DRAFT Environmental Assessment – Renewable Fuels and Biomass Energy Facility Conversion Project

Montana Renewables, LLC

Department of Energy Loan Programs Office – Title XVII – Energy Implementation Reinvestment ("EIR") Program

DOE/EA-2275

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Acronyms and Abbreviations

µg/m^3	micrograms per cubic meter
APE	area of potential effects
ASTM	American Society for Testing and Materials
BACT	best available control technology
BBER	Bureau of Business and Economic Research
BETO	Bioenergy Technologies Office
BMPs	best management practices
CFR	Code of Federal Regulations
CH_4	methane
City	City of Great Falls
CMR	Calumet Montana Refining
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
dBA	A-weighted decibels
DOE	U.S. Department of Energy
EA	environmental assessment
EAP	Emergency Action Plan
EIR	Energy Infrastructure Reinvestment
EJ	environmental justice
EPA	U.S. Environmental Protection Agency
EPAct	Energy Policy Act of 2005
EPCRA	Emergency Planning and Community Right to Know Act
FONSI	Finding of No Significant Impact
GHGs	greenhouse gases
HAPs	hazardous air pollutants
HFCs	hydrofluorocarbons
LPG	liquid petroleum gas
LPO	Loan Programs Office
MAQP	Montana Air Quality Permit
MDEQ	Montana Department of Environmental Quality
mgd	million gallons per day
MRL or Applicant	Montana Renewables, LLC
MW	megawatt
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NATA	National Air Toxics Assessment
NCore	National Core Monitoring Site
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NRHP	National Register of Historic Places
NSR	New Source Review
O_3	ozone
OSHA	Occupational Safety and Health Administration

Pb	lead
PFCs	perfluorocarbons
PM	particulate matter
PM_{10}	PM less than 10 microns in diameter
$PM_{2.5}$	PM less than 2.5 microns in diameter
Project	Renewable Fuels and Biomass Energy Facility Conversion Project
PSD	prevention of significant deterioration
PTE	potential to emit
PTU	pretreatment unit
RD	renewable diesel
RDU	renewable diesel unit
SAF	sustainable aviation fuel
SF_6	sulfur hexafluoride
SHPO	State Historic Preservation Office
SIC	Standard Industrial Classification
SO_2	sulfur dioxide
SPCC	Spill Prevention Control and Countermeasure
SPK	synthetic paraffinic kerosene
tpy	tons per year
U.S.C.	United States Code
VOCs	volatile organic compounds
WMP	Waste Management Plan
WWTP	wastewater treatment plant

1. PURPOSE AND NEED

1.1 Introduction

Montana Renewables, LLC (MRL or Applicant), is a manufacturer of renewable diesel (RD) and sustainable aviation fuel (SAF). The company's objective is to meet the growing demand for RD and SAF by converting a portion of an existing refinery operated by Calumet Montana Refining (CMR) in the city of Great Falls, Montana, into a renewable fuels and biomass energy facility (renewables Facility or the Project). The renewables Facility will be capable of converting 100 percent renewable feedstocks (such as canola oil, distillers corn oil, used cooking oil, and beef tallow) into RD, SAF, hydrogen, renewable off-gases (such as renewable natural gas), and renewable naphtha.

MRL has applied for a loan guarantee pursuant to the U.S. Department of Energy's (DOE's) Title XVII Clean Energy Financing Program, as authorized by the Energy Policy Act of 2005 (EPAct), as amended. Under Title XVII, the Secretary of Energy is authorized to provide loan guarantees for projects that support clean energy deployment and energy infrastructure reinvestment in the United States.

The Title XVII Program is administered by DOE's Loan Programs Office (LPO), which originates, underwrites, and services loans and loan guarantees to eligible applicants for projects that accelerate the commercial deployment of innovative energy technology. LPO has reviewed MRL's application and determined that it is eligible for a potential loan guarantee (10 Code of Federal Regulations [CFR] Parts 609.3 and 609.5).

The decision as to whether to provide a loan guarantee (i.e., federal financial assistance) constitutes a major federal action that requires DOE to conduct an environmental review under the National Environmental Policy Act (NEPA). LPO has prepared this Environmental Assessment (EA) in accordance with NEPA (42 United States Code [U.S.C.] 4321 et seq.), the Council on Environmental Quality NEPA implementing regulations (40 CFR Parts 1500–1508), and the DOE NEPA implementing regulations (10 CFR Part 1021). LPO is using the NEPA process to inform its decision as to whether to issue a loan guarantee to the Applicant to support the Project.

