IMERYS

June 2, 2025

Heather Kuoppamaki, P.E.
Project Engineer
Cleaner Air Oregon, Oregon Department of Environmental Quality
700 NE Multnomah St. Suite 600
Portland OR 97232

RE: Imerys Lakeview – Cleaner Air Oregon Emissions Inventory Submittal

Dear Heather Kuoppamaki,

Imerys Lakeview (Imerys) is pleased to timely submit the Cleaner Air Oregon (CAO) Emission Inventory for its Lakeview, Oregon facility (the Lakeview facility). On March 23rd, 2025, Oregon Department of Environmental Quality (DEQ) extended the deadline for submittal of the CAO Emissions Inventory to June 2nd, 2025 to allow Imerys to obtain more recent composition data for perlite ore through analyzing material processed at the Lakeview facility. Accordingly, with this letter, Imerys is submitting the enclosed CAO Emissions Inventory Form and associated documents through Your DEQ Online (YDO) to comply with the requirement to submit an emissions inventory pursuant to Oregon Administrative Rule (OAR) 340-245-0030.

The enclosed inventory form and supporting documentation was prepared using best engineering estimates, process knowledge, source test data, and/or published emission factors for toxic air contaminants (TACs) listed in OAR 340-247-8010 table 1(DEQ Priority List). Imerys reserves the right to update the enclosed documentation upon obtaining updated and/or additional information.

FACILITY DESCRIPTION

The Lakeview facility located at 96078 Industrial Ln, Lakeview, OR 97630, Oregon, is a Perlite drying facility that operates under a Simple ACDP 19-0001-SI-01 and the following Standard Industrial Classification (SIC) Codes:

- 1442/212321 Rock crushing, stationary, 25,000 or more tons/year crushed.

Raw Perlite ore is delivered to the site by truck and is placed in a raw ore stockpile. The material then is crushed, screened and dried using a rotary kiln dryer. The processed material is stored in silos before the final product is loaded out via railcars. There are three baghouses controlling the dryer process, the screening and crushing of the dried product and the rail loadout operations. Used Oil is used to operate the dryer at the facility. The combustion of used oil and the processing of perlite are the two main sources of TAC emissions at the Lakeview facility. The baghouse waste is put into an inactive ore stockpile. There are fugitive emissions from the uncontrolled conveyor drop points prior to the dryer as well as from the two stockpiles on site. Lastly, there are some non-exempt maintenance activities including welding and some aerosol maintenance items (i.e., paints, cleaning solvents).

CAO EMISSION INVENTORY METHODOLOGY

Identification of Toxic Emission Units (TEUs)

Imerys has designated toxic emission units (TEUs) consistent with permitted emission units wherever possible. The following TEUs include permitted TEUs as well as TEUs that Imerys has identified which were historically exempt from stationary source permitting requirements prior to being called into the CAO program:

- Baghouses
  - Rotary Dryer Baghouse (TEU-RDB)
  - Main Baghouse (TEU-Main)
  - New Baghouse (TEU-New)
- Rotary Dryer (TEU-RDO)
- Stockpiles
  - Active Raw Ore Stock Pile (TEU-AS)
  - Inactive Ore Stock Pile (TEU-IS)
- Conveyor Drop points
  - Drop points 1 through 6 (TEU-DP1 through TEU-DP6)
- Welding
  - Welding rod 1 through Welding rod 4 (TEU-Weld1 through TEU-Weld4)
- Maintenance activities
  - Maintenance Activity 1 through Maintenance activity 4. (TEU-MA1 through TEU-MA4)

Identification of Toxic Air Contaminants Potentially Emitted

As part of the emission calculation process, Imerys reviewed processed materials at the Facility to determine the presence of TACs as regulated under OAR 340-247-8010, Table 1. The enclosed emission inventory form reflects TACs identified that Imerys estimated could be emitted from the various TEUs at the Facility. Some TACs for welding and maintenance activities were not included if their reporting thresholds were exempt under Appendix A or Appendix B of the exempt TEU Reporting rules under OAR 340-245-0060(3)(b).

