Memo

Date:	Friday, May 07, 2021
Project:	Port of Victoria
To:	Mr. Sean Stibich
From:	M. Kirk Dunbar Greg Raetz
Subject:	Zinc Resources, LLC – Review of Draft Air Permit Application and Public Comments

Zinc Resources, LLC (ZRLLC) proposed to construct an electric arc furnace (EAF) dust recycling facility in the City of Whitsett in Live Oak County, Texas. An air quality new source review (NSR) permit application was submitted to the Texas Commission on Environmental Air Quality (TCEQ) for the proposed project on December 14, 2020. Following TCEQ procedures the submitted permit application (Permit No. 163540, TCEQ Project No. 322923) was placed on public notice but no draft permit or other documentation was issued by TCEQ. As a result of concerns raised during public forums ZRLLC requested that the TCEQ void the submitted application. TCEQ voided the application on March 18, 2021. ZRLLC seeks to construct the facility at the Port of Victoria (Port) and submitted an updated NSR permit application for the new location to the TCEQ on March 17, 2021.

The Port requested HDR to review documentation pertaining to ZRLLC's air permit applications for both locations. In support of this effort HDR reviewed the following documents:

- Public comments to the permit application submitted for the Whitsett location.
- Permit application for the Port location.
- Community outreach information for the Steel Dust Recycling, LLC facility currently operating in Millport, Alabama
- Available permit documents for the Steel Dynamics facility in Stinton, Texas that will provide EAF dust to ZRLLC.

Review of Public Comments for the Whitsett Location

HDR reviewed the public comments for the Whitsett location that were compiled in the TCEQ Commissioners Integrated Database. Over seventy comments were submitted by general members of the public. Several additional comments that were presented in letter format were not available for review.

The majority of the comments can be grouped into the categories of general opposition and non-specific concern about air pollutants and their impacts. Comments in these categories presented no substantive concerns other than to express general opposition to the proposed facility. The general concerns regarding air pollutant impacts would have been addressed by the TCEQ's air quality permitting process (including dispersion modeling) which requires compliance with applicable regulations that have been promulgated to protect public health and welfare with respect to air emissions.

Several comments raised concerns with regard to the proximity of the facility to nearby residential housing. State rules provide for a review of plant classification and distance limitations. Again, such concerns would have been addressed by the air quality permitting process to maintain compliance with existing regulatory requirements.

Finally, a few comments addressed the practical enforceability of operating conditions and raised questions regarding the potential emission calculation process for Kiln sources. Compliance conditions for different source types have been well established and standardized in current air permitting practices. During the permit review process all such conditions, as well as potential emission calculations would have been reviewed and approved as part of TCEQ's permitting process. No non-standard or unique proposed limits or compliance methods were identified in the permit application.

Review of Draft Permit Application Submitted by ZRLLC for the Port Location

Subsequent to HDR beginning our review, the TCEQ made publicly available the following documents for the ZRLLC facility proposed at the Port (designated Permit No. 164399):

- Draft Maximum Allowable Emission Rates (MAERT)
- Draft Special Conditions
- Air Quality Analysis Audit (dated April 9, 2021)
- Notice of Preliminary Decision and Public Notice Requirements (dated April 12, 2021)

The first three documents are included in their entirety as Attachments 1, 2 and 3, respectively. An excerpt of the pertinent portion of the fourth listed document is included as Attachment 4.

Issuance of these documents indicates that TCEQ considered the application met the following criteria that were in the scope of HDR's review of the submitted application:

- General and technical completeness.
- Application includes the required data elements.
- It is reasonable to conclude that the proposed facility will comply with the intent of the Texas Clean Air Act (TCAA), including the protection of the health and property of the public.
- The proposed facility will implement best management practices (BMPs) and Best Available Control Technology (BACT).
- The draft permit will protect the local community and environment.

Based on review of the draft application and draft TCEQ documents listed above, HDR agrees with TCEQ's issuance of the draft permit document. Potential data gaps that HDR identified in the submitted application are discussed in a later section of this memo.

Review of Steel Dust Recycling Facility in Millport, Alabama

EPA's Enforcement and Compliance History Online (ECHO, available at Enforcement and Compliance History Online | US EPA) was searched to identify any listed air quality related compliance issues at the facility. Two events, listed as informal enforcement activities, were listed for the past five (5) years. The Alabama Department of Environmental Management (ADEM) eFile system [available at eFile: Main (alabama.gov)] was accessed and copies of the notices of violation were reviewed.

- August 24, 2017: The notice alleged excess opacity emissions and requested information regarding actions taken to resolve the issue. The facility responded that opacity exceedances were recorded, but that maintenance was performed on the monitor (the lenses were cleaned) and the issues were resolved. The facility detailed the changes in procedures to be implemented in order to address this type of occurrence in the future.
- January 2, 2018: The notice indicated that during a facility inspection ADEM noted a lack of daily visible emissions observation records, being late in obtaining a Temporary Authorization to Operate (TAO) for a newly installed process, and requested information regarding whether or not excess emissions were observed while operating without the TAO. Although each of these items does constitute noncompliance, they fit into the category of "procedural" noncompliance. ADEM did not allege any violation of an emission limit or other action that would have adversely impacted human health or the environment.