1.2 Purpose and Need for Agency Action

The purpose and need for DOE's proposed action, the issuance of a federal loan guarantee to MRL to support the Renewable Fuels and Biomass Energy Facility Conversion Project (Project), are tied to implementing DOE's authority under Title XVII of the EPAct, which was reauthorized, amended, and revised by the Inflation Reduction Act of 2022 to create the Energy Infrastructure Reinvestment (EIR) Program (Section 1706). The purpose of the EIR Program is to finance projects and facilities in the U.S. that retool, repower, repurpose, or replace energy infrastructure that has ceased operation or enable operation of energy infrastructure to avoid, reduce, utilize, or sequester air pollutants or anthropogenic emissions of greenhouse gases (GHGs) (42 U.S.C. 16517[a][2]).

1.3 Background

Phase 1 of the Project was completed with the use of private financing; therefore, Phase 1 was not subject to a federal loan guarantee. For Phase 2, MRL has applied to LPO's EIR Program for financial support. This will allow MRL to complete the Project, which includes purchasing renewable diesel and SAF refinery equipment, some of which was commissioned during Phase 1 of the Project and is currently leased and operated by MRL; constructing new infrastructure; and retrofitting existing equipment within the boundaries of the existing CMR, which is on previously disturbed land. LPO has reviewed the application and determined that it meets the goals of the EPAct. The Applicant has accepted and entered into LPO's due diligence process.

The EIR Program is central to LPO's mission to serve as a "bridge to bankability" for clean energy projects, which are critical to decarbonizing the energy sector. With the EIR Program, LPO can support projects that reinvest in energy infrastructure throughout the United States. This includes upgrading or uprating energy infrastructure so it can restart or operate more efficiently, at higher output, or with lower emissions; replacing retired energy infrastructure with clean energy infrastructure; and building new facilities for clean energy purposes that use legacy energy infrastructure.

1.4 Scope of Environmental Assessment

LPO is preparing this EA to evaluate DOE funding for Phase 2 of the Project—specifically, for the purchase of renewable diesel and SAF refinery equipment, some of which was installed and commissioned during Phase 1 and currently leased and operated by MRL. DOE funding would also be used to construct new infrastructure and retrofit existing equipment within the boundaries of the existing CMR refinery, which is on previously disturbed land. MRL has already completed Phase 1 of the Project with the use of private funds. This entailed the acquisition, conversion, construction, and modification of equipment and infrastructure within preexisting refinery boundaries. If no significant impacts are identified during preparation of this EA, DOE will issue a Finding of No Significant Impact (FONSI). If potentially significant impacts are identified, LPO will prepare an Environmental Impact Statement.