Actual and Potential Throughputs

For potential annual throughput presented in this inventory as the requested PTE, Imerys utilized the annual throughput and operating parameters limitations as contained in Simple ACDP 19-0001-SI-01. For the emission activities that do not have a potential annual throughputs identified in the permit, the following assumptions were used.

- Welding Materials.
  - The potential annual throughput of welding rods for each individual type of rod were calculated in 1,000 lbs used according to the overall weight of the rods and the maximum number of rods used annually based on discussions with facility personnel.
- Maintenance activities
  - The potential annual throughput of maintenance activities were based on the weight and volume of containers and the maximum annual expected use based on discussions with Facility Personnel.
- The Conveyor drop points used the same permitted facility throughput as the baghouses.

To estimate potential daily throughputs, Imerys utilized the annual production rate applied over 365 days. It should be noted that the Facility operates 24 hours 7 days per week and as such, potential daily throughputs are generally representative of continuous operation unless otherwise noted in the emission inventory form.

For actual annual throughputs presented in this emission inventory submittal, Imerys utilized throughout information for the most recent calendar year (CY2024) for all permitted TEUs at the Facility.[1] Daily actual throughput estimates were calculated assuming the maximum daily production rate, consistent with the potential daily throughputs calculation.

Emission Calculation Methodology

To calculate emissions from the various toxic air contaminant (TAC) emitting activities, Imerys utilized approved methodology as regulated in Simple ACDP 19-0001-SI-01 with the following refinements:

- Perlite Test Data.
  - Imerys used Inductively Coupled Plasma (ICP) data collected on raw perlite ore and the final completed product after processing (process ore) and calculated the weight percentage for each tested contaminant. This data can be found in Attachment 2. For contaminant data that is not included in the DEQ TAC priority list, the data was not evaluated. The maximum weight percentage between the raw and process ore tests were used for conservancy, and undetected chemicals were treated as half of the detection limit. Vanadium (fume or dust) was not included as the results included Vanadium pentoxide[2]. While the crystalline silica was a large proportion of the perlite ore in both tests, only 5% of the silica in the perlite ore is in the respirable form, as stated in the review report of the permit for the Lakeview facility.[3] These values will apply to all baghouse, drop points, and stockpile emissions.
- Baghouses
  - Each baghouse's PM emission factors given in the permit were multiplied by the perlite test data weight percentage's described above to supply the TAC emission factors.
- Rotary Dryer
  - The dryer emission factors were from AP-42 chapter 1.11 Table 1.11-4 for metals and AP-42 Table 1.11-5 for organic compounds, the Simple ACDP 19-0001-SI-01, as well as from source testing provided by the supplier of the used oil which can be found in Attachment 2. In the source testing if there was a non-detect TAC, than half of the detection limit was used for conservancy. This applied for Arsenic and compounds, Cadmium and compounds, and Chromium and compounds.
- Fugitive Emissions
  - Conveyor drop point (DP1 – DP6) emissions for PM were calculated using Equation 1 of AP-42 Section 13.2.4. The average wind speed was taken form meteorology data from the nearby Klamath Falls (KLMT) airport and the water content used the minimum loss of ignition (LOI) percentage of the two Perlite tests for conservancy. The maximum weight percentages described above were multiplied by the PM emission factor to develop the TAC emission factors for the drop points.

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[1] OAR 340-245-0040(4)(a)(B)(i)(I)

[2] The testing laboratory confirmed that the tests for individual metals were included with the tests for the oxides of that element.

[3] An example of information on this subject is the following article published on 3/7/14 in the Journal of Inhalation Toxicology, International Forum for Respiratory Research (a copy is in the facility file): "Perlite Toxicology and Epidemiology – A Review, L. Daniel Maxim, Ron Niebo, & Ernest E. McConnell".