It appears that the facility's responses resolved the issues and satisfied ADEM.

Review of Permitting Documents for the Steel Dynamics Facility in Stinton, Texas

Review of the permit application for the Steel Dynamics Facility disclosed an inconsistency in the air toxics evaluation in the facility's permit application, as well as in the ZRLLC permit application (further discussed below). The Steel Dynamics application did not include any toxic compounds for the collected EAF dust emission sources (i.e., storage silo vents), but included the following compounds as being emitted from the EAF baghouses (with no backup information for why these compounds were included or the basis of their concentrations):

- Argon (since this is a gas it would not still be in the dust when it gets to ZRLLC)
- Beryllium
- Cadmium
- Chromium
- Mercury
- Manganese
- Nickel
- Fluorine

It seems to be an omission in the Steel Dynamics evaluation that these compounds that are present in the EAF exhaust stream were not indicated as being present in the collected EAF dust. However, TCEQ issued an air quality permit to Steel Dynamics regardless of this inconsistency.

Recommendations

ZRLLC's permit application for the Port site includes cadmium, chlorine, manganese, and lead as the toxic compounds in the EAF dust. As with the Steel Dynamics application, no backup information was given to support why these four compounds were included or the basis for their concentration. Again, TCEQ has issued draft permit documents regardless of this lack of information.

HDR recommends that the Port request EAF dust composition information from ZRLLC and that they update the toxics evaluation to be sure all TCEQ standards are met. This could either be done as a public comment to the draft application (which would make ZRLLC respond formally to TCEQ) or in connection with Port approval for the facility to be built.

ATTACHMENT 1

Draft Maximum Allowable Emission Rates

Emission Sources - Maximum Allowable Emission Rates

Permit Number 164399

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates (6)	
			lbs/hour	TPY (4)
KILN-1	Waelz Kiln Stack	NO_X	13.83	60.58
		CO	22.71	99.47
		SO_2	1.70	7.44
		VOC	2.43	10.63
		PM	2.06	9.01
		PM_{10}	2.06	9.01
		$PM_{2.5}$	2.06	9.01
		Pb	0.07	0.29
BH-1	Building Baghouse Stack	PM	1.47	6.42
		PM_{10}	1.47	6.42
		$PM_{2.5}$	1.47	6.42
		Pb	0.02	0.09
BH-2	Building Baghouse Stack	PM	1.47	6.42
		PM_{10}	1.47	6.42
		$PM_{2.5}$	1.47	6.42
		Pb	0.02	0.09
BH-3	Building Baghouse Stack	PM	0.46	2.03
		PM_{10}	0.46	2.03
		$PM_{2.5}$	0.46	2.03
		Pb	0.01	0.03
BH-4	Building Baghouse Stack	PM	0.46	2.03
		PM_{10}	0.46	2.03
		$PM_{2.5}$	0.46	2.03
		Pb	0.01	0.03

Emission Sources - Maximum Allowable Emission Rates

BVF-1	Bin Vent Filter 1 Stack	PM	0.05	0.23
		PM_{10}	0.05	0.23
		$PM_{2.5}$	0.05	0.23
		Pb	< 0.01	0.01
BVF-2	Bin Vent Filter 2 Stack	PM	0.05	0.23
		PM_{10}	0.05	0.23
		$PM_{2.5}$	0.05	0.23
		Pb	< 0.01	0.01
EMGEN1	Emergency Generator 1	NO_X	9.27	0.46
		CO	5.79	0.29
		SO_2	0.01	< 0.01
		VOC	1.31	0.07
		PM	0.33	0.02
		PM_{10}	0.33	0.02
		$PM_{2.5}$	0.33	0.02
T1	Diesel Tank	VOC	0.38	0.02
WIP1	Kiln Drop to Conveyor (5)	PM	0.12	0.39
		PM_{10}	0.06	0.19
		$PM_{2.5}$	0.01	0.03
WIP2	Conveyor to Building (5)	PM	0.12	0.39
		PM_{10}	0.06	0.19
		$PM_{2.5}$	0.01	0.03
WIP3	WIP Building to Truck (5)	PM	0.12	0.39
		PM_{10}	0.06	0.19
		$PM_{2.5}$	0.01	0.03

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented

Emission Sources - Maximum Allowable Emission Rates

PM_{10}	-	total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$	-	particulate matter equal to or less than 2.5 microns in diameter
CO	-	carbon monoxide
Pb	-	lead

(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.
(6) Planned startup and shutdown emissions are included. Maintenance activities are not authorized by this permit.

Date: TBD

ATTACHMENT 2

Draft Special Condition

Special Conditions

Permit Number 164399

1. This permit authorizes only those sources of emissions listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," and those sources are limited to the emission rates and other conditions specified in the table. In addition, this permit authorizes all emissions from planned startup and shutdown activities associated with facilities or groups of facilities that are authorized by this permit.

2. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing volatile organic compounds (VOC) at a concentration of greater than 1 percent are not authorized by this permit unless authorized on the MAERT. Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than 1 weight percent are not consistent with good practice for minimizing emissions.

Fuel Specifications

3. The kiln is subject to the following requirements for fuel sulfur:

   A. The kiln may be fired with natural gas, No. 2 fuel oil, or propane.

   B. Natural gas and propane shall have a total sulfur content not to exceed 0.2 grains per 100 dscf on a rolling 12-month average.

   C. No. 2 fuel oil shall have a total sulfur content containing no more than 15 ppmw total sulfur.

   D. Compliance with the requirements of paragraph B and C of this Special Condition shall be verified through sampling of fuel gas at least semi-annually. For natural gas and commercial fuels, tariff sheets documenting the sulfur content of the fuel may be retained in lieu of performing sampling.

Federal Applicability

4. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources promulgated in Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60):

   A. Subpart A, General Provisions.

   B. Subpart IIII, Stationary Compression Ignition Internal Combustion Engines.

5. These facilities shall comply with all applicable requirements of EPA regulations on National Emission Standards for Hazardous Air Pollutants for Source Categories in 40 CFR Part 63:

   A. Subpart A, General Provisions.

   B. Subpart ZZZZ, Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

Opacity/Visible Emission Limitations

6. Opacity of particulate matter emissions from each baghouse/dust collector stack shall not exceed 5 percent, averaged over a six-minute period.

7. There shall be no visible fugitive emissions leaving the property from process buildings or fugitive sources exceeding a cumulative 30 seconds in duration in any six-minute period.

Operational Limitations, Work Practices, and Plant Design

8. The maximum plant raw materials input rate of zinc-bearing feed to the kiln shall not exceed 24.26 tons per hour and 212,517.60 tons per year.

9. All hooding, duct, and collection systems shall be effective in capturing emissions from the intended equipment and in preventing excess fugitive emissions. The hooding and duct systems shall be maintained free of holes, cracks, and other conditions that would substantially reduce the collection efficiency of the emission capture system.

10. All particulate material retrieved from any of the baghouses shall be handled in a manner that will prevent excess material from becoming airborne into the atmosphere.

Particulate Matter Control

11. Particulate matter outlet grain loading shall not exceed 0.003 grains per dry standard cubic foot (dscf) of air from any vent.

12. The sources associated with the filter vents covered by this permit shall not operate unless control devices and associated equipment are maintained in good working order and operating. A spare-parts filter inventory shall be maintained on site.

Bulk Material Transfer

13. The top and sides of all conveyor belts shall be covered. All conveyor belt transfer points shall be enclosed.

Storage Tank

14. Storage tank throughput and service shall be limited to the following:

Tank Identifier	Service	Fill rate (gallons/hour)	Rolling 12 Month Throughput (gallons)
EPN T1	Diesel	7,042	2,570,423

15. The storage tank is subject to the following requirements:

A. Except for labels, logos, etc. not to exceed 15 percent of the tank total surface area, uninsulated tank exterior surfaces exposed to the sun shall be white. Storage tanks must be equipped with permanent submerged fill pipes.

B. The permit holder shall maintain a record of tank throughput for the previous month and the past consecutive 12 month period for each tank.

Emergency Engines

16. The following requirements apply to the emergency generator (EPN EMGEN1):

A. Fuel for the engines shall be limited to ultra-low sulfur diesel (ULSD) containing no more than 15 ppmw total sulfur.

B. The engine shall be limited to 100 hours per year during non-emergency situations, as defined at 40 CFR § 63.6640(f).

C. The engine shall be equipped with a non-resettable hour meter.

Initial Determination of Compliance

17. The permit holder shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the Waelz Kiln (EPN KILN-1) to demonstrate compliance with the MAERT. The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the Texas Commission on Environmental Quality (TCEQ) Sampling Procedures Manual and the U.S. Environmental Protection Agency (EPA) Reference Methods.

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for Title 40 Code of Federal Regulation Part 60 (40 CFR Part 60) testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

A. The appropriate TCEQ Regional Office shall be notified not less than 45 days prior to sampling. The notice shall include:

(1) Proposed date for pretest meeting.

(2) Date sampling will occur.

(3) Name of firm conducting sampling.

(4) Type of sampling equipment to be used.

(5) Method or procedure to be used in sampling.

(6) Description of any proposed deviation from the sampling procedures specified in this permit or TCEQ/EPA sampling procedures.

(7) Procedure/parameters to be used to determine worst case emissions

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports. The TCEQ Regional Director must approve any deviation from specified sampling procedures.

B. Air contaminants emitted from the Waelz Kiln (EPN KILN-1) to be tested for include (but are not limited to) NO_X, CO, PM, and Pb.

C. Sampling shall occur within 60 days after achieving the maximum operating rate, but no later than 180 days after initial start-up of the facilities (or increase in production, as appropriate) and at such other times (identify the need for any periodic sampling here) as may be required by the TCEQ Executive Director. Requests for additional time to perform sampling shall be submitted to the appropriate regional office.