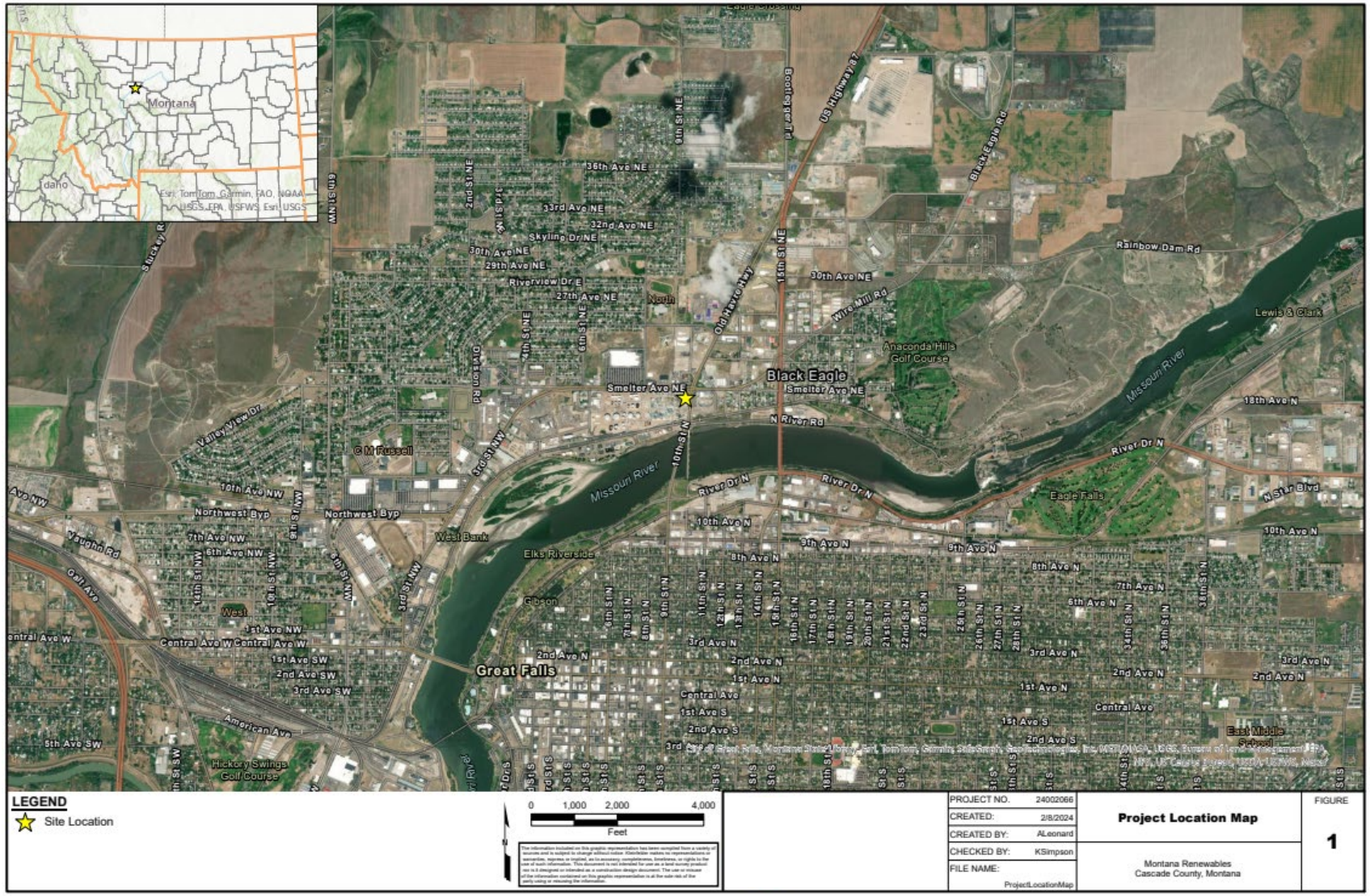
Section 1.4.1 of this EA provides an overview of the Project and describes the site development and construction activities that have been completed and therefore are not subject to federal financial support. Section 1.4.2 establishes the scope of the environmental review, given LPO's Proposed Action (a federal loan guarantee for Phase 2), existing site conditions, and permit status. As presented in Section 1.4.2, natural, physical, and socioeconomic resources that may be subject to potentially significant environmental effects are identified, as are resources that would not be subject to potentially significant environmental issues, thereby narrowing the scope of the environmental review to environmental issues deserving of study.

1.4.1 Project Overview and Development Status

MRL is converting a portion of an existing refinery at 1900 10th Street NE in Great Falls, Montana (see Figure 1-1). Between August 2022 and April 2023, MRL successfully completed Phase 1 of the renewables Facility in accordance with applicable permits and approvals (see **Appendix A**). MRL is a legally separate entity from the adjacent CMR and operates within individual Standard Industrial Classification (SIC) system codes. For simplicity, the conventional CMR refinery assets and MRL renewables Facility assets are collectively referred to herein as "the Plant." Phase 1 included the activities in the bulleted list below; this represents the baseline conditions for the Project:

- Acquisition of existing CMR refinery assets for conversion to renewable fuels production, including a hydrocracker with the capacity for approximately 24,000 barrels per day (BPD), hydrogen plant with the capacity for 15 million standard cubic feet per day (MMSCFD), sour water stripper, tanks, rails, and other facilities with the purpose of processing renewable feedstock into high-value RD and SAF
- Conversion of an existing hydrocracker to an approximately 15,000 BPD renewable fuels unit (RFU)
- Construction of a renewable hydrogen plant to convert renewable propane and other RFU off-gases into renewable hydrogen and achieve sufficient production alongside the existing hydrogen plant for the RFU
- Installation of a feedstock pretreatment unit (PTU) to clean the feedstock and protect the RFU catalyst system
- Modification of, and upgrades to, tanks, rails, and utilities in support of the RFU, including the installation of approximately eight new tanks for the storage/sale of SAF
- Initial production of SAF; MRL is actively producing approximately 12,000 BPD of RD and SAF

Figure 1-1. Project Location Map



The Phase 1 activities associated with construction, site development, and equipment installation that have been completed are not subject to the federal financial support request under review by LPO. However, the purchase, as well as operation, of some of the leased equipment that was installed and commissioned during Phase 1, along with other eligible costs associated with support of Phase 1, is within the scope of the federal financial support request and this EA. Under Phase 2 of the Project, which is the focus of this review, MRL will expand its capacity for renewable fuel production through various elements that will directly increase capacity, support capacity, provide product flexibility, and/or reduce the carbon footprint of the Plant. MRL will also incorporate innovative technological solutions for hydrogen production and increase processing capacity by more than 50 percent. This includes the ability to produce approximately 330 million gallons of RD and SAF per year.

