

Socio-Economic Effects Management Plan – Annual Report

April 30, 2020

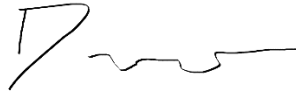


Teck


This contents of this report have been authored be the Teck representatives listed below, and reviewed and endorsed by the Socio-Community and Economic Effects Advisory committee.



Cassandra Knooihuizen, P.Ag – Noise and Visual Sections



Dan Myck, P.Geo – Blasting and Vibration Section



Jessica Tremblay, EIT – Air Quality and Dust Control Section



Kayleigh Montgomery – Socio-Community & Economic Effects and Feedback Section



Dan Charest, RFT – Reclamation and Closure Section

Table of Contents

1	Introduction	1
1.1	Project Status	1
1.2	Feedback	1
2	Noise	2
2.1	Noise Monitoring	3
2.2	Feedback Received in 2019	5
2.3	Changes and Updates to the Plan	5
3	Blasting and Vibration	6
3.1	Air Over Pressure and Vibration Monitoring	9
3.2	Feedback Received in 2019	11
3.3	Changes and Updates to the Plan	11
4	Air Quality and Dust Control	12
4.1	Air Quality Monitoring	12
4.1.1	Source Monitoring	14
4.1.2	Ambient Monitoring	14
4.2	Feedback Received in 2019	16
4.3	Changes and Updates to the Plan	17
5	Reclamation and Closure	18
5.1	Reclamation Completed in 2019	18
5.2	Feedback Received in 2019	19
5.3	Changes and Updates to the Plan	19
6	Visual Quality	20
6.1	Visual Quality Monitoring	20
6.2	Feedback Received in 2019	20
6.3	Changes and Updates to the Plan	20
7	Socio-Community and Economic Effects	21
7.1	Socio-Community and Economic Effects Monitoring	21
7.2	Feedback Received in 2019	22
7.3	Changes and Updates to the Plan	22
8	Summary and Conclusions	23
9	Providing Feedback and Additional Information	23
10	Appendix A	24

1 Introduction

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

- 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

In December of 2019, Baldy Ridge 6 (BR6) pit (Appendix A), resumed operations. An access road was extended through Baldy Ridge 4 (BR4) pit to maintain site access to the Harmer Administration and Shop Complex. Mining within Natal Phase 2 (NP2) extended into the BRE permitted area. NP2 pit was permitted under previous permits and was allowed to extend under BRE. Some of the development within NP2 in 2019 included the BRE permitted area.”

Waste from BR6 pit was deposited on Cedar Spoil and waste from NP2 on Erickson Spoil.

1.2 Feedback

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 Crowsnest 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 offices and all personnel, including both employees and contractors.

Feedback from the community helps Teck understand its impacts to the community. It provides information on whether the mitigation measures are working, and if there are new issues that need to be addressed.

Teck takes all feedback from the community seriously and ensures all practical measures are taken to reduce impacts from the operations.

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 ongoing 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 Management Plan (NMP).

Through consultation, six noise receptor locations (Figure 2-1) were selected based on the following general criteria:

- Feedback from the community and regulators
 - Baldy Ridge Extension project Environmental Assessment Process
 - SCEEAC in 2019 when the NMP was updated
- Model predictions
 - A noise model was created for the BRE EA
 - In 2019, the noise model was updated sample locations were select at the highest modeled noise locations to ensure highest predicated noise levels were captured
- Accessibility and background noise
 - All locations need to be accessible for sampling
 - Sample locations need to have limited noise from other activities which may reduce the quality of results from the sample location

In 2019, an update to the noise model was undertaken to determine predicted noise levels at the six receptor locations (Figure 2-1). The results of the noise modelling show that predicted sound level contributions from EVO are below the Permissible Sound Levels (PSL) established for all six representative receptor locations for years 2020, 2021, 2022 and 2025.

The scope of the NMP 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 NMP encompasses all mining activities, except blasting, that have the potential to generate noise. The Blasting and Vibration Management Plan is given an overview in Section 3. Specifically, the NMP 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);
- Process plant activities; and
- Building and facility construction and operation activities.

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

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

2.1 Noise Monitoring

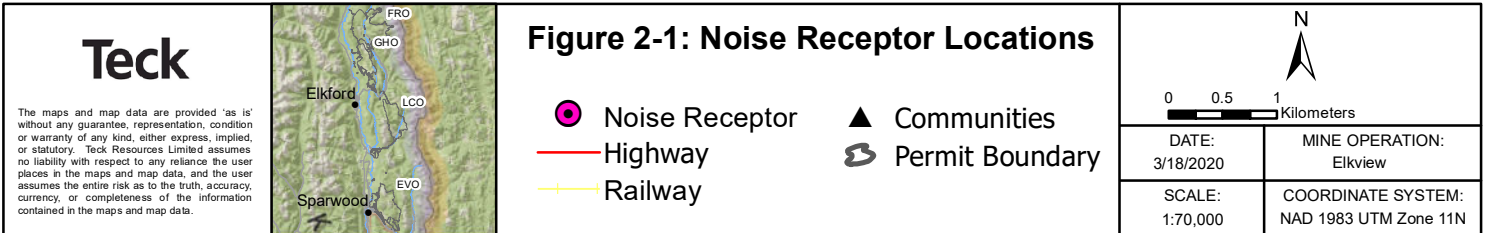
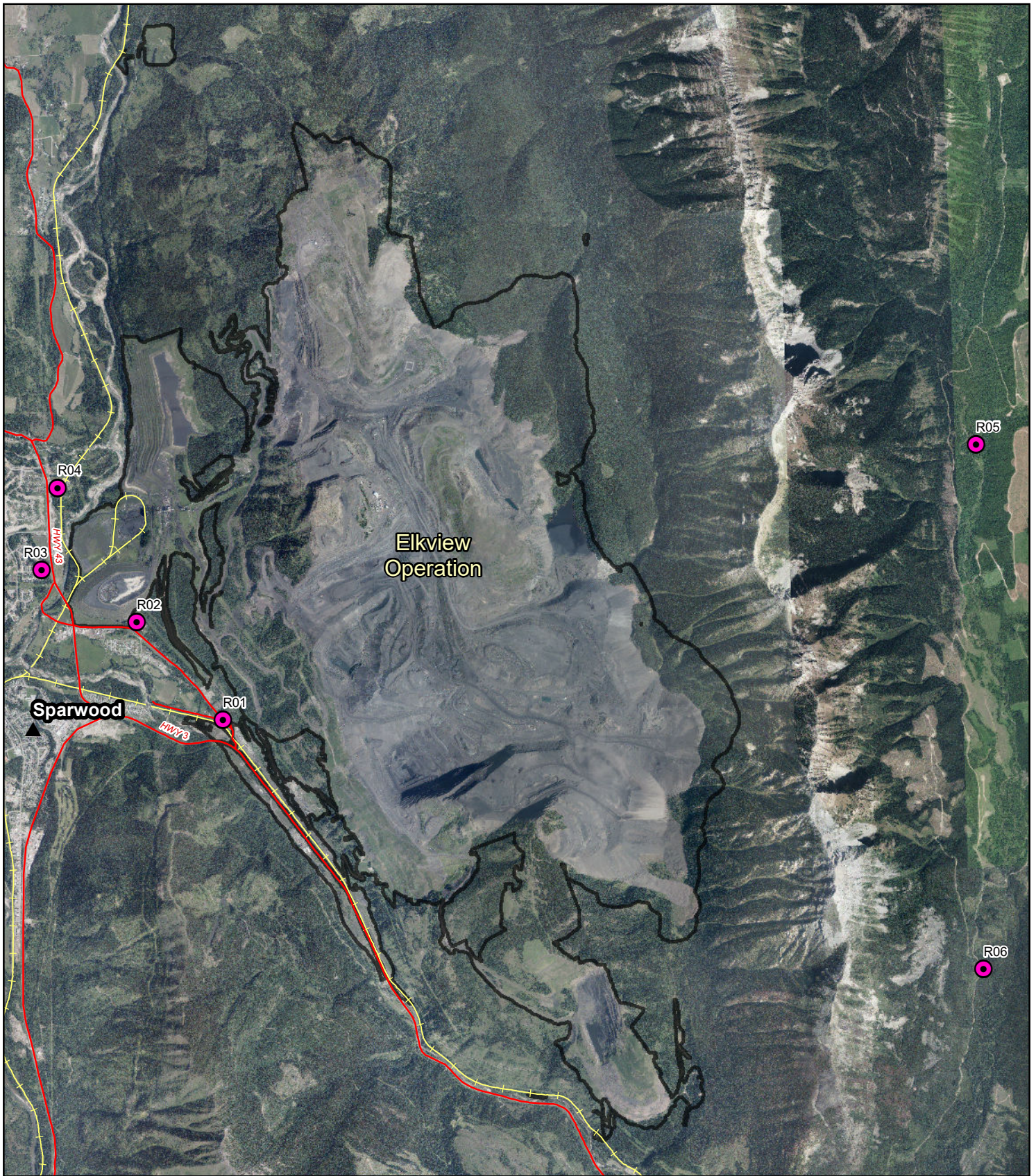
Although the noise model predicts sound levels below PSL outlined in Table 2-1, noise monitoring will continue to confirm these values. A continuous noise monitor was installed in late 2019 at “R02” and annual sampling will be conducted at “R01”, “R02”, “R03” and “R04” (Figure 2-1). This data will be collected in 2020 and presented in the 2020 (April 2021) issue of this report.