D. The facility being sampled shall operate at the maximum firing rate during stack emission testing. These conditions/parameters and any other primary operating parameters that affect the emission rate shall be monitored and recorded during the stack test. Any additional parameters shall be determined at the pretest meeting and shall be stated in the sampling report. Permit conditions and parameter limits may be waived during stack testing performed under this condition if the proposed condition/parameter range is identified in the test notice specified in paragraph A and accepted by the TCEQ Regional Office. Permit allowable emissions and emission control requirements are not waived and still apply during stack testing periods.

During subsequent operations, if the firing rate is greater than that recorded during the test period, stack sampling shall be performed at the new operating conditions within 120 days. This sampling may be waived by the TCEQ Air Section Manager for the region.

E. Copies of the final sampling report shall be forwarded to the offices below within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions entitled "Chapter 14, Contents of Sampling Reports" of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the appropriate TCEQ Regional Office.
One copy to each local air pollution control program.

F. Sampling ports and platform(s) shall be incorporated into the design of (source stack and EPN) according to the specifications set forth in the attachment entitled "Chapter 2, Guidelines for Stack Sampling Facilities" of the Texas Commission on Environmental Quality (TCEQ) Sampling Procedures Manual. Alternate sampling facility designs must be submitted for approval to the TCEQ Regional Director.

Demonstration of Continuous Compliance

18. The bagfilters shall comply with the following:

A. The baghouses (dust collectors) shall be operated and maintained in accordance with the manufacturer's recommendations to assure that the minimum control efficiency is met at all times when the controlled facilities are required to be operated.

B. The holder of this permit shall install, calibrate (if applicable), and maintain a differential pressure gauge to monitor pressure drop across the filter media of each of the baghouses (dust collectors). Each monitoring device that requires calibration shall be calibrated at least annually in accordance with the manufacturer's specifications and shall be accurate to within a range of ± 0.5 inch water gauge pressure (± 125 pascals) or a span of ± 3 percent. If a monitoring device requires to be zeroed, it shall be zeroed at least once a week.

C. The pressure drop reading across the filter media of each of the baghouses (dust collectors) shall be maintained within the operating range specified by the manufacturer. Filters shall be replaced whenever the pressure drop reading across the filter media is outside the manufacturer's specified operating range.

D. Pressure drop readings for the Waelz Kiln Baghouse Stack (EPN KILN-1) shall be recorded at least four times per hour that the system is required to be operated.

E. Pressure drop readings for the Building Baghouse (EPN BH-1), Bin Vent Filter 1 (EPN BVH-1) and Bin Vent Filter 2 (EPN BVF-2) shall be recorded at least once daily when the baghouses (dust collectors) are operational.

F. Maintenance on the ventilation system, including filter replacement, shall be performed only when the facility being controlled is not in operation.

19. The holder of this permit shall conduct a quarterly visible emissions determination to demonstrate compliance with the opacity limitations specified in this permit the following baghouse (dust collector) stacks. These visible emissions determination shall be performed: 1) during normal plant operations, 2) for a minimum of six minutes, 3) approximately perpendicular to plume direction, 4) with the sun behind the observer (to the extent practicable), and 5) at least two stack heights, but not more than five stack heights, from the emission point. If visible emissions are observed from the emission point, the owner or operator shall:

A. Take immediate action to eliminate visible emissions, record the corrective action within 24 hours, and comply with any applicable requirements in 30 Texas Administrative Code (TAC) § 101.201, Emissions Event Reporting and Record Keeping Requirements; or

B. Determine opacity using 40 CFR Part 60, Appendix A, Test Method 9. If the opacity limit is exceeded, take immediate action (as appropriate) to reduce opacity to within the permitted limit, record the corrective action within 24 hours, and comply with applicable requirements in 30 TAC § 101.201, Emissions Event Reporting and Record Keeping Requirements.

20. The holder of this permit shall conduct a quarterly visible emissions determination to demonstrate compliance with the limitation specified in this permit for visible fugitive emissions leaving the property from process buildings or fugitive sources. This visible emissions determination shall be performed: 1) during normal plant operations, 2) for a minimum of six minutes, 3) approximately perpendicular to plume direction, 4) with the sun behind the observer (to the extent practicable), 5) at least 15 feet, but not more than 0.25 mile, from the plume, and 6) in accordance with EPA 40 CFR Part 60, Appendix A, Test Method 22, except where stated otherwise in this condition. If visible emissions leaving the property exceed 30 cumulative seconds in any six-minute period, the owner or operator shall take immediate action (as appropriate) to eliminate the excessive visible emissions. The corrective action shall be documented within 24 business hours of completion.

Permit by Rule

21. The following sources and/or activities are authorized under a Permit by Rule (PBR) by Title 30 Texas Administrative Code Chapter 106 (30 TAC Chapter 106). These lists are not intended to be all inclusive and can be altered without modifications to this permit.