1.4.2 Resources Considered

This EA evaluates LPO's Proposed Action (i.e., a loan guarantee for Phase 2 of the Project) and its potential impacts on multiple resources. The scope of the Proposed Action to be analyzed in this EA is limited to Project activities subject to LPO financial assistance. Activities included for LPO financing involve SAF blending and product storage, renewable hydrogen plant retrofit, gas compression controls (for the renewable fuels unit), debottleneck pretreatment unit, water disposal/recycling, renewable electricity/steam (cogeneration unit), Max SAF, expansion of railcar loading capability, and SAF truck loading and employee parking. These Project components are described in more detail in Chapter 2.

To identify potentially significant issues that warrant detailed review in this EA, LPO considered:

- The scope of the Proposed Action
- The location of the new renewables Facility, which is within the existing Calumet facility (in operation for approximately 100 years) and designated as a Heavy Industrial zone by the City of Great Falls (City)
- The site conditions at the onset of the federal action
- The proposed workforce once the Plant is fully operational
- The permits that have been issued to CMR and MRL by regulatory authorities for the Plant, including:
  - Title V Operating Permit for CMR
  - CMR Montana Air Quality Permit (MAQP) Construction Permit
  - Calumet Industrial Wastewater Discharge Permit
  - Multi-Sector General Industrial Stormwater Permit (covering the entire Plant site)

Any necessary permits that are not currently held by MRL will be obtained from the appropriate federal, state, or local regulating authority prior to the commencement of construction or prior to or subsequent to commencement of operations, as applicable (Appendix B, Permits and Approvals). These permit applications were at various stages of development, submission, and review at the time of writing, including:

- Phase 1 Title V operating permit (permit application has been submitted; permit issuance pending)
- Phase 2 application for permit to construct, including prevention of significant deterioration (PSD) permit, if applicable (permit application to be submitted subsequent to completion of process engineering design)
- Modified Title V operating permit (permit application to be submitted within 6 months of commencement of operation of Phase 2)
- Wastewater pretreatment permit, applicable to MRL Phases 1 and 2

- Renewable PTU wastewater pretreatment permit, applicable to MRL Phase 2
- Multisector general industrial stormwater permit, applicable to the entire Plant. CMR is the permit holder of the stormwater permit. CMR provides stormwater management services for the entire Plant, including MRL.

Based on a review of the Project scope, existing site conditions, and permit status, the resource areas assessed in this EA include:

- Water resources, including groundwater, and surface water
- Air quality
- Noise
- Transportation
- Aesthetic and visual resources
- Socioeconomics and environmental justice
- Health and safety
- Waste management
- Cultural resources

These resource areas were identified as potentially being affected by the Project, and each was assessed to determine the nature, extent, and significance of those impacts (see Chapter 3). The assessment combined desktop research and analysis of existing available information with select field studies, including site assessments related to the presence/absence of wetlands, water bodies, biological resources (species and habitat), and cultural resources.

Impacts on the following resources are not anticipated to be significant; therefore, they are not included in the scope of this EA. A brief rationale is provided for each resource in Table 1-1.

Table 1-1. Resources Dismissed from Detailed Analysis

Resource	Rationale for Dismissal
Land Use and Recreation	The Project will occur entirely within the footprint of an existing refinery, which is more than 100 years old, where there are no opportunities for recreation. The land use will stay the same under the Proposed Action; the land is zoned for Heavy Industrial uses and cannot be accessed by the general public.
Biological Resources	The Project will occur entirely within the footprint of an existing refinery where there are no biological resources (no trees or vegetation and no habitat for wildlife).
Wetlands	The Project will occur entirely within the footprint of an existing refinery. Although there are features mapped by the National Wetlands Inventory's online wetlands mapper tool within the refinery footprint, these features do not hold relatively permanent waters, do not have hydric soils, and do not have hydrophytic vegetation and therefore, are not jurisdictional wetlands.
Floodplains	The site is entirely outside the 500-year floodplain.
Geology, Soils, and Prime Farmland	The Project will occur entirely within the footprint of an existing refinery. The ground surface consists of bare ground (imported fill), gravel, asphalt, and concrete. There are no prime farmlands or geologic features present.

DOE LPO representatives visited the site on November 14 and 15, 2023, and April 4, 2024, and performed a detailed walk-through of the site, including areas planned for construction, other site elements, and utilities. DOE LPO representatives confirmed the potential impacts discussed in this EA during the site visit.

2. DESCRIPTION OF THE PROPOSED ACTION

2.1 Overall Project Description

The Project is co-located with an existing conventional petroleum refinery owned and operated by CMR at 1900 109th Street NE in Great Falls, Montana. The Project, which entails two phases, involves converting part of the existing refinery into a renewable fuels/biomass energy facility at the same address. As described in Chapter 1, Phase 1 is complete and not included in the proposed federal funding of the Project.

