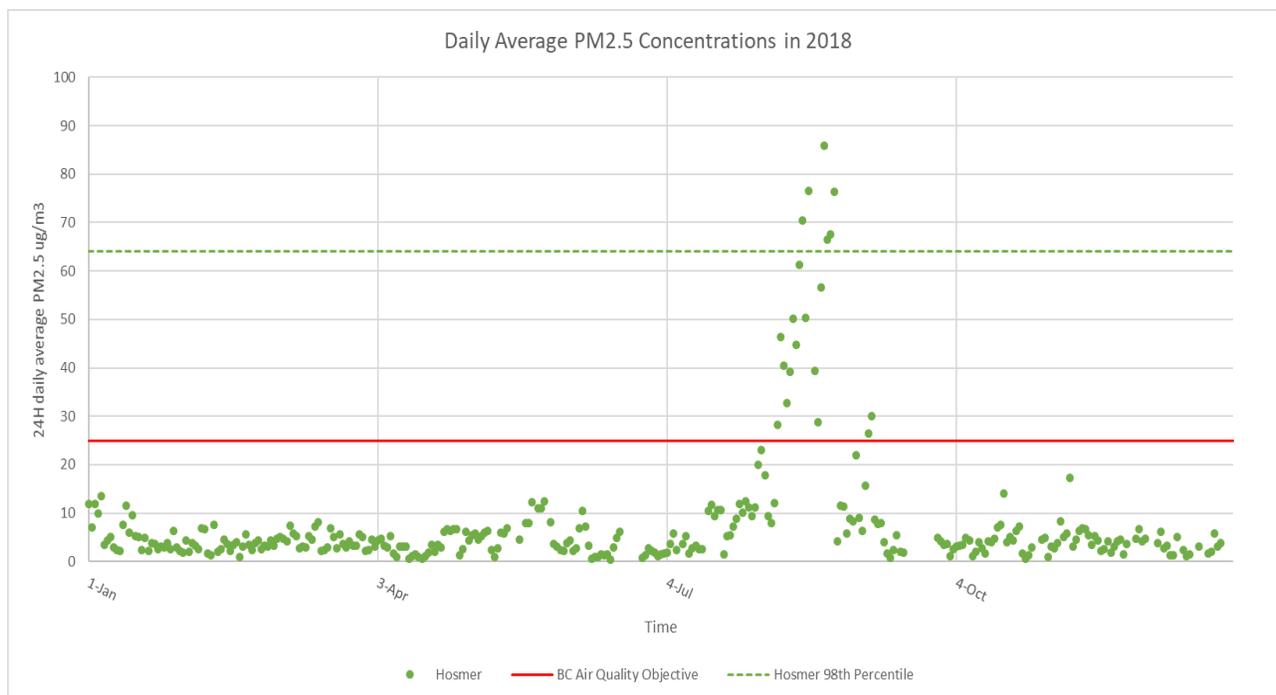


Figure 4-6: PM 2.5 daily average results at Hosmer continuous air monitoring station in 2018

4.3 Feedback Received in 2018

Feedback is any comment, enquiry or complaint from communities of interest about Teck or about one of its coal operations and its activities outside of the regular consultation process. Feedback may include questions, issues, ideas, concerns, suggestions, complaints or compliments.

Teck Coal’s feedback mechanism is available to all Communities of Interest in the area of influence of Teck’s coal operations. This includes, but is not limited to, Elkford, Sparwood, Fernie, the Crownsnest Pass, The Regional District of East Kootenay Area A, and the Ktunaxa Nation. The feedback mechanism applies to the activities of Teck’s coal operations and all personnel, including both employees and contractors.

In 2018, Teck’s Elkview Operations received 101 pieces of public feedback regarding air quality and dust. Table 4-2 summarizes all feedback received in 2018.

Table 4-2 Summary of Community Feedback related to Air Quality and Dust

Date	Summary of Event	Feedback
May 16 th	A blast from BR2 pit released fugitive dust which was deposited during a rain event	33 individual pieces of feedback provided
July 26	Fugitive dust was deposited during a rain event	11 individual pieces of feedback provided
September 30	Fugitive dust was observed during a snow event	12 individual pieces of feedback provided
Multiple dates	Dust visible above Elkview Operations	28 individual pieces of feedback provided
Multiple dates	Visible dust on home or property	17 individual pieces of feedback provided

On July 10th and September 18th, public meetings were held on dust and air quality in Sparwood. Local Farmer’s Markets were also visited in 2018 to be available to answer community concerns.