- Stockpile emissions use the emission factors provided in the Simple ACDP 19-0001-SI-01 permit for PM. The Active Raw Ore test results are multiplied by this emission factor to develop the TAC emission factors for the Active Stockpile (TEU-AS) while the maximum weight percentages of the Perlite tests are multiplied by the Inactive stockpile (TEU-IS) PM emission factors to develop the TAC emission factors.
- Maintenance material emissions are calculated by comparing the Safety Data Sheets (SDS) weight percentage of each contaminant on the DEQ priority list, multiplied by the maximum usage of the material used. The SDS's can be found in attachment 2. That contaminant usage is then compared against the threshold for insignificant activities provided in Appendix A of the exempt TEU Reporting rules under OAR 340-245-0060(3)(b). If the total usage of a chemical on the DEQ priority list is below the threshold then emissions were not calculated, however the usage was reported on the material balance sheet of the AQ520 form. If the chemical was not listed on Appendix A then the TAC emissions were calculated.
- Welding emissions are calculated by comparing the Safety Data Sheets (SDS) weight percentage of each contaminant on the DEQ priority list, multiplied by the usage of the material used. That contaminant usage is then compared against the threshold of individual welding rod types in Appendix B of the exempt TEU Reporting rules under OAR 340-245-0060(3)(b). If the TAC usage from the welding rods was above the exemption threshold or if the rod was not listed in Appendix B of the exempt TEU reporting rules, then emissions were calculated. Emission factors were either taken from AP-42 section 12-19, using the Oregon DEQ Cleaner Air Oregon Welding Emission Calculation Tool (attachment 2) or calculated directly from the SDS using the San Diego Air Pollution Control District (SDAPCD) equation EF= FGR (Table 12.19-1) x FCF x Ci (MSDS). The Fume Generation Rate (FGR), or Total Fume Emission Factor, is used when available in AP-42 Section 12.19 (Table 12.19-1). The Fume Correction Factor (FCF) was developed through SPAPCD engineering discussions with the welding industry, and lastly the constituent weight percent (Ci) is obtained from the welding rod SDS.

Enclosed Documentation

In addition to the CAO Emissions Inventory Form or AQ520, and the AQ523 form or Categorically exempt Toxic Emission Units form, Imerys has also enclosed the following to adequately support the emission related information presented in the AQ520. This supporting documentation, includes:

- Attachment 1 containing an excel version of the emission calculations detailing methodologies and emission factor references, and
- Attachment 2 containing SDS's for welding and maintenance activities, the CAO welding emissions tool, source test result from the Perlite Ore ICP tests and used oil testing and specifications from the used oil vendor.
- Attachment 3 containing a site map of the facility.
- Attachment 4 containing a process flow diagram of the facility.

If you have any questions or comments about the information presented in this letter, please do not hesitate to contact me at David.dooley@imerys.com or at 541-947-5755 Ext. 25, or Greg Nostrand at greg.nostrand@trinityconsultants.com or at 607-592-3013. We look forward to continuing to work with Oregon DEQ on the CAO risk assessment process.

Sincerely,

David Dooley,

Operations and Production Manager

cc: Karon Brown, Imerys (Pheonix, AZ)
Greg Nostrand, Trinity Consultants (Portland, Oregon)
Jesse Gonzalez, Trinity Consultants (Portland, Oregon)

ATTACHMENT 1

Emission Factor Calculations

Emission Calculations Attached Electronically.