Authorization	Source or Activity
30 TAC § 106.263 (effective 11/01/01)	Routine Facility Maintenance

Recordkeeping Requirements

22. Records shall be maintained at this facility site and made available at the request of personnel from the TCEQ or any other air pollution control program having jurisdiction to demonstrate compliance with permit limitations. These records shall be totaled for each calendar month, retained for a rolling 24-month period, and include the following:

A. Hourly and annual raw material kiln feed rates;

B. Quarterly observations for visible emissions and/or opacity determinations from each baghouse/dust collector stack;

C. Quarterly observations for visible fugitive emissions leaving the property from process buildings or fugitive sources;

D. Daily baghouse pressure drop readings; and

E. All malfunctions, repairs, and maintenance of abatement or conveyance/mechanical handling systems, which includes bag replacement and the manufacturer's suggested cleaning and maintenance schedule.

Date: TBD

ATTACHMENT 3

Air Quality Analysis Audit

TCEQ Interoffice Memorandum

To: Cara Hill
Mechanical/Coatings Section

Thru: Chad Dumas, Team Leader
Air Dispersion Modeling Team (ADMT)

From: Ahmed Omar, P.E.
ADMT

Date: April 9, 2021

Subject: Air Quality Analysis Audit - Zinc Resources LLC (RN105630461)

1. Project Identification Information

Permit Application Number: 164399
NSR Project Number: 326728
ADMT Project Number: 7304
County: Victoria
Project Map: \\tceq4avmgisdata\GISWRK\APD\MODEL PROJECTS\7304\7304.pdf

Air Quality Analysis: Submitted by Trinity Consultants, Inc., March 2021, on behalf of Zinc Resources LLC. Additional information was provided April 2021.

2. Report Summary

The air quality analysis is acceptable for all review types and pollutants. The results are summarized below.

A. Minor Source NSR and Air Toxics Analysis

Table 1. Site-wide Modeling Results for State Property Line

Pollutant	Averaging Time	GLCmax (µg/m^3)	Standard (µg/m^3)
SO_2	1-hr	2	1021

Table 2. Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLCmax (µg/m^3)	De Minimis (µg/m^3)
SO_2	1-hr	1.5	7.8
SO_2	3-hr	1.2	25
PM_{10}	24-hr	43	5
$PM_{2.5}$	24-hr	16	1.2
$PM_{2.5}$	Annual	3.6	0.2

NO_2	1-hr	14	7.5
NO_2	Annual	0.5	1
CO	1-hr	863	2000
CO	8-hr	292	500

The 24-hr and annual $PM_{2.5}$ GLCmax are based on the highest five-year average of the maximum predicted concentrations determined for each receptor.

The GLCmax for all other pollutants and averaging times represent the maximum predicted concentrations over one year of meteorological data.

The justification for selecting the EPA's interim 1-hr NO_2 and 1-hr SO_2 De Minimis levels was based on the assumptions underlying EPA's development of the 1-hr NO_2 and 1-hr SO_2 De Minimis levels. As explained in EPA guidance memoranda[1,2], the EPA believes it is reasonable as an interim approach to use a De Minimis level that represents 4% of the 1-hr NO_2 and 1-hr SO_2 NAAQS.

The $PM_{2.5}$ De Minimis levels are the EPA recommended De Minimis levels. The use of the EPA recommended De Minimis levels is sufficient to conclude that a proposed source will not cause or contribute to a violation of a $PM_{2.5}$ NAAQS based on the analyses documented in EPA guidance and policy memorandums[3].

To evaluate secondary $PM_{2.5}$ impacts, the applicant provided an analysis based on a Tier 1 demonstration approach consistent with the EPA's Guideline on Air Quality Models (GAQM). Specifically, the applicant used a Tier 1 demonstration tool developed by the EPA referred to as Modeled Emission Rates for Precursors (MERPs). The basic idea behind the MERPs is to use technically credible air quality modeling to relate precursor emissions and peak secondary pollutants impacts from a source. Using data associated with the worst-case source, the applicant estimated 24-hr and annual secondary $PM_{2.5}$ concentrations of 0.053 µg/m^3 and 0.002 µg/m^3, respectively. Since the combined direct and secondary 24-hr and annual $PM_{2.5}$ impacts are above the De minimis levels, a full impacts analysis is required.

Table 3. Total Concentrations for Minor NSR NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLCmax (µg/m^3)	Background (µg/m^3)	Total Conc. = [Background + GLCmax] (µg/m^3)	Standard (µg/m^3)
PM_{10}	24-hr	43	79	122	150
$PM_{2.5}$	24-hr	11.5	22	33.5	35
$PM_{2.5}$	Annual	3.6	8	11.6	12

[1] www.epa.gov/sites/production/files/2015-07/documents/appwso2.pdf
[2] www.tceq.texas.gov/assets/public/permitting/air/memos/guidance_1hr_no2naaqs.pdf
[3] www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html

Pb	3-mo	0.08	0.04	0.12	0.15
NO_2	1-hr	14	66	80	188

The 24-hr $PM_{2.5}$ GLCmax is based on the highest five-year average of the 98th percentile, or high, eighth high (H8H), predicted concentrations determined for each receptor. The annual $PM_{2.5}$ GLCmax is the highest five-year average of the annual predicted concentrations determined for each receptor.