In the absence of directly applicable regulation, criteria, or assessment guidelines regarding mining noise in BC, the noise assessment was based on the methods and limits outlined in the BC Oil and Gas Commission (OGC) *Noise Control Best Practices Guideline, March 2009* document (the BC OGC Guideline; BC OGC 2009). The BC OGC Guideline outlines acceptable prediction methods, directions for the consideration of ambient sound, and requirements for the consideration of cumulative effects. The BC OGC Guideline was developed to establish reasonable levels around industrial facilities to reduce the effect of energy resource developments on the acoustic environment. The permissible sound levels outlined in Table 2-1 were developed based on the BC OGC Guideline.

Table 2-1 Receptor locations were selected with feedback from communities of interest

Receptor Location	Day Time (07:00 – 22:00) PSL	Night Time (22:00 – 07:00) PSL
R01– Michel Creek Road	63 dBA L_{EQ}	53 dBA L_{EQ}
R02 – Michel Creek Road	63 dBA L_{EQ}	53 dBA L_{EQ}
R03 – Cyprus Drive	58 dBA L_{EQ}	48 dBA L_{EQ}
R04 – Elk Valley Trailer Park	58 dBA L_{EQ}	48 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



2.2 Feedback Received in 2019

During 2019, no community feedback was received through Teck's Feedback Mechanism related to the NMP.

2.3 Changes and Updates to the Plan

The NMP was updated in 2019 to reflect results of the noise model validation performed in 2019. The Socio-Community and Economic Effects Advisory Committee (SCEEAC) and Ktunaxa Nation Council (KNC) were consulted in the update of the Plan. The plan outlines requirements for updating the Plan, auditing and monitoring (outlined above). The plan will be updated every five years as each model validation will consider five-year increments of the mine plan. For example: the current model takes into consideration 2020, 2021, 2022 and 2025 noise predictions. An audit of the plan will occur every five years in conjunction with an update of the plan in order to incorporate audit findings into the plan.

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. Teck understands that mining is progressing closer to Sparwood and continues with its 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 communities 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 type, 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.

An adaptive management approach is applied to meet Teck's management objectives. This means, changes are made as site conditions and monitoring results dictate or as new technologies emerge. Through on-going blast monitoring, fly rock and blast vibration predictive models are updated. EVO is able to implement changes to blasting practices as mining progresses closer to residences and infrastructure. Monitoring and regular review of the results are the core adaptive management activity that helps guide improvement.

EVO has four monitoring stations for ground vibrations and air overpressure, two of them are located within the community of Sparwood (S1 and S2), a third station (S3) is between the general location (S1 and S2) and the mine site (Figure 3-1). 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 additional monitoring stations. S4 was put in place early 2020 to support operations in BR6, no BR6 blasting was conducted in 2019 (See Appendix A for a general overview map of locations 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. 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

Kent MacDonald, P. Eng. (a qualified professional) reviewed the implementation of the Blasting and Vibration Management Plan. His review identified one administrative non-compliance in 2019.

Through the annual Qualified Professional audit of the EVO Blasting and Vibrations Management Plan, it was determined that twenty-nine blast holes were shot along the edge of the BR2/BR3 boundary just inside the BR3 footprint. The furthest hole was 18.4 meters inside the BR3 pit shell (permitted under EAC #M16-01). Eighteen holes were shot on September 28, 2019 and eleven holes were shot on October 4, 2019. As the BR3 pit dips under BR2 pit, the holes were started in BR2 and inadvertently drilled into BR3 pit.

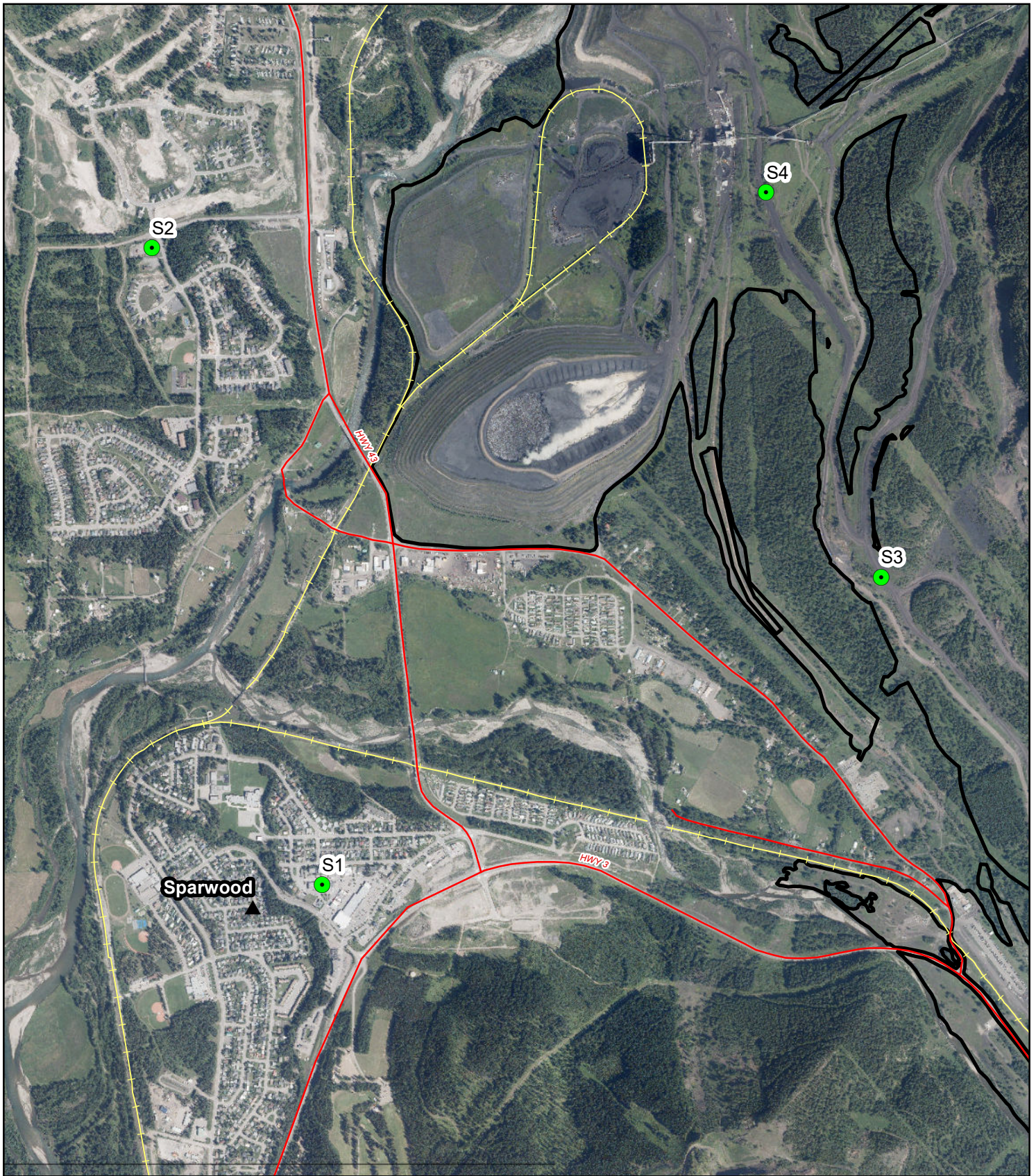
Condition 18 and 20 require that the Visual Quality Management Plan and Blasting and Vibrations Management Plan be approved prior to construction in the BR3 pit. These plans were submitted September 20, but not approved until November 1, 2019, after these blasts were completed.