This renewables Facility will process 100 percent renewable feedstocks (e.g., canola oil, distillers corn oil, used cooking oil, soybean oil, mustard seed oil, camelina oil, beef tallow, and similar feeds) into RD and SAF, renewable liquid petroleum gas (LPG), renewable naphtha, and other light-end gases, which are feedstock for renewable hydrogen production. All Project activities will be within the boundaries of the existing CMR refinery on previously disturbed and developed acreage. For simplicity, the combined conventional CMR refinery assets and the MRL renewable fuels assets and operations are referred to herein as the Plant. The Plant encompasses approximately 60 acres on land that has been zoned for Heavy Industrial uses. The Plant is bordered by a mix of commercial, highway commercial, and residential areas to the west, north, and east. The Great Falls Wastewater Treatment Plant (WWTP) is directly south of the Plant, with the Missouri River directly south of the WWTP.

The following subsections describe the Phase 2 activities associated with the Proposed Action (i.e., the purchase of RD and SAF refinery equipment, construction of new infrastructure, and retrofit of existing equipment within the boundaries of the existing refinery on previously disturbed land).

2.2 Proposed Action – Facility Retrofits and Expansions

Under Phase 2 of the Project, MRL will expand its capacity for renewable fuels production through various elements that either directly increase capacity, support capacity, provide product flexibility, and/or reduce the carbon footprint of the Plant. MRL will also incorporate innovative technological solutions for hydrogen production and increase processing capacity by more than 50 percent, giving MRL the ability to produce approximately 330 million gallons of RD and SAF per year. Table 2-1 summarizes the major activities that are being evaluated under Phase 2. Figure 2-1 is a conceptual layout of the development areas within the Plant that will be involved in the renewables Project.

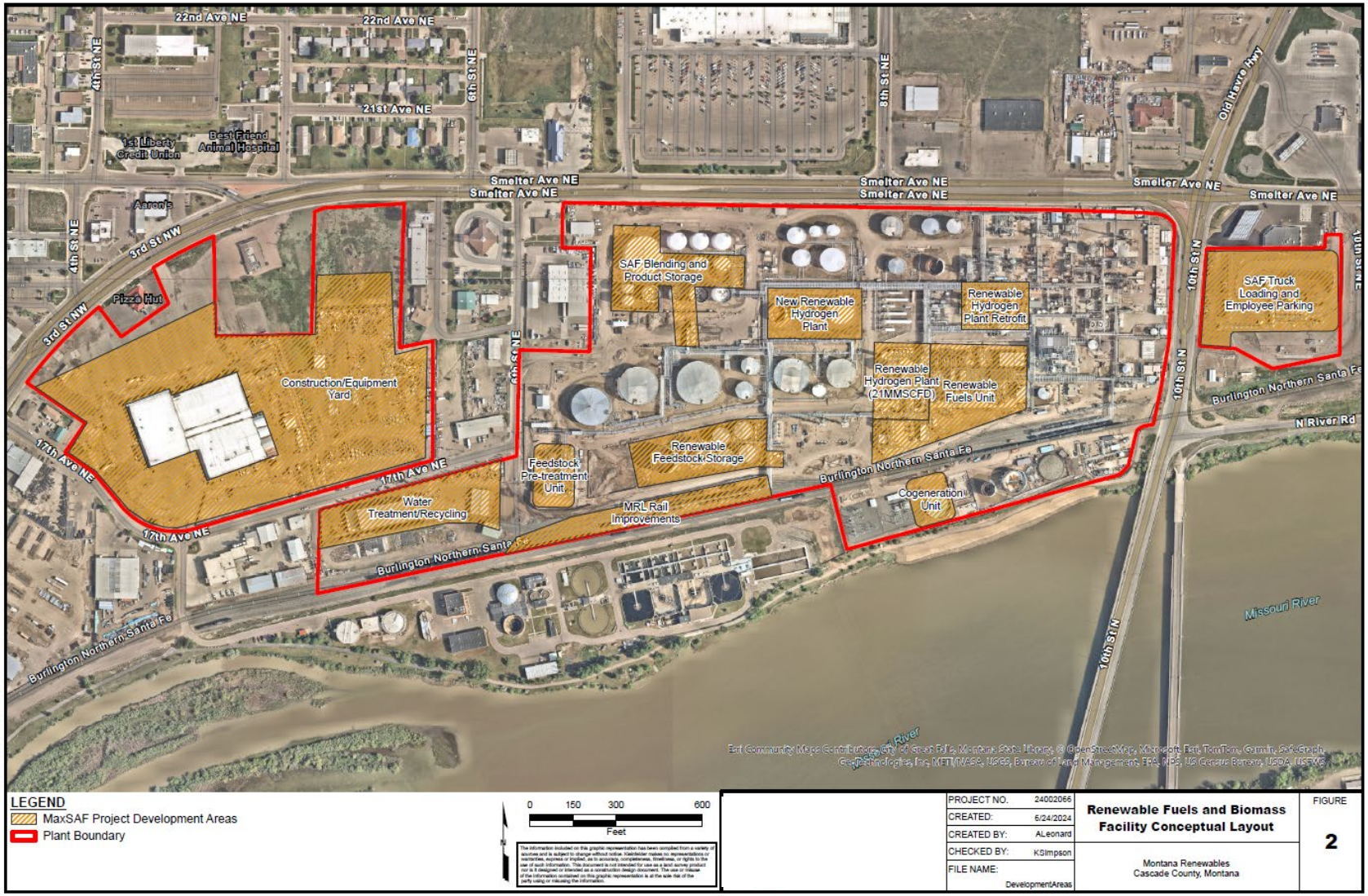
Table 2-1. Summary of Proposed Action Project Elements