The Pb GLCmax is the maximum predicted monthly concentration associated with one year of meteorological data.

The GLCmax for NO_2 is the maximum predicted concentration over one year of meteorological data.

A background concentration for PM_{10} was obtained from the EPA AIRS monitor 483550034 located at 5707 Up River Rd., Corpus Christi, Nueces County. The high, second high monitored concentration from 2017-2019 was used for the 24-hr value. The applicant did not consider monitoring data from most recent year (2020). The ADMT reviewed monitoring data from 2018-2020 and determined that the overall modeling result will not be affected. The use of this monitor is reasonable based on a comparison of county-wide emissions, population, and a quantitative review of emission sources in the surrounding area of the monitor site relative to the project site.

Background concentrations for $PM_{2.5}$ were obtained from the EPA AIRS monitor 483550034 located at 5707 Up River Rd., Corpus Christi, Nueces County. The applicant calculated a three-year average (2017-2019) of the 98th percentile of the annual distribution of 24-hr average concentrations for the 24-hr value. The applicant used a three-year average (2017-2019) of the annual concentrations for the annual value. The applicant did not consider monitoring data from most recent year (2020). The ADMT reviewed monitoring data from 2018-2020 and determined that the overall modeling result will not be affected. The first and third quarters of 2018 monitoring data were incomplete as well as the fourth quarter of 2020 monitoring data. The third quarter of 2018 and the fourth quarter of 2020 are less than 50% complete and the ADMT substituted each quarter with the corresponding data from EPA AIRS monitor 483550032 located at 3810 Huisache St., Corpus Christi, Nueces County and verified the overall modeling result will not be affected. Using data from the nearby monitor is reasonable since the distance between the two monitors is approximately three kilometers. For the first quarter, the ADMT performed the substitution test as outlined in Appendix N to 40 CFR Part 50 and verified the validity of using 2018 monitoring data. The use of this monitor is reasonable based on a comparison of county-wide emissions, population, and a quantitative review of emission sources in the surrounding area of the monitor site relative to the project site. The applicant also considered background concentrations from the EPA AIRS monitor 482011039 located at 4514 1/2 Durant St., Deer Park, Harris County; however, the applicant did not provide sufficient justification to determine the representativeness of the monitor.

A background concentration for NO_2 was obtained from the EPA AIRS monitor 482450628 located at Port Arthur, Jefferson County. The three-year average (2017-2019) of the 98th

percentile of the annual distribution of the maximum daily 1-hr concentrations was used for the 1-hr value. The applicant did not consider monitoring data from most recent year (2020). The ADMT reviewed monitoring data from 2018-2020 and determined that the overall modeling result will not be affected. The 2018 background concentration used by the applicant is higher than the concentration calculated by ADMT, which is conservative. The use of this monitor is reasonable based on a comparison of county-wide emissions, population, and a quantitative review of emissions sources in the surrounding area of the monitor site relative to the project site.

A background concentration for Pb was obtained from the EPA AIRS monitor 482570020 located at 2988 Temtex Blvd., Terrell, Kaufman County. The background concentration reported by the applicant cannot be verified; however, this monitor is conservative since it is located near a source with high lead emissions. The ADMT reviewed the highest 3-month rolling average from 2017 through 2020 from all other EPA Pb monitors in Texas and verified that the overall modeling result will not be affected.

As stated above, to evaluate secondary $PM_{2.5}$ impacts, the applicant provided an analysis based on a Tier 1 demonstration approach consistent with the EPA's GAQM. Specifically, the applicant used a Tier 1 demonstration tool developed by the EPA referred to as MERPs. Using data associated with the worst-case source, the applicant estimated 24-hr and annual secondary $PM_{2.5}$ concentrations of 0.053 µg/m^3 and 0.002 µg/m^3, respectively. When these estimates are added to the GLCmax listed in Table 3 above, the results are less than the NAAQS.

Table 4. Generic Modeling Results

Source ID	1-hr GLCmax (µg/m^3 per lb/hr)	Annual GLCmax (µg/m^3 per lb/hr)
BH-1	31.61	0.64
KILN-1	0.87	0.04
BVF-1	128.14	3.34
BVF-2	148.87	5.31
EMGEN1	149.03	3.57
BH-2	31.47	0.66
BH-3	17.47	1.24
BH-4	20.87	1.47
T1A	687.59	14.61
T1B	733.51	16.19
T1C	645.09	13.26

Table 5. Minor NSR Site-wide Modeling Results for Health Effects

Pollutant	CAS#	Averaging Time	GLCmax ($\mu g/m^3$)	GLCmax Location	ESL ($\mu g/m^3$)
manganese	7439-96-5	1-hr	2.8	Eastern Property Line	2.7
manganese	7439-96-5	Annual	0.1	-	0.25
fuel oil No. 2	68476-30-2	1-hr	382	-	1000
cadmium	7440-43-9	1-hr	0.1	-	5.4
cadmium	7440-43-9	Annual	0.002	-	0.0033
chlorine	7782-50-5	1-hr	3	-	43
chlorine	7782-50-5	Annual	0.1	-	2.6

Table 6. Minor NSR Hours of Exceedance for Health Effects

Pollutant	Averaging Time	1 X ESL GLCni
manganese	1-hr	1

For 1-hr manganese, the GLCmax and the GLCni are the same and the location is listed in Table 5 above. For all other pollutants and averaging times, generic modeling was used (see section 3 below for more details)

3. Model Used and Modeling Techniques

AERMOD (Version 19191) was used in a refined screening mode.