Blasting and visual quality mitigations and objectives were not impacted by this blasting. Blast monitoring did not indicate elevated vibration and air-overpressure results and no community feedback was received as a results of these blasts. To prevent reoccurrence, a map layer with permitted conditional blast boundaries will be created and used as a final check prior to issuing drill holes.

With the exception of this non-compliance which has been corrected; the qualified professional 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.



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.

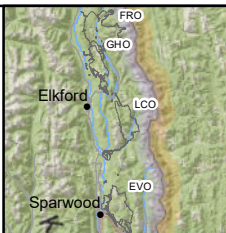


Figure 3-1: Seismograph Locations for Monitoring Blasting & Vibration

- Seismograph Locations
- Highway
- - - Railway
- Permit Boundary
- ▲ Communities

DATE: 3/18/2020	MINE OPERATION: Elkview
SCALE: 1:20,000	COORDINATE SYSTEM: NAD 1983 UTM Zone 11N

3.1 Air Over Pressure and Vibration Monitoring

EVO conducted two hundred and forty two blasts in 2019. The distribution of blasts are shown in Figure 3-2 below. In 2019, some NP2 blasts fell within the BRE footprint.

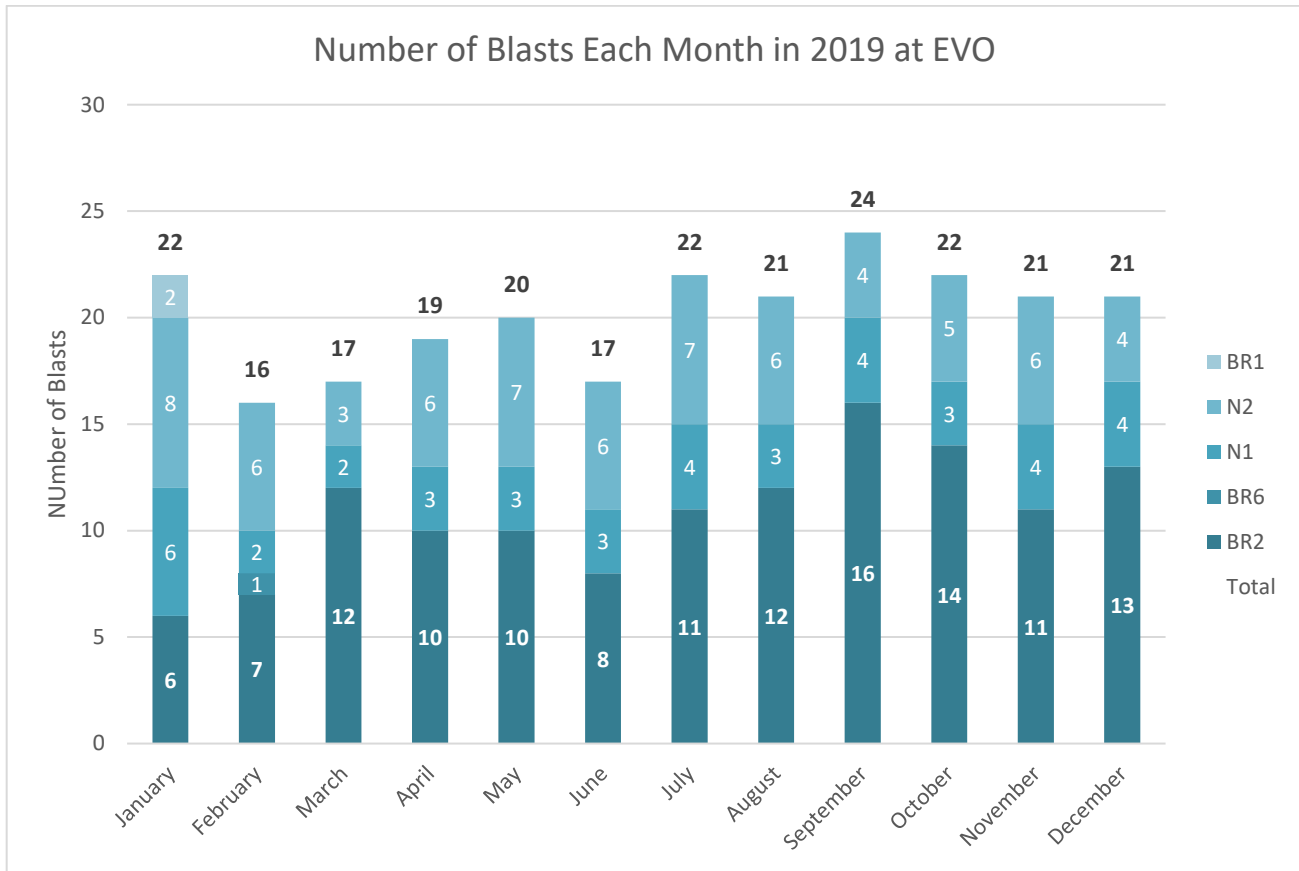


Figure 3-2: Number of blasts at EVO for each month in 2019

1.2 Air Over Pressure and Vibration Monitoring Results

During 2019, a total of twenty-four blast events were detected in 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. All values were well below the specified regulatory limits.

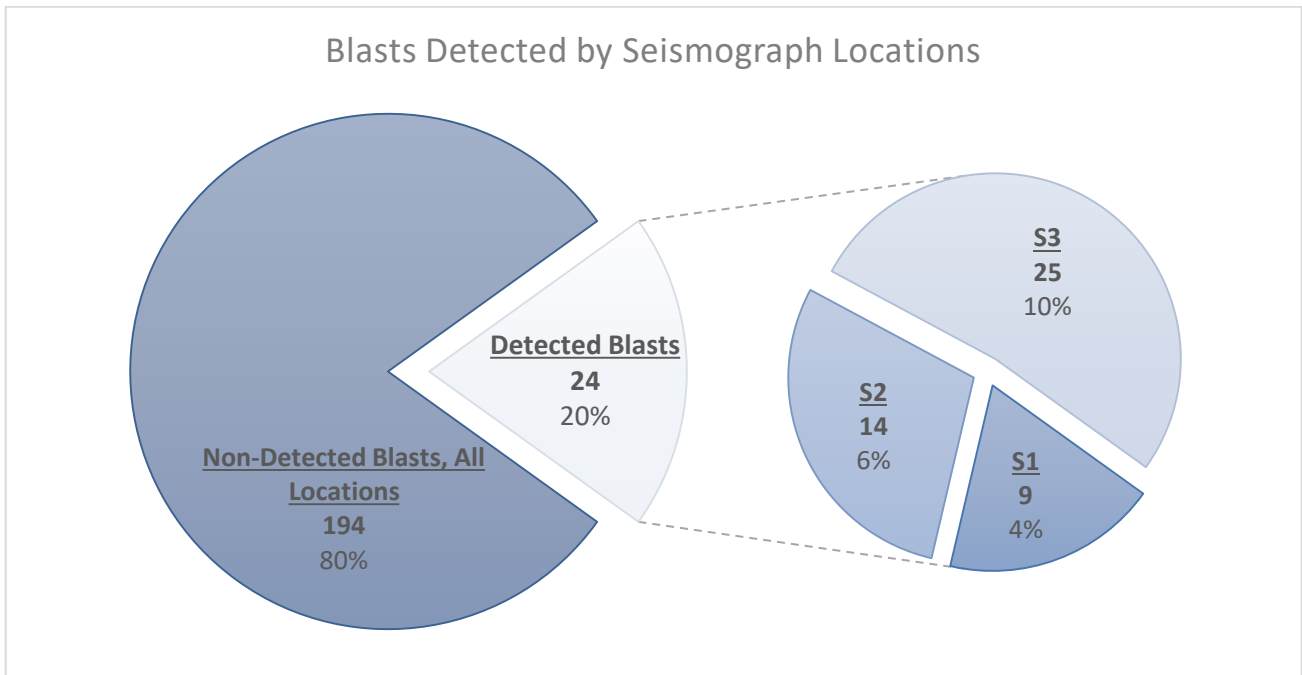


Figure 3-3 Number of blasts detected and non-detected at each seismograph location in 2019 (Location, Number of Blasts, Percent of Blasts)