In December 2018 an article was included in the new Elk Valley-wide newsletter Community Connections which discussed dust management mitigations.

As a result of the May 16th event, an interim Trigger Action Response Plan (TARP) was developed for blasting in the BR2 pit. The TARP uses wind direction to determine if blasts should be delayed to mitigate impact from dust to the town of Sparwood.

Elkview continues to work to identify mine related sources causing impact through sampling and speciation, MicroPulse LiDAR, air quality modeling and ambient air quality analysis. A focus group made up of community members was engaged to propose appropriate mitigations to ease impact to the residents of Sparwood (e.g. cleaning homes).

4.4 Changes and Updates to the Plan

An updated Air Quality and Dust Control Plan (the Plan) was submitted to the regulators on August 30, 2018. The update of the Plan was developed in consideration of the EMPR/ENV guidance document *Developing a Fugitive Dust Management Plan for Industrial Projects*. No feedback to-date has been received from regulators on the update to the Plan.

Changes to the Plan are audited by a third party Qualified Professional (RWDI). EVO's August 2018 updated was audited in October 2018 and determined that EVO is in compliance with practices identified in the Plan for managing air quality and fugitive dust.

5 Reclamation and Closure

The Reclamation and Closure Plan details mine planning and reclamation activities for five years (2017 to 2021). After the first five years of the plan, mining and reclamation activities are only conceptual and show activities that may take place. The conceptual content provides a high-level strategy that will be translated into more detailed closure and reclamation actions as the operation nears the closure stage of mining. As the operation matures and moves toward the planned closure date, future iterations of this plan will become less conceptual and will provide more direction around timing and implementation of closure activities.

The plan has been created with the following overarching closure objectives:

- long-term safety and stability of drainages, landforms, and features
- water quality that meets acceptable quality guidelines for safe release to the surrounding environment and use by local flora and fauna
- working towards a net positive impact (NPI) on biodiversity in areas impacted by our operations
- Integrating community and First Nations values and input to the extent practicable

The Plan is based on a management approach to:

- evolve the Plan based on current regulations, policy and expectations, new knowledge, and monitoring results;
- use a risk-based approach that identifies potential risks to successful closure and focuses planning and resources on the areas of highest risk;
- identify gaps in our current knowledge and the proposed actions to close the gaps;
- apply best practices and incorporate ongoing research and innovation;
- integrate results of engagement with First Nations and communities of interest;
- implement processes that mitigate impacts of operations to ecosystem and biodiversity elements (EBEs) at the operation;
- provide an increasing level of detail in regards to closure planning over the mine life; and
- Support the maintenance and enhancement of sustainable communities and the environment.

5.1 Reclamation completed in 2018

One road (0.5 ha) that was no longer in use was reclaimed in 2018 by pulling back the road fill and restoring the natural topography. The surface was then de-compacted and woody debris was randomly scattered. The area was planted with 965 plugs (seedlings) and 185 one gallon pots of native species with fertilizer (see Appendix A for a map of areas at EVO).

The Elk River bank along a 325 m section of Elkview's Coarse Coal Refuse (CCR) Spoil was preventatively stabilized in 2018. During this project, 1.2 ha of Elk River Bank was reclaimed using live willow cuttings and riparian planting. There are 90 plugs planned for fill planting in 2019 to complete the planting portion of the project.

The South Pit Spoil was planted in 2018 to an ecosystem grouping of dry forest. This area has a target ecosystem of MSdw 103 (Montane Spruce, Dry Warm), 1.4 ha at South Pit was planted at a density of 3,257 stems/ha with grasses, forbs and shrubs. Totalling 4,560 seedlings, 800 *Achillea millefolium* (yarrow), 1,410 *Epilobium angustifolium* (fireweed), 400 *Amelanchier alnifolia* (saskatoon), 360 *Acer glabrum* (Douglas maple), 540 *Spiraea betulifolia* (birch-leaved spirea) and 1,050 *Calamagrostis rubescens* (pinegrass) were planted on this mounded site in May of 2018.

The Cedar East Spoil was planted in 2018 to an ecosystem grouping of dry forest. This area has a target ecosystem of ESSFdk1 103 (Engelmann Spruce - Subalpine Fir, Dry Cool). The two areas total 7.5 hectares

ha at Cedar East spoil were planted at a density of 3,990 stems/ha with grasses, forbs and shrubs. Totalling 29,925 seedlings, 795 *Pseudoroegneria spicata* (bluebunch wheatgrass), 700 *Fragaria virginiana* (wild strawberry), 1,550 *Achillea millefolium* (yarrow), 4,960 *Anaphalis margaritacea* (pearly everlasting), 1,220 *Amelanchier alnifolia* (saskatoon), 900 *Rubus parviflorus* (thimbleberry), 8,100 *Rosa acicularis* (prickly rose), 4,900 *Shepherdia canadensis* (soopalalie) and 6,800 *Festuca idahoensis* (Idaho fescue) were planted on this mounded site in May of 2018.