Attachment 2

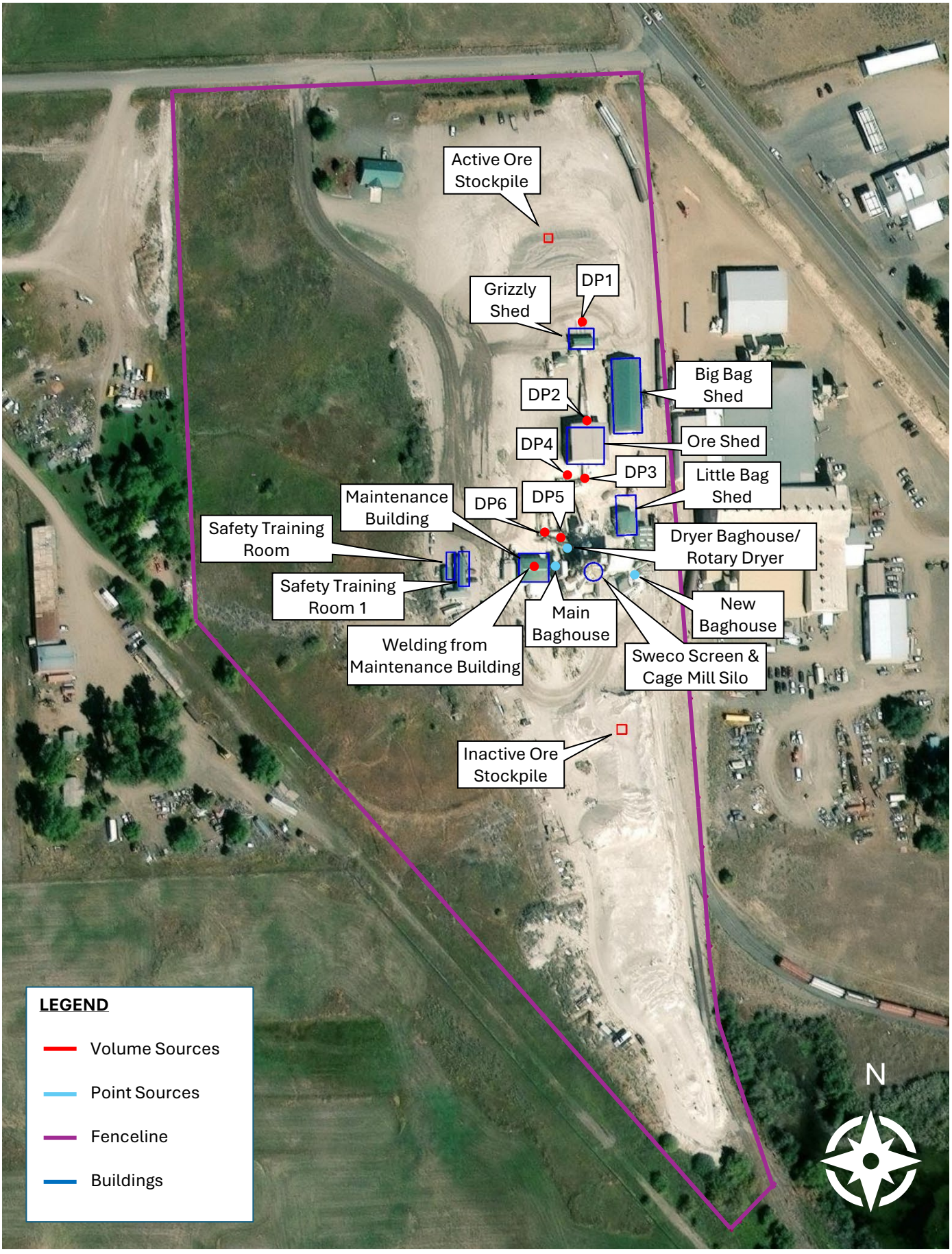
Supporting Emission Calculation Information

Supporting Emission Calculation Information Attached Electronically.