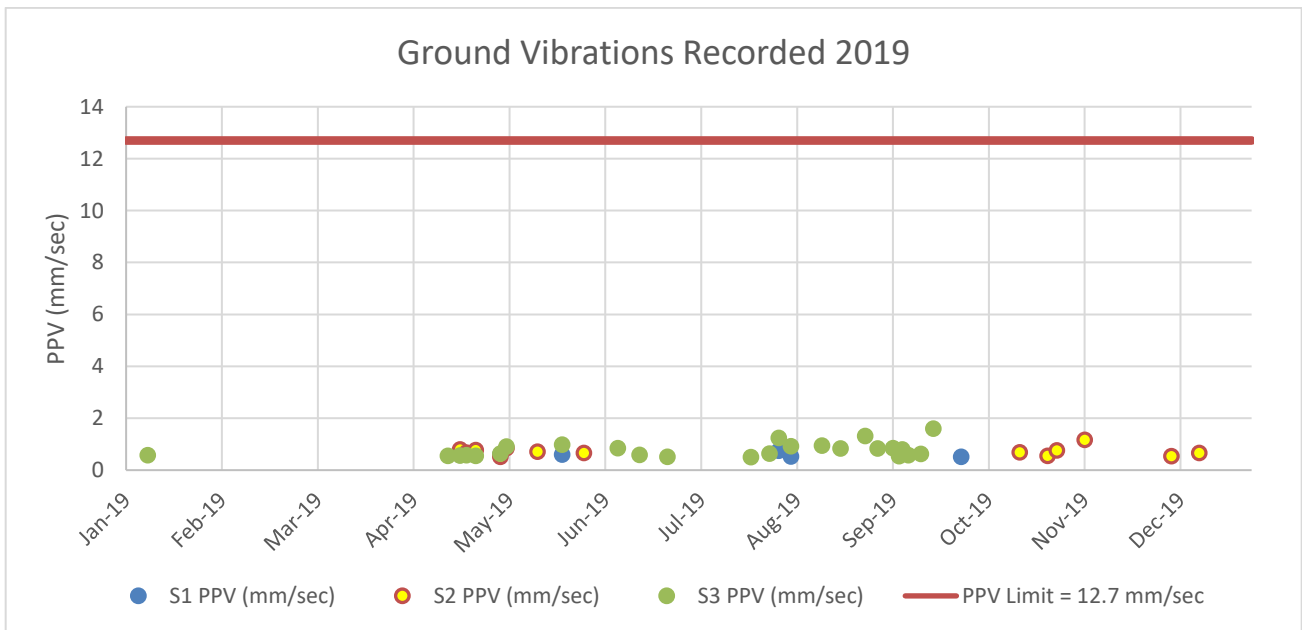


Figure 3-4 Recorded ground vibrations (GV) at each station in 2019 compared to limits

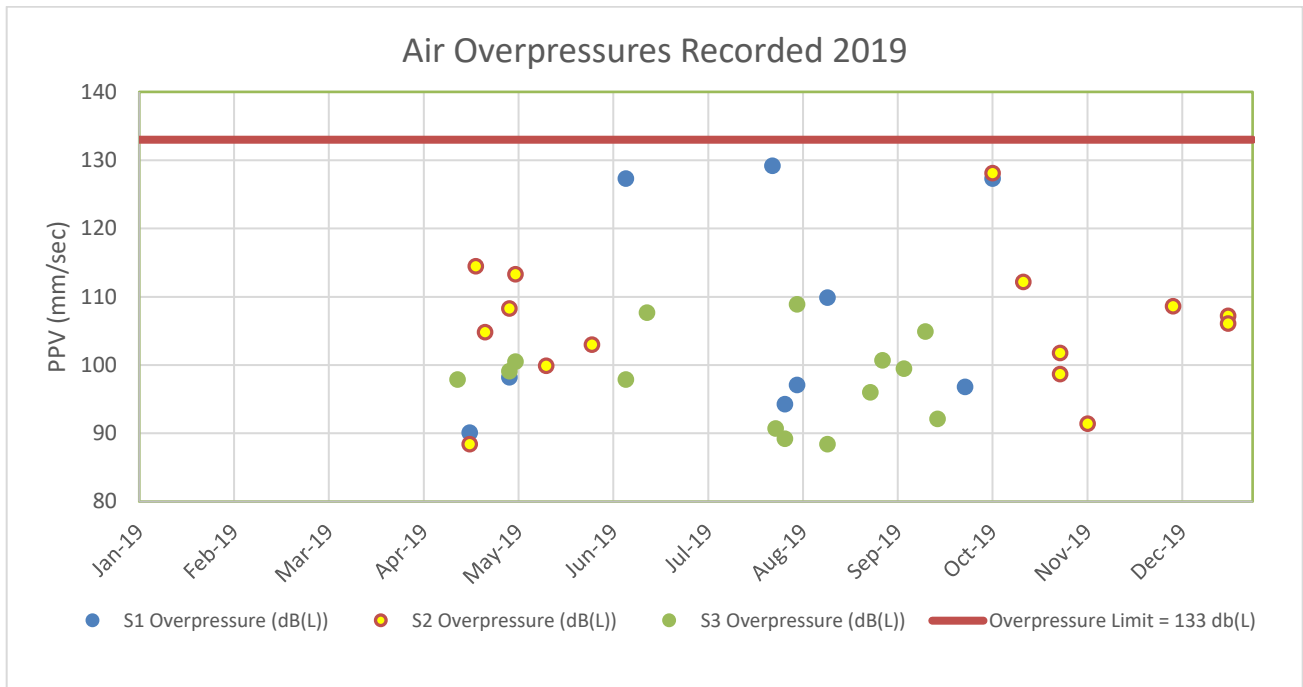


Figure 3-5 Recorded air over pressure (dBI) at each station in 2019 compared to limits

3.2 Feedback Received in 2019

During 2019, one piece of 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

The Blasting and Vibration Management Plan was updated in consultation with the SCEEAC and EAO in 2019. The plan outlines mitigations for blasting and vibration management, the need for trigger action response plans, qualified professional review requirements, monitoring and continual improvement programs.

A qualified professional will be reviewing off-site infrastructure, conduct a fly rock monitoring study and review the current ground vibration monitoring and management program in 2019. Recommendations from this work may require an update of the plan.

4 Air Quality and Dust Control

The primary objective of the Air Quality and Dust Control Management Plan (AQDCMP) 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, blasting and stockpiling of materials. Source emissions (eg. dryer stack emissions) at EVO is primarily related to coal processing. The primary sources, associated with GHG and managed within the plan, are from light vehicles, mining equipment emissions and source 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.