Hydroseeding occurred on approximately 6 ha of CCR, 2.5 ha of Bodie Dump and 5 ha of access roads/ditches.

Seed was collected for red-listed species *Pinus albicaulis* (Whitebark pine), *Elymus albicans* (Montana wildrye) and *Townsendia parryi* (Parry's townsendia) within the Elk Valley.

Tipi Mountain Native Plants Limited extracted approximately 68,000 Whitebark Pine seeds from cones collected in the local area that are currently in storage at their facility near Kimberley, BC. Additionally, Teck purchased 10 kg of air-separated Whitebark pine seed, collected within the seed transfer zone, which is in long-term storage at the provincial seed center. White pine blister rust (a fungus disease) resilience screening is occurring on samples of the seed collected in 2018.

Teck propagated Parry's Townsendia in the Fording River Operations' greenhouse in 2018; however, the germination rate was low. The successful seedlings are in cold storage at the greenhouse and will be left to grow for another season.

Teck grew over 1,000 Montana wildrye plugs in the Fording River Operations' greenhouse for planting in 2019.

There are two landform assessments in progress at EVO: Harmer Knob and Gravel Pit areas. A pre-feasibility level design was completed which considered overall stability and long-term drainage integrity.

5.2 Feedback Received in 2018

During 2018, no community feedback was received through Teck's Feedback Mechanism related to the Reclamation and Closure Plan in 2018.

5.3 Changes and Updates to the Plan

No updates occurred to the Reclamation and Closure Plan in 2018. This plan is updated at least every five years and was last updated in 2017.

6 Visual Quality

A View-scape Management Plan (VMP) is required to be developed and approved by BC's Environmental Assessment Office prior to construction in BR3 pit (Appendix A). Elkview is currently planning to enter BR3 pit in November 2019; therefore, the VMP is currently in development in consultation with Ktunaxa Nation Council, Ministry of Forest, Lands, Natural Resource Operations and Rural Development, Environmental Assessment Office and the District of Sparwood represented by the Socio-Economic Effects Advisory Committee.

6.1 Visual Quality Monitoring

Visual quality monitoring has not commenced as the VMP, including requirements for monitoring, is still being developed.

6.2 Feedback Received in 2018

As the VMP is currently in development, no feedback specific to this plan has been received to date through Teck's Feedback Mechanism.

6.3 Changes and Updates to the Plan

The VMP is currently in development and is scheduled to be completed by the third quarter of 2019.

7 Socio-Community and Economic Effects

7.1 Socio-Community and Economic Effects Advisory Committee

Elkview Operations and the District of Sparwood worked collaboratively throughout 2018 to prepare the Socio-Community and Economic Effects Management Plan (SCEEMP) and outline the role and objective of the Committee. The Advisory Committee is a group intended to:

- Perform an advisory (not decision making) role, focused on making recommendations to District of Sparwood Council and Teck for consideration with respect to implementing Condition 21 BRE Environmental Assessment Certificate
- Provide a broad community voice
- Act as a conduit for Teck EVO and DOS to reach citizens and for citizens to reach Teck EVO and DOS – and to build trust
- Advise on engaging the broader community of Sparwood,
- Review results for other Management Plans required as per BRE Environmental Assessment Certificate
- Assist in identifying on-going socio-community impacts and possible solutions for adaptive management.

The Terms of Reference for the Socio Community Economic Effects Advisory Committee was approved by District of Sparwood Council on December 3, 2018. The mandate of the Committee is to comply with Condition 21 of the BRE permit. The Terms of Reference are viewable on the District of Sparwood website; www.sparwood.ca/livable.

The Socio-Community and Economic Effects Advisory Committee (the "SCEEAC") is a select committee of Council for the District of Sparwood.

District Council appointed seven volunteer community members, as well as two representatives from Council and three from Teck; Manager Social Responsibility, Superintendent Environment – Elkview and General Manager – Elkview.

7.2 Socio-Community and Economic Effects Monitoring

A Livability Study (Study), led by the District of Sparwood is the first step to monitoring performance with respect to Socio Community Economic Effects Management Plan. The Livability Study will be an examination of livability in Sparwood. It will provide information to assist in selection of alternative management actions in the adaptive management cycle if related to socio-economic effects directly attributable to the BRE Project.