For the health effects analyses, except 1-hr manganese, a unitized emission rate of 1 lb/hr was used to predict a generic short-term and long-term impact for each source. The generic impact was multiplied by the proposed pollutant specific emission rates to calculate a maximum predicted concentration for each source. The maximum predicted concentration for each source was summed to get a total predicted concentration for each pollutant. For 1-hr fuel oil, the concentration calculated by the applicant is lower than the concentration calculated by ADMT; however, this discrepancy will not affect the overall modeling results. The generic results are listed in Table 4 above.

The applicant conducted the 1-hr and annual NO_2 NAAQS analyses using the ARM2 model option following EPA guidance.

A. Land Use

Low roughness and elevated terrain were used in the modeling analysis. These selections are consistent with the AERSURFACE analysis, topographic map, DEMs, and aerial photography. The selection of low roughness is reasonable.

B. Meteorological Data

Surface Station and ID: Victoria, TX (Station #: 12912)
Upper Air Station and ID: Corpus Christi, TX (Station #: 12924)
Meteorological Dataset: 2014-2018 for $PM_{2.5}$ analyses: 2016 for all other analyses
Profile Base Elevation: 35.7 meters

C. Receptor Grid

The grid modeled was sufficient in density and spatial coverage to capture representative maximum ground-level concentrations and exceedances.

D. Building Wake Effects (Downwash)

Input data to Building Profile Input Program Prime (Version 04274) are consistent with the plot plan and modeling report.

4. Modeling Emissions Inventory

The modeled emission point and volume source parameters and rates were consistent with the modeling report. The source characterizations used to represent the sources were appropriate.

For the 1-hr SO_2 and 1-hr NO_2 de Minimis and NAAQS analyses, emissions from the emergency engine (EPN EMGEN1) were modeled with an annual average emission rate, consistent with EPA guidance for evaluating intermittent emissions. Emissions from the engine were represented to occur for no more than 100 hours per year.

For 24-hr $PM_{2.5}$ and PM_{10} analyses, emissions from the emergency engines (EPN EMGEN1) were modeled with 24-hr average emission rates representing one hour of operation per day.

Except as noted above, maximum allowable hourly emission rates were used for the short-term averaging time analyses, and annual average emission rates were used for the annual averaging time analyses.

ATTACHMENT 4

Notice of Preliminary Decision and Public Notice Requirements - Excerpt

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 12, 2021

MR RON CRITTENDON
CEO
ZINC RESOURCES LLC
109 N POST OAK LN STE 415
HOUSTON TX 77024-7847

Re: Permit Application
Permit Number: 164399
Zinc Resources LLC
EAF Dust Recycling Facility
Victoria, Victoria County
Regulated Entity Number: RN105630461
Customer Reference Number: CN605840602

Dear Mr. Crittendon:

The Texas Commission on Environmental Quality (TCEQ) has made a preliminary decision on the above-referenced application. In accordance with Title 30 Texas Administrative Code § 39.419(b), you are now required to publish Notice of Application and Preliminary Decision. You must provide a copy of this preliminary decision letter with the draft permit at the public place referenced in the public notice.

If you have any questions, please call Ms. Cara Hill at (512) 239-5123, or write to the TCEQ, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

Bonnie Evridge

Bonnie Evridge, Manager
Mechanical/Coatings New Source Review Permits Section
Air Permits Division

Enclosure

cc: Air Section Manager, Region 14 - Corpus Christi

Project Number: 326728

April 12, 2021

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CEO
ZINC RESOURCES LLC
109 N POST OAK LN STE 415
HOUSTON TX 77024-7847

Re: Permit Application
Permit Number: 164399
Zinc Resources LLC
EAF Dust Recycling Facility
Victoria, Victoria County
Regulated Entity Number: RN105630461
Customer Reference Number: CN605840602

Dear Mr. Crittendon:

The Texas Commission on Environmental Quality (TCEQ) has completed the technical review of your application and has prepared a preliminary decision and draft permit.

You are now required to publish notice of your proposed activity. To help you meet the regulatory requirements associated with this notice, we have included the following items:

- Notices for Newspaper Publication (Examples A and B)
- Public Notice Checklist
- Instructions for Public Notice
- Affidavit of Publication for Air Permitting (Form TCEQ-20533) and Alternative Language Affidavit of Publication for Air Permitting (Form TCEQ-20534)
- Web link to download Public Notice Verification Form (refer to Public Notice Instructions)
- Notification List
- Draft Permit

Please note that it is **very important** that you follow **all** directions in the enclosed instructions. If you do not, you may be required to republish the notice. A common mistake is the unauthorized changing of notice wording or font. If you have any questions, please contact us before you proceed with publication.