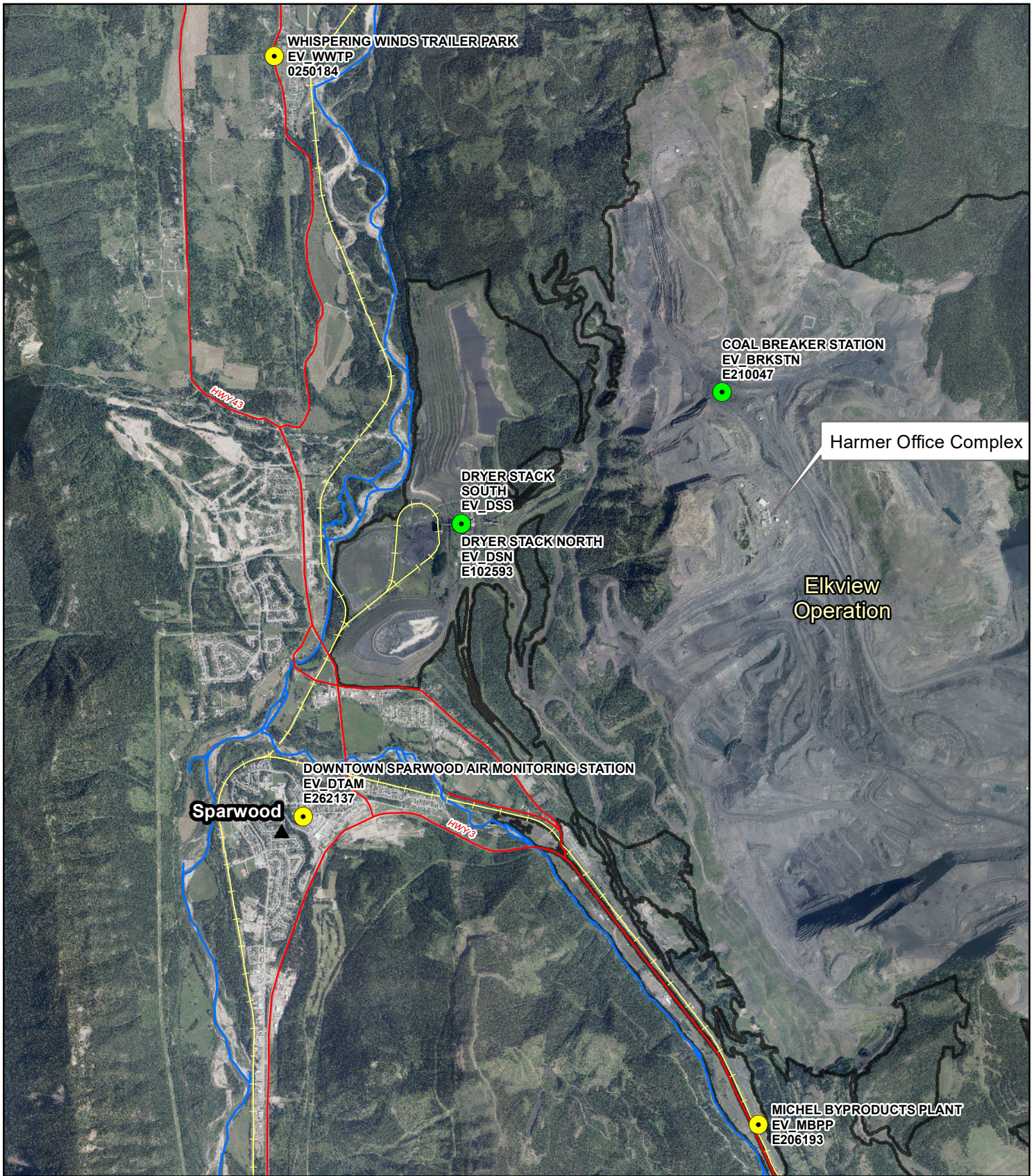
Fugitive dust: dust not emitted from a definable point source.

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

4.1 Air Quality Monitoring

During 2019, 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 (ENV). Source sampling was conducted in Q2 2019 and again in Q4 2019. Source monitoring is used to assess the effectiveness of control measures on particulate and GHG release at a point or single source.



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.

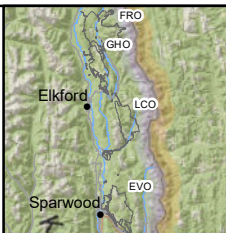


Figure 4-1: Permitted Air Monitoring Locations

- Source Monitoring
- Ambient Monitoring
- ▲ Communities
- S Permit Boundary
- Highway
- Railway
- Major Water Course

DATE: 3/18/2020	MINE OPERATION: Elkview
SCALE: 1:50,000	COORDINATE SYSTEM: NAD 1983 UTM Zone 11N

4.1.1 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.

Source emissions sampling in Q2 2019 occurred from May 27 to May 29. Results from the Q2 2019 source emissions sampling remained below permit limits for both the Dryer Stacks and Breaker Stack. Results of Q2 2019 source emissions sampling are shown in Table 4-1.

Source emissions sampling in Q4 2019 occurred from November 18 to 21. Results from the Q4 2019 source emissions sampling remained below permit limits for both the Dryer Stack and Breaker Stacks. Results of Q4 2019 source emissions sampling are shown in Table 4-1.

Table 4-1 Source monitoring results in 2019

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	May 29, 2019	10.5	<9.26	1287
	Nov 21, 2019	9.3	118	1283
Permit Limit		14	150	-
North Dryer Stack	May 27, 2019	-	38.2	1630
South Dryer Stack	May 28, 2019	-	38.5	1314
Combined Dryer Stacks	-	109.9	-	-
North Dryer Stack	Nov 18, 2019	-	30.2	1292
South Dryer Stack	Nov 19, 2019	-	22.4	1240
Combined Dryer Stacks	-	108.0	-	-
Permit Limit		133	85	-
Annual Average Clean Coal Production				1369

4.1.2 Ambient Monitoring

EVO monitors ambient air quality at three monitoring locations: Downtown Sparwood at 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).

In 2019, the PM_{2.5} 98 percentile result for comparison to BC AAQO remained below objectives. There were 2 (0.6%) daily average PM_{2.5} concentrations above objectives at MBPP; May 31 (91.63 ug/m³) and June 1 (35.60 ug/m³). There was 1 (0.3%) daily average PM_{2.5} concentrations above objectives at WWTP on June 1 (27.52 ug/m³). Daily average concentrations above objectives for PM_{2.5} are likely associated with forest fires in Alberta during that timeframe. This is supported by the same trend being observed at the Hosmer background ambient air monitor which saw a daily average results above objectives on May 31 (66.16 ug/m³) and June 1 (25.75 ug/m³).

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

There were 4 daily average PM₁₀ concentrations above BC AAQO in 2019; 3 (1%) at DTAM and 1 (0.3%) at WWTP. Results above objectives at DTAM occurred on February 6 (69.32 ug/m³), March 22 (50.03 ug/m³) and March 25 (52.26 ug/m³). Results above objectives at WWTP occurred on February 6 (51.88 ug/m³). Based on predominant wind directions, PM₁₀ daily average concentrations above objectives are likely associated with mining activity from EVO. The PM₁₀ daily average concentration above objective at Hosmer occurred May 31 (80.67 ug/m³) and is likely associated with forest fires in Alberta impacting the area during that timeframe.