The purpose of the Study is to better understand the quality of life in Sparwood and how that has been, and continues to be, influenced by mine activity as well as other factors. While the Study is intended to use a broad lens, it is within the scope to address concerns with community livability resulting from the BRE Project.

The Study will provide information to assist in the design and selection of alternative management actions, indicators and frequency for monitoring, and thresholds or benchmarks to indicate when effects on livability have exceeded acceptable levels including for effects directly attributable to the BRE Project. The Study

results may be used to indicate the need for alternative mitigation and management to be applied during a future adaptive management cycle for BRE Project related effects. It will inform community development by providing indicators against which development can be weighed. This will also include identifying gaps in quality of life and will help guide and inform future investments (from DOS, Teck, or others) to areas that will have best outcome/returns.

The full scope of the Study is not defined in the SCEEMP. However, the results of the Study may require adjustment to the SCEEMP. Livability indicators are not presented here as they will be determined through the Study.

The District of Sparwood is undertaking the study with support from a consultant-Intelligent Futures, with an anticipated completion date and report to Council by Q3 2019.

7.3 Feedback Received in 2018

As the SCEEMP was not finalized until 2019 and the Committee did not meet officially until 2019, there was no feedback related to the Plan or Committee for 2018.

The livability study was not complete in 2018; no adaptive management with respect to performance was completed.

7.4 Changes and Updates to the Plan

As the plan was not complete until 2019 no changes or updates were made to the Plan in 2018.

8 Summary and Conclusions

In 2018, the Noise Management Plan model review was initiated and sampling was undertaken to validate the model. EVO acquired a qualified professional to review the implementation of the Noise Control Plan and was found to be in compliance.

Blasting at EVO moved out of the BRE footprint area but blast monitoring continued through 2018 to provide information for continual improvement in blasting practices.

The View-scape Management Plan will be created in 2019 in consultation with various communities of interest and regulators.

Reclamation and closure work continued in 2019 with plating, resloping, seeding and set prep work occurring at various locations across the site.

At all ambient air monitoring locations, EVO saw higher average particulate matter concentrations for both PM2.5 and PM10 as compared to 2017, likely attributed to forest fires and warmer temperatures. Wind direction remained predominantly the same direction at all monitors when compared to 2017 and the highest PM2.5 and PM10 average concentrations typically occurred in the summer months.

BC Ambient Air Quality Objectives were exceeded for PM2.5 at all monitoring stations, largely influenced by forest fires. There were 43 PM10 daily average results above BC AAQO across the 3 continuous ambient air monitoring stations; 40 of which occurred in August and September; a time heavily impacted by forest fires in the region.

Source emissions sampling occurred at the Dryer Stacks and Breaker Stack in Q2 and Q4 2018. The Dryer Stack sample results were below permit limits for all sample events in 2018. The Breaker Stack exceeded Total Particulate Matter permit limits during the Q2 2018 sample, leading to an Administrative Penalty in the

amount of \$37,500. The Breaker Stack re-sample was conducted in Q3 2018. Both the re-sample and Q4 2018 Breaker Stack samples were below permit limits.

EVO continues to implement its monitoring program in accordance with the requirements identified in Permit PA1807, amended September 7, 2018.

In 2018, Elkview Operation and the District of Sparwood collaborated to develop the Socio-Community Economic Effects Management Plan. The Plan examines impacts of mine activities on economic effects, land use, visual aesthetics, and socio-community effects. It will also provide an adaptive management process for addressing these potential effects. In alignment with the Plan, an Advisory Committee was established by the District of Sparwood on December 3, 2018 and the District of Sparwood, in partnership with a consultant began a Livability Study in the latter part of 2018.

9 Providing Feedback and Additional Information

This report and a more detailed Annual Air Report is available at www.teck.com/elkview-reports for review. Due to the infancy of the Noise, View-Scape and Blasting and Vibrations Programs, more detailed reports on these topics are currently not required through their associated management plans.