Location in Figure 2	Project Element	Project Element Details
SAF Blending and Product Storage	SAF Blending and Product Storage	This Project element will provide the local capacity needed to blend and store the various SAF recipes to be exported by the SAF truck loading capability in commercial support of Department of Defense facilities, Malmstrom Air Force Base, Montana Air National Guard, commercial airlines (United, Delta, Alaska), seasonal firefighting, and Montana and regional airports. This SAF blending element involves approximately 2 acres within the existing Plant. A new 10,000-barrel blending and storage tank will be located within the existing tank farm.
Renewable Hydrogen Plant Retrofit	Renewable Hydrogen Retrofit	LPO funding will be used to purchase the existing 15 MMSCFD hydrogen plant. This Project element will reduce the renewables Facility's carbon footprint by taking the lessons learned from the existing 21 MMSCFD renewable hydrogen plant and applying them to make additional retrofits at the 15 MMSCFD hydrogen plant, increase overall capacity, and reduce emissions. Specifically, the existing 15 MMSCFD hydrogen plant will be modified to accept

Location in Figure 2	Project Element	Project Element Details
		renewable off-gas and/or naphtha as feedstock for producing renewable hydrogen. Additional retrofits will consist of installing a pre-reformer vessel (approximately 800 square feet in size) and modifying the existing heat integration unit and furnace to recover heat and send it back into the process. The renewable hydrogen retrofit element involves approximately 0.7 acre within the existing Plant.
Renewable Fuels Unit	Gas Compression Controls	This Project element has a direct impact on capacity as well as the renewables Facility's carbon footprint. Advanced compression controls will be installed on the multi-stage makeup hydrogen reciprocating compressors. The controls allow the compressors to be more efficient by reducing the amount of "spillback," which is gas that is compressed and then recycled. At a given capacity, a power savings occurs from reducing the amount of recycled spillback. Three compressors associated with the RFU will have this opportunity to incorporate advanced compression controls: two makeup hydrogen compressors and one RFU off-gas compressor. The technology proposed is a HydroCOM control system by Hoerbiger that eliminates step-loading and wasteful interstage spillbacks. The gas compression controls element will occur in the RFU, which occupies approximately 2.8 acres within the Plant.
Feedstock Pretreatment Unit	Debottleneck Pretreatment Unit	This Project element will execute process debottlenecks and the upgrades required to retrofit the renewable feedstock PTU and increase overall capacity to approximately 20,000 BPD. The retrofit will consist of a hydraulic debottleneck for the existing PTU equipment, with any new equipment located within or around the PTU. The debottleneck PTU element involves approximately 0.7 acre within the existing Plant.
Water Treatment/ Recycling	Water Disposal/Recycling	Non-hazardous wastewater from the renewable feedstock PTU is currently transported to permitted disposal locations by truck and/or rail. Under the Project, a PTU water treatment process will be implemented that will be capable of treating water on-site, thereby reducing transportation-related carbon emissions. The water treatment process is also being evaluated for its ability to recycle and reuse this treated water. It will be sized for approximately 300,000 gallons per day and will treat water to specification for onward discharge to the City's publicly owned WWTP and/or for internal water recycling. The wastewater treatment process is designed to include an initial buffer tank, ferric sulfate coagulant tank, lime neutralization tank, flocculation tank, primary clarifier, clarifier treatment tank, equalization tank, bio reactors with integral clarifiers, sludge tanks with centrifuges, and an effluent tank. Additional technologies, such as membrane and evaporation technologies, may be used to facilitate water recycling. Most of the equipment will be located within an existing building (see "Water Disposal/Recycling" in Figure 2-1), with the exception of the bioreactors and small ancillary equipment, which will be adjacent to the existing building. A carbon-steel effluent pipe will also be installed to connect to the City's WWTP. This effluent pipe will be approximately 3,000 feet long, 4 inches diameter, and constructed primarily within existing overhead piperacks within the Plant and then connected to existing wastewater piping for discharge to the City WWTP. The water disposal/recycling element involves approximately 2.4 acres within the existing Plant.