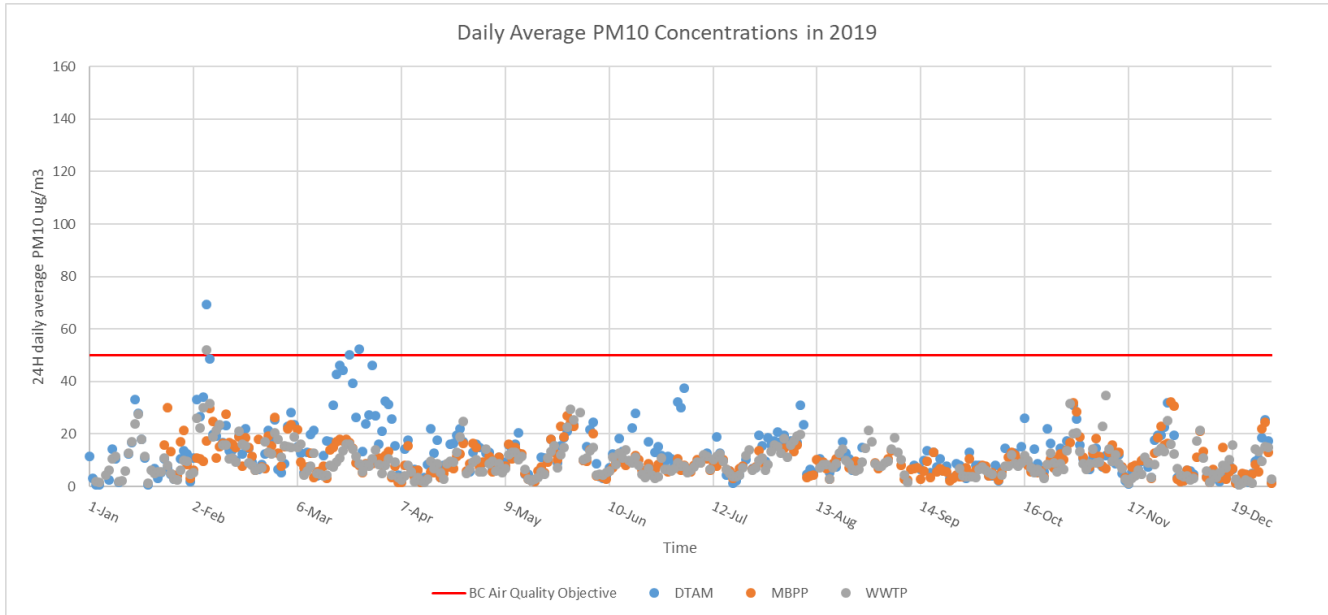


Figure 4-2: PM₁₀ daily average results at EVO continuous air monitoring locations in 2019

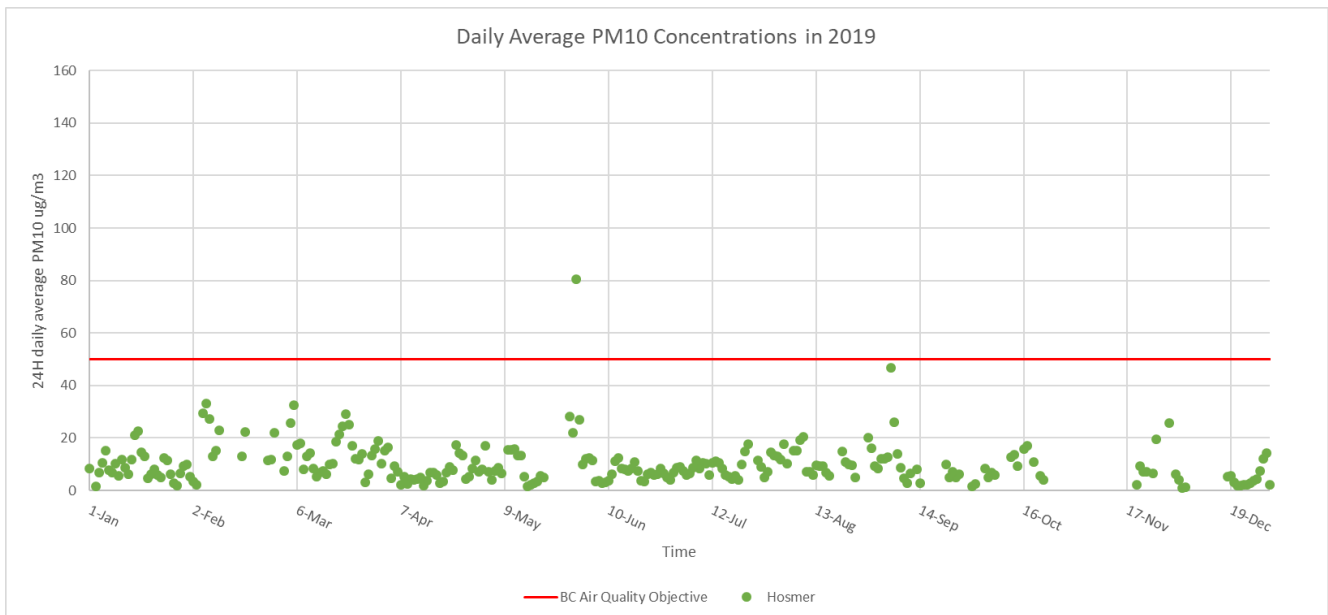


Figure 4-3: PM₁₀ daily average results at Hosmer continuous air monitoring location in 2019

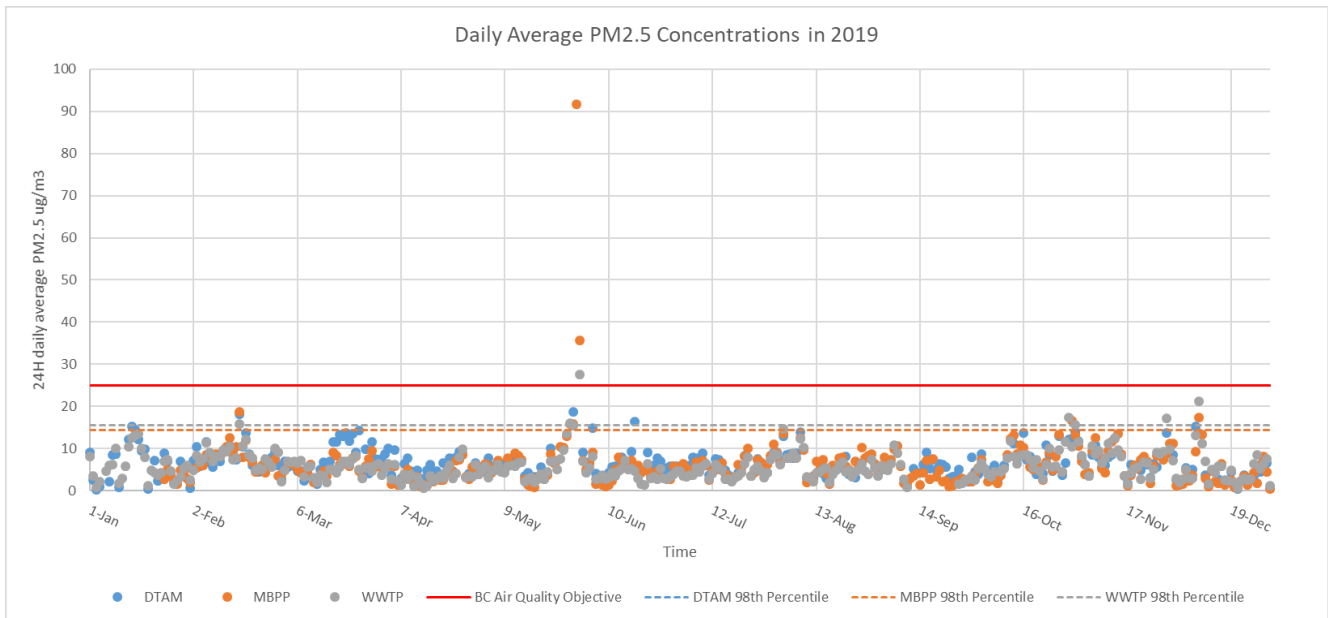


Figure 4-4 PM_{2.5} daily average concentrations at EVO continuous air quality monitoring locations in 2019