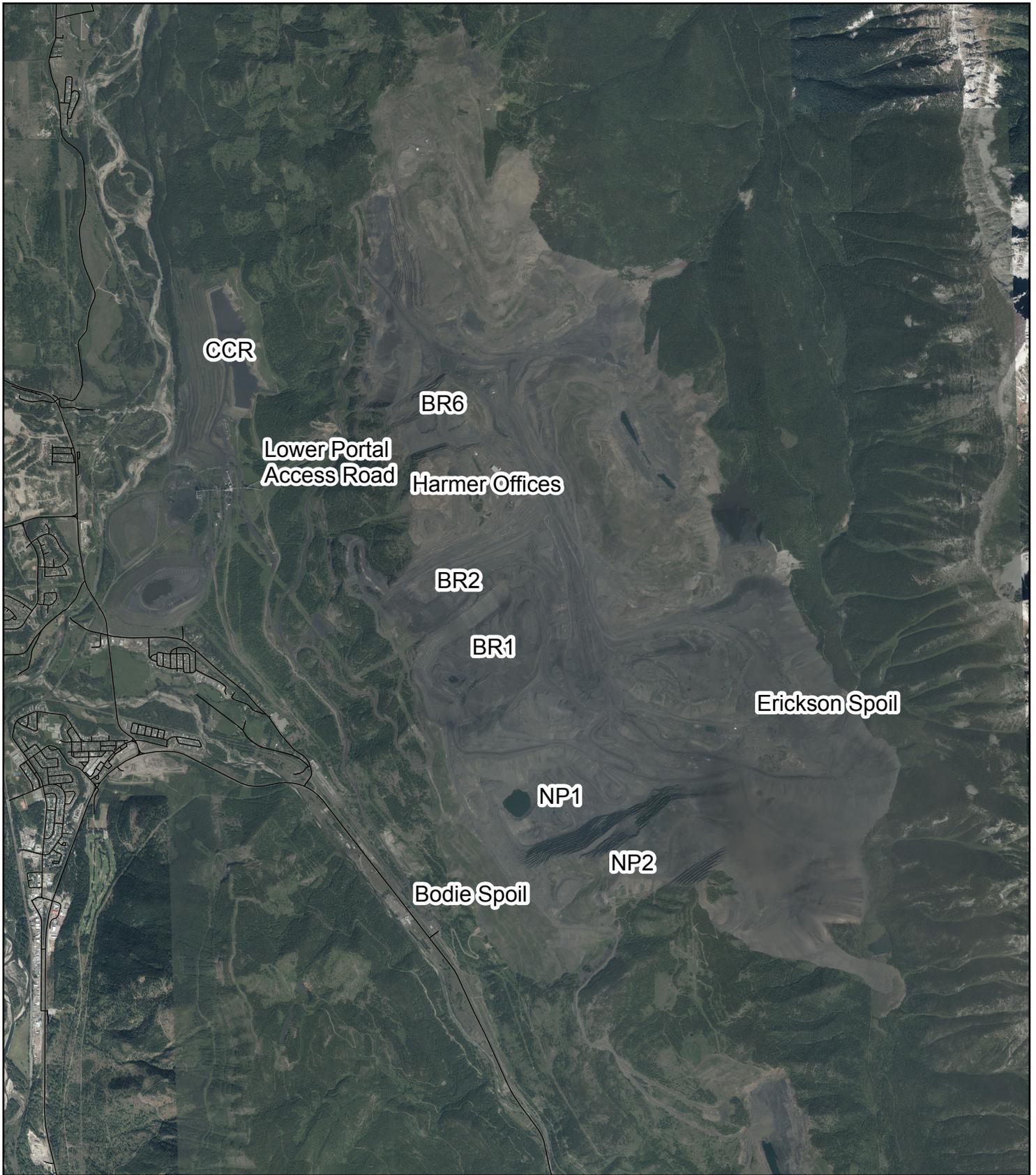
If you have feedback on this report or on any Teck activities, please contact Teck through the Elk Valley Feedback Mechanism using one of the methods listed below.

- Phone: 1-855-806-6854
- Email: feedbackteckcoal@teck.com
- Online submission form: www.teck.com/contact

Responses to feedback will be sent if contact information is given.

An Annual Meeting to discuss this report will be scheduled with the District of Sparwood on May 14th at 7:00 PM, Sparwood Recreational Centre (367 Pine Ave). Meeting minutes from the Annual Meeting will be displayed at the Sparwood Public Library, the Teck Social Responsibility Office in Sparwood and the District of Sparwood Main Office following the meeting.

Appendix A



Teck

The maps and map data are provided 'as is' without any guarantee, representation, condition or warranty of any kind, either express, implied, or statutory. Teck Resources Limited assumes no liability with respect to any reliance the user places in the maps and map data, and the user assumes the entire risk as to the truth, accuracy, currency, or completeness of the information contained in the maps and map data.



Elkview Operations 2018

DATE: 4/30/2019	MINE OPERATION: Elkview Operations
SCALE: 1:55,000	COORDINATE SYSTEM: NAD 1983 UTM Zone 11N