Location in Figure 2	Project Element	Project Element Details
Cogeneration Unit	Renewable Electricity/Steam	This Project element will construct a cogeneration plant to produce renewable electricity and steam from renewable fuels (off-gases, naphtha). The cogeneration unit will be sized to completely replace the fossil steam and electric requirements of the Plant. The approximately 18- to 20-megawatt (MW) cogeneration plant will be located on the south side of the Plant and consist of the following elements: approximately two small gas turbines, duct-fired burners for additional steam generation, selective catalytic reduction for nitrogen oxide (NO_X) control, electrical switchgear, and required auxiliary support equipment. The footprint will occupy approximately 0.35 acre. Fuels will come from the RFU through piping and export steam from the cogeneration will tie back into the Plant through piping. The electrical crossties will be at the Plant substation. The priority of this Project element is the production of renewable electricity for MRL. Excess renewable electricity (if available) will be sold to the CMR refinery and then to the grid. The renewable electricity/steam element involves approximately 0.5 acre within the existing Plant.
Renewable Fuels Unit	Max SAF	This Project element will retrofit the RFU to increase overall capacity to approximately 24,000 BPD and provide the flexibility to shift product yield toward high SAF. The new equipment will consist of a second reactor and a separator system that includes associated heat exchangers, pumps, and piping, along with associated tankage to support the expanded SAF production capability. This equipment will be located in appropriate areas of the RFU. Additional Project enhancements, such as the SAF truck loading discussed in the last row of Table 2-1 as well as the rail improvements discussed in Section 2.2.3, will also be installed to support enhanced capacity. The Max SAF element occurs within the RFU, as shown in Figure 2-1, which occupies approximately 2.8 acres within the Plant.
New Renewable Hydrogen Plant	New Renewable Hydrogen Plant	The new renewable hydrogen plant will be sized to support the renewable fuels unit's increased capacity, estimated at 40 MMSCFD. The feedstock for the new hydrogen unit will consist of the renewable fuels unit's off-gases and/or light naphtha for producing renewable hydrogen. New equipment includes a pre-reformer, steam methane reformer, heat recovery unit, and pressure swing adsorber. The site for the new renewable hydrogen plant covers approximately 2 acres.
MRL Rail Improvements	MRL Rail Improvements	An anticipated increase in renewable feed and product railcars (i.e., longer trains and/or larger-capacity railcars) for both receiving and shipping will require improvements to the existing rail system to allow increased railcar storage and provide operational flexibility to sort and index incoming and outgoing railcars. Proposed rail improvements will include construction of an additional 500 feet of track along the existing rail spur and loading/offloading railcar area in the southeastern portion of the Plant. Construction of the additional track will also require construction of a 500-foot-long fill wall along the length of the track that is rated for railroad loading. See Section 2.2.3 for more information.
SAF Truck Loading and Employee Parking	SAF Truck Loading	This Project element includes installing an SAF truck loading station on the east side of 10th Street N for an estimated five truckloads per day. Alternatively, the SAF loading station may integrate better as part of the existing asphalt loading rack nearer the west side of the Plant. Final engineering will determine the exact placement; however, in all cases, it will be installed within an existing disturbed area owned by MRL within the Plant. The addition of the truck loading station will give MRL the ability to truck approximately 1,000 BPD of blended SAF product to local destinations such as Malmstrom Air Force Base and Great Falls International Airport. As with other elements of the Project, the truck loading station will be installed within an existing disturbed area owned by MRL.

Figure 2-1. Renewable Fuels and Biomass Facility Conceptual Layout



The Phase 2 Project elements described in Table 2-1 will be completed entirely within the existing footprint of the Plant and located approximately as shown in the conceptual development areas depicted in Figure 2-1. The specific footprint of each Project element within the Plant will depend on final engineering. As presented in Section 3.5.2, Project designs will be engineered to integrate air emission control systems into the final design in coordination with the Montana Department of Environmental Quality (MDEQ). Materials and equipment for Project construction will be staged within an existing approximately 4-acre disturbed portion of the Plant. Additional aspects and details of the proposed conversion are described in the sections that follow.