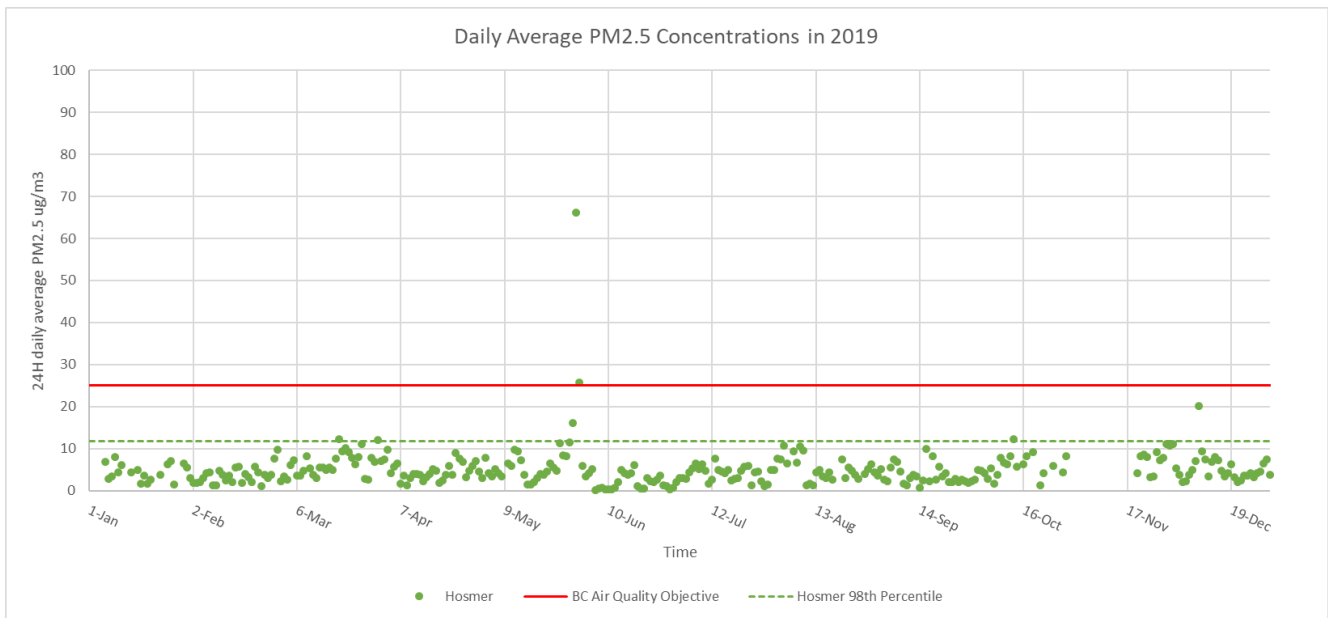


Figure 4-5 PM_{2.5} daily average concentrations at Hosmer continuous air quality monitoring locations in 2019

4.2 Feedback Received in 2019

Teck takes air quality and dust very seriously and is continuously seeking to improve its dust management performance. Both community feedback and SCEEAC recommendations, report on the effectiveness of current practices and inform innovative solutions Teck is pursuing in partnership with industry experts.

In 2019, Teck’s Elkview Operations received 179 pieces of public feedback regarding air quality and dust. [Table 4-2](#) summarizes all feedback received in 2019.

Table 4-2 Summary of community feedback related to air quality and dust

Topic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
Coal Haul	14	1	1										16
Dirty Vehicles			5	2					2				9
Dusting Train			1										1
Dust on property				12	8		2			2	6	1	31
Requests for property cleaning					13	11	8	14	13	47	12	2	120
Dust in the community/street											2		2
2019 Total Number of Feedback Related to Air Quality and Dust													179

4.3 Changes and Updates to the Plan

There were no changes to the AQDCMP in 2019. The AQDCM, submitted August 2018, received comment from the ENV late 2019. The Plan will be updated to include these comments and any feedback received through the adaptive management framework of the SCEEAC in 2020. The AQDCMP is also being updated in 2020 to include new objectives, mitigations and monitoring for visual dust.

5 Reclamation and Closure

The Reclamation and Closure Plan details mine planning and reclamation activities for five years (2017 to 2022). 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 for use by local flora and fauna;
- Working towards a net positive impact (NPI) on biodiversity in areas impacted by Teck's operations; and
- 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 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 2019

EVO currently has 1,254.2 hectares of area that is considered to be in reclamation status. The reclamation completed accounts for approximately 29% of the disturbance area at Elkview.

In 2019 there were 10,890 seedlings planted in three areas totaling 10.2 hectares. The South Pit planting area was 1.4 hectares with a total of 2,660 seedling planted. The Cedar East planting area was 7.5 hectares with a total of 8,140 seedlings planted. The Coarse Coal Rejects planting area was 1.4 hectares with a total of 90 seedlings planted. All of the seedlings were native species and suited to the ecosystem.

The Course Coal Rejects at EVO continue to be progressively reclaimed as additional lifts are added. There was approximately 12,600m³ of cover material spread over 4.2 hectares at a depth of approximately 30cm.

A hydro-seeding treatment was applied on a total area of 4.2 hectares on the Coarse Coal Reject. All of the seeding planting completed in 2019 was appropriate to the specific ecosystems.

An extensive Invasive Plant Management Program was completed in 2019. A total of 854.7 hectares of area was inventoried with 38.8 hectares of area treated for invasive plants.

There are two Closure Landform Assessments in progress, the current focus of these assessments include overall stability and drainage integrity. Closure landform assessments are in progress on the Harmer Knob Spoil and Gravel Pit Area.

The Biodiversity Management Plans outlines priority at-risk species that require species-specific management actions. Teck has multiple Species Management Plans that provide detail on mitigation actions that will achieve a beneficial outcome to the species.

5.2 Feedback Received in 2019

During 2019, no community feedback was received through Teck's Feedback Mechanism related to the Reclamation and Closure Plan.

5.3 Changes and Updates to the Plan

No updates occurred to the Reclamation and Closure Plan in 2019. This plan is updated at least every five years and was last updated in 2017. The updated Five Year Mine and Reclamation Plan will be in June 2022.

6 Visual Quality

In 2019, a Visual Quality Management Plan (VQMP) was developed in consultation with the SCEEAC, KNC Ministry of Forest, Lands, Natural Resource Operations and Rural Development (FLNRODR) and EAO.

6.1 Visual Quality Monitoring

The VQMP outlines a monitoring, reporting and auditing program which will occur every five years or in alignment with the Five-year Reclamation and Closure Plan. The first audit is expected to be in 2026 and members of the KNC and SCEEAC will be invited to participate. The process and standards for this monitoring are required to be developed in 2020.

6.2 Feedback Received in 2019

In 2019, Teck's Elkview Operations received 47 pieces of public feedback regarding visual quality. Table 6-1 summarizes all feedback received in 2019.

Table 6-1 Summary of community feedback related to Visual Quality Management Plan

Topic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
Dust from/above Elkview	1	1	32	1	1	2		6	2		4		46
Blasting at Elkview	1												1
2019 Total Number of Feedback Related to Visual Quality													47

6.3 Changes and Updates to the Plan

The VQMP was created in 2019 and includes milestones for further development in 2020. These included the identification of Key Viewpoints and Visual Management zones. Key Viewpoints are locations which represent viewing locations of the project and will be used to track changes over time. Visual Management Zones are used to divide the project based on distance from Key Viewpoints and indivisibility. Various visual management tools will be used within each zone. These tools will also be compiled in a tool kit in 2020 which will be used in future mine planning starting in 2021.

7 Socio-Community and Economic Effects

EVO and the District of Sparwood (DOS) worked collaboratively throughout 2018 to prepare the SCEEMP and outline the role and objective of the SCEEAC. The SCEEAC is a group intended to:

- Perform an advisory role, focused on making recommendations to DOS 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; and,
- Assist in identifying on-going socio-community impacts and possible solutions for adaptive management.

The Terms of Reference for the SCEEAC was approved by DOS Council on December 3, 2018. The mandate of the SCEEAC is to comply with Condition 21 of the BRE permit. The Terms of Reference are viewable on the DOS website; www.sparwood.ca/livable.

The SCEEAC is a select committee of Council for the DOS. DOS 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.

The SCEEAC met nine times last year in two-hour sessions featuring presentations from different Teck experts related to the BRE project. Meeting minutes are located here: <https://sparwood.civicweb.net/filepro/documents/97460>. The SCEEAC also attended the Annual Public Meeting in May, 2019.

7.1 Socio-Community and Economic Effects Monitoring

A Livability Study (Study), led by the DOS was the first step in monitoring performance with respect to SCEEMP. The Study is an examination of livability in Sparwood. It provides 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 mining 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 the DOS, Teck, or others) to areas that will have best outcome/returns.

The Study was completed in November 2019. It will be presented to the SCEEAC in February. Socio-community and economic effects monitoring will commence following the direction of the SCEEAC and may impact the adaptive management process of the SCEEMP.