A "Public Notice Checklist" is enclosed which notes the time limitations for each step of the public notice process. **The processing of your application may be delayed if these time limitations are not met (i.e.; submitting proof of publication of the notice within 10 business days after publication, affidavits of publication within 30 calendar days after the date of publication, and public notice verification form within 10 business days after the end of the designated comment period).** This checklist should be used as a tool in conjunction with the enclosed, detailed instructions.

If you do not comply with **all** requirements described in the instructions, further processing of your application may be suspended or the agency may take other actions.

If you have any questions regarding publication requirements, please contact the Office of the Chief Clerk at (512) 239-3300. If you have any other questions, please contact Ms. Cara Hill at (512) 239-5123.

Sincerely,

Laurie Gharis

Laurie Gharis
Chief Clerk
Office of the Chief Clerk
Texas Commission on Environmental Quality

Enclosure

cc: Air Section Manager, Region 14 - Corpus Christi
Air Permits Section Chief, New Source Review Section (6MM-AP), U.S. Environmental Protection Agency, Region 6, Dallas

Project Number: 326728

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

EXAMPLE A

NOTICE OF APPLICATION AND PRELIMINARY DECISION
FOR AN AIR QUALITY PERMIT

PROPOSED PERMIT NUMBER: 164399

APPLICATION AND PRELIMINARY DECISION. Zinc Resources LLC, 109 North Post Oak Lane, Suite 415, Houston, Texas 77024-7847, has applied to the Texas Commission on Environmental Quality (TCEQ) for issuance of Proposed Air Quality Permit Number 164399, which would authorize construction of an Electric Arc Furnace (EAF) Dust Recycling Facility located at 1750 Farm-to-Market 1432, Victoria, Victoria County, Texas 77905. This application was processed in an expedited manner, as allowed by the commission's rules in 30 Texas Administrative Code, Chapter 101, Subchapter J. This application was submitted to the TCEQ on March 17, 2021. The proposed facility will emit the following contaminants: carbon monoxide, hazardous air pollutants, organic compounds, nitrogen oxides, particulate matter including particulate matter with diameters of 10 microns or less and 2.5 microns or less, lead and sulfur dioxide.

The executive director has completed the technical review of the application and prepared a draft permit which, if approved, would establish the conditions under which the facility must operate. The executive director has made a preliminary decision to issue the permit because it meets all rules and regulations. The permit application, executive director's preliminary decision, and draft permit will be available for viewing and copying at the TCEQ central office, the TCEQ Corpus Christi regional office, and at and the Victoria Public Library, 302 North Main Street, Victoria, Victoria County, Texas, beginning the first day of publication of this notice. The facility's compliance file, if any exists, is available for public review at the TCEQ Corpus Christi Regional Office, NRC Building, Suite 1200, 6300 Ocean Drive, Unit 5839, Corpus Christi, Texas.

PUBLIC COMMENT/PUBLIC MEETING. You may submit public comments or request a public meeting about this application. The purpose of a public meeting is to provide the opportunity to submit comment or to ask questions about the application. The TCEQ will hold a public meeting if the executive director determines that there is a significant degree of public interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing. **You may submit additional written public comments within 30 days of the date of newspaper publication of this notice in the manner set forth in the AGENCY CONTACTS AND INFORMATION paragraph below.**

RESPONSE TO COMMENTS AND EXECUTIVE DIRECTOR ACTION. After the deadline for public comments, the executive director will consider the comments and prepare a response to all relevant and material or significant public comments. Because no timely hearing requests have been received, after preparing the response to comments, the executive director may then issue final approval of the application. **The response to comments, along with the executive director's decision on the application will be mailed to everyone who submitted public comments or is on a mailing list for this application, and will be posted electronically to the Commissioners' Integrated Database (CID).**

INFORMATION AVAILABLE ONLINE. When they become available, the executive director's response to comments and the final decision on this application will be accessible through the Commission's Web site at www.tceq.texas.gov/goto/cid. Once you have access to the CID using the above link, enter the permit number for this application which is provided at the top of this notice. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For exact location, refer to application. http://www.tceq.texas.gov/assets/public/hb610/index.html?lat=28.693333&lng=-96.963055&zoom=13&type=r.

MAILING LIST. You may ask to be placed on a mailing list to obtain additional information on this application by sending a request to the Office of the Chief Clerk at the address below.

AGENCY CONTACTS AND INFORMATION. Public comments and requests must be submitted either electronically at www14.tceq.texas.gov/epic/eComment/, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address and physical address will become part of the agency's public record. For more information about this permit application or the permitting process, please call the Public Education Program toll free at 1-800-687-4040. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Zinc Resources LLC at the address stated above or by calling Mr. Tom Knepper, Executive Vice President & Project Manager at (724) 650-3618.

Notice Issuance Date: April 12, 2021