Attachment 3

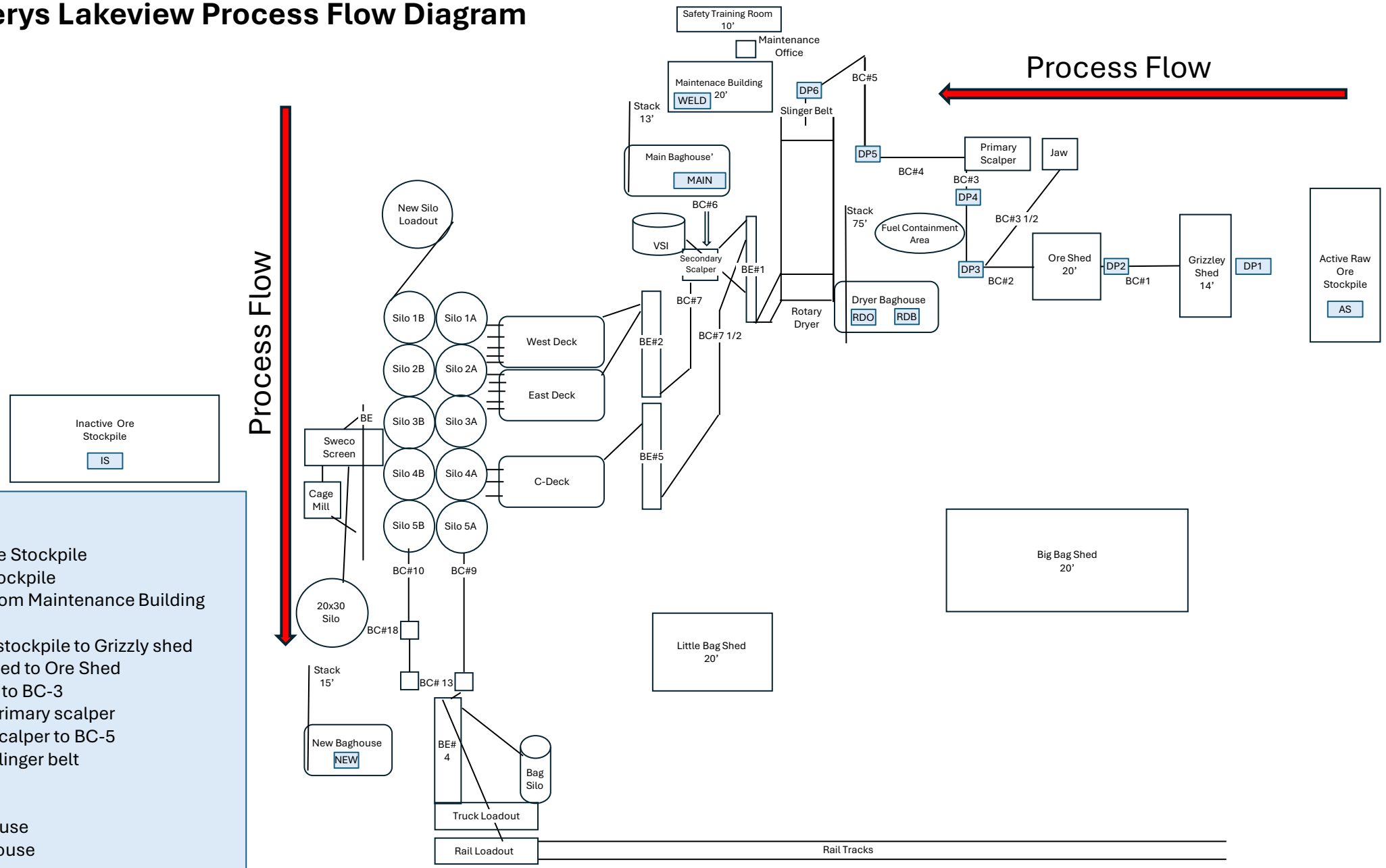
Imerys Facility Plot Plan

Imerys Lakeview Facility Plot Plan, Lakeview, OR



Attachment 4
Imerys Facility Flow Diagram

Imerys Lakeview Process Flow Diagram



LEGEND TEUs

Volume Sources

AS– Active Raw Ore Stockpile
IS– Inactive Ore Stockpile
WELD – Welding from Maintenance Building

Drop Points

- DP1 – Raw Ore stockpile to Grizzly shed
- DP2 – Grizzly shed to Ore Shed
- DP3 – Ore Shed to BC-3
- DP4 – BC-3 to primary scalper
- DP5 – Primary scalper to BC-5
- DP6 – BC-5 to Slinger belt

Point Sources

NEW – New Baghouse
MAIN – Main Baghouse
RDB – Dryer Baghouse
RDO – Rotary Dryer