<https://sparwood.civicweb.net/FileStorage/4C8D14839D1F4DDA9B18E54BFB4F78FE-Livability%20Study%20-%20What%20We%20Learned%20Report.pdf>

7.2 Feedback Received in 2019

During 2019, no community feedback was received through Teck’s Feedback Mechanism related to the Socio-Community and Economic Effects Management Plan.

There were nine SCEEAC meetings in 2019 that included question periods from the Committee and the public. As required under the SCEEMP, an Annual Public Meeting was also held in May and the Access Boundary maps were communicated in September. Meeting minutes are located here:

<https://sparwood.civicweb.net/filepro/documents/97460>

Table 7-1 Engagement regarding the Socio-Community and Economic Effects Management Plan in 2019

Date	Engagement
January 14, 2019	SCEEAC Special Meeting
February 13, 2019	SCEEAC Special Meeting
March 13, 2019	SCEEAC Special Meeting
April 15, 2019	SCEEAC Special Meeting
April 30, 2019	SCEEMP Annual Report Published
May 6, 2019	SCEEAC Special Meeting
May 14, 2019	Annual Public Meeting
May 15, 2019	SCEEAC Tour of BRE
June 24, 2019	SCEEAC Special Meeting
August 12, 2019	SCEEAC Special Meeting
September 5, 2019	Teck Access Boundary maps published in the Fernie Free Press, distributed to outdoor enthusiast clubs, and available at mine site gatehouses.
September 16, 2019	SCEEAC Special Meeting
October 16, 2019	SCEEAC Special Meeting
December 4, 2019	Outdoor Enthusiast Meeting – Access Boundary Maps Discussed

7.3 Changes and Updates to the Plan

The SCEEMP was finalized in 2019. The overall purpose of the SCEEMP is to provide a comprehensive adaptive management framework and process designed not only to ensure compliance with the BRE EA Certificate, Condition 21 (Section 1.2), but also to be the foundation for a long-lasting and effective partnership between Teck Elkview and the DOS. The adaptive management process cycles every three years and will apply to the SCEEMP in 2022.

8 Summary and Conclusions

In 2019, the noise model was finalized and incorporated into an update of the Noise Control Plan. Monitoring is outlined in the plan for 2020 and results of this will be reported in the 2020 annual report.

The Visual Quality Management Plan was created in 2019 and outlines further consultation in 2020 to develop Key View-points and determine applicable visual management strategies for various areas of the BRE project.

In 2019, 10.2 hectares at the South Pit, Cedar East and Coarse Coal Rejects we planted with seedlings. All of the seedlings were native species and suited to the ecosystem.

At all ambient air monitoring locations, EVO saw lower average particulate matter concentrations for both PM_{2.5} and PM₁₀ as compared to 2018, likely attributed to the lack of forest fires in 2019. The 98th percentile for daily average PM_{2.5} did not exceed BC Ambient Air Quality Objectives at any monitoring station. Daily average PM_{2.5} results above objectives are likely associated with an Alberta forest fire that impacted the Elk Valley in May/June 2019. There were four PM₁₀ daily average concentrations above objectives in 2019, all likely influenced by mining activity at EVO.

Source emissions sampling occurred at the Dryer Stacks and Breaker Stack in Q2 and Q4 2019. All source emissions results for 2019 remained below permit limits.

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

The Livability Study was completed in November 2019. Socio-community and economic effects monitoring will commence following the direction of the SCEEAC and may impact the adaptive management process of the SCEEMP.

9 Providing Feedback and Additional Information

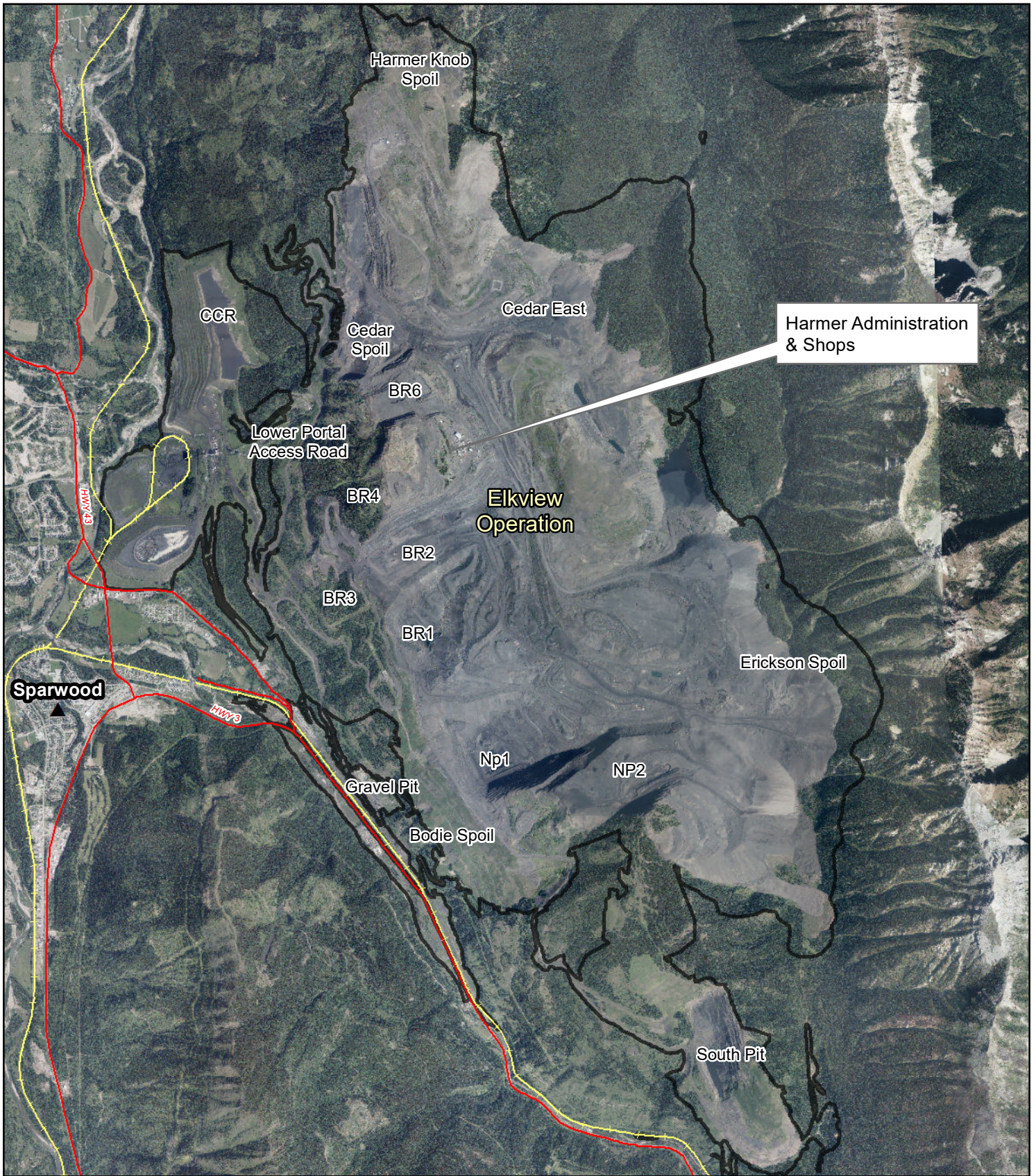
This report and a more detailed Annual Air Report is available at www.teck.com/elkview-reports for review. Due to the infancy of the Noise, View-Scape and Blasting and Vibrations Programs, more detailed reports on these topics are currently not required through their associated management plans.

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

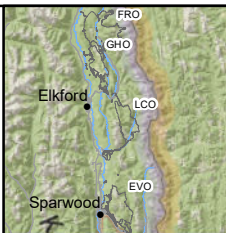
Responses to feedback will be sent if contact information is given.

An Annual Meeting to discuss this report will be scheduled with the DOS on May 6 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 DOS Main Office following the meeting.



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 (Appendix A)

- Highway
- Railway
- ▲ Communities
- Permit Boundary

N

DATE: 3/18/2020	MINE OPERATION: Elkview
SCALE: 1:60,000	COORDINATE SYSTEM: NAD 1983 UTM Zone 11N