2.2.1 Fencing, Grading, and Foundations

Approximately 800 feet of new fencing will be installed within the Plant to enclose feedstock/product storage tanks. To facilitate the equipment conversions/upgrades required for the Project, approximately 7.6 acres of previously disturbed ground within the Plant will be re-graded to ensure suitability and safety for construction. Grading will occur where new foundations are planned. In addition, an estimated 174,000 square feet of concrete pads will be poured over already-disturbed soils to provide stable and safe foundations for equipment. MRL maintains a Plant-wide stormwater plan, and site-specific stormwater best management practices (BMPs) will be identified and implemented as needed for Phase 2 infrastructure.

2.2.2 Power and Utilities

Infrastructure (e.g., natural gas, water, sewer, power connections) to support the Project within the existing Plant already exists. The existing power substation will be upgraded by MRL to support the new renewable cogeneration unit and additional electrical loads. Upgrades will include replacement of the components that connect the transformers to a bus bar and the addition of new wiring and switches to connect the new cogeneration equipment to the existing refinery power distribution equipment; however, MRL's ultimate goal is to produce its own electricity and no longer require power from the existing grid.

2.2.3 Access

Access to the Project site is limited to employees and contractors approved for entry into the Plant. Employees do not have direct vehicle access to the Plant; employees park on 10th Street N and at the other end of the Plant near the Westgate complex and walk or take a bus. There are multiple gated entry points into the Plant (i.e., one along 17th Avenue NE, two along 6th Avenue NE, three along 10th Street N).

MRL currently receives, on average, approximately 21 railcars of feedstock per day. At full capacity, the number of railcars delivering feedstock will increase to an average of 44 per day. The number of railcars that transport RD and SAF products from MRL will increase from approximately 20 railcars per day to approximately 40 to 45 railcars per day. The additional railcars for both shipping and receiving will be added to current trains. Additional train trips will not be required; rather, the trains will carry more railcars per trip. The anticipated longer trains and/or larger-capacity railcars for both receiving and shipping will require improvements to the existing rail system to increase railcar storage and provide the operational flexibility needed to sort and index incoming and outgoing railcars. Rail improvements will be completed by MRL as part of Phase 2. Proposed rail improvements will include the construction of an additional 500 feet of track along the existing rail spur and loading/offloading railcar area in the southeastern portion of the Plant. Construction of the additional track will also require construction of a 500-foot-long fill wall along the length of the track; the wall will be rated for railroad loading. Renewable products produced by MRL are and will continue to be delivered to markets on the West Coast and in Canada via rail.

No new roads are proposed for the Project.

2.3 Schedule

Engineering for the Phase 2 elements is ongoing. Construction will begin in October 2025. Construction activities will typically occur 10 hours a day, 6 days a week. Phase 2 is expected to be fully constructed by November 2027. Start-up will begin in December 2027, and Phase 2 is expected to be operational by January 2028.

2.4 Operations

Operation of the renewables Facility starts with the receipt of raw material (i.e., feedstock), followed by pretreatment of the feedstock, refining the feedstock into renewable fuels, fuel blending, and product shipment by rail and truck. The manufacturing process is described further in Section 2.4.1. The Project will be operated and maintained in accordance with the specifications for the individual pieces of equipment as well as applicable regulations, codes, standards, and permit requirements.

2.4.1 Manufacturing Process Summary

Renewable feedstocks, including, but not limited to, canola oil, distillers corn oil, used cooking oil, soybean oil, mustard seed oil, camelina oil, and beef tallow, arrive at the Plant by rail. From the rail loading and offloading area at the southeastern border of the renewables Facility, feedstocks are transported through on-site piping to heated storage tanks. To ensure stable operation, the feedstock inventory volume is stored about 2 weeks at full production.

The renewable feedstocks consist of a mixture of fats (triglycerides) and fatty acids that must be pretreated at the PTU to remove soluble and insoluble phosphorus and metals, which are detrimental to the performance of the RFU. The stored feedstock is transported by pipe to the PTU. The pretreatment process involves washing, through turbulent mixing, the renewable feedstocks with water and citric acid at a temperature of up to 500°F. The pretreated renewable oil is sent by pipe to be heated and mixed at the RFU feed tankage. The spent wash water (wastewater) produced during the pretreatment process is non-hazardous and discharged to the City Publicly Owned Treatment Works after primary treatment in the new on-site WWTP. The PTU produces no solid waste.

The pretreated feedstock is sent to tankage and then transported by pipe to the RFU for processing into renewable diesel and synthetic paraffinic kerosene (SPK), which, when blended with fossil kerosene, is SAF. MRL's RFU uses hydrogen and a solid catalyst (similar to the catalytic converter in a car) to chemically transform the feedstock into high-quality RD and SPK. Two primary chemical transformations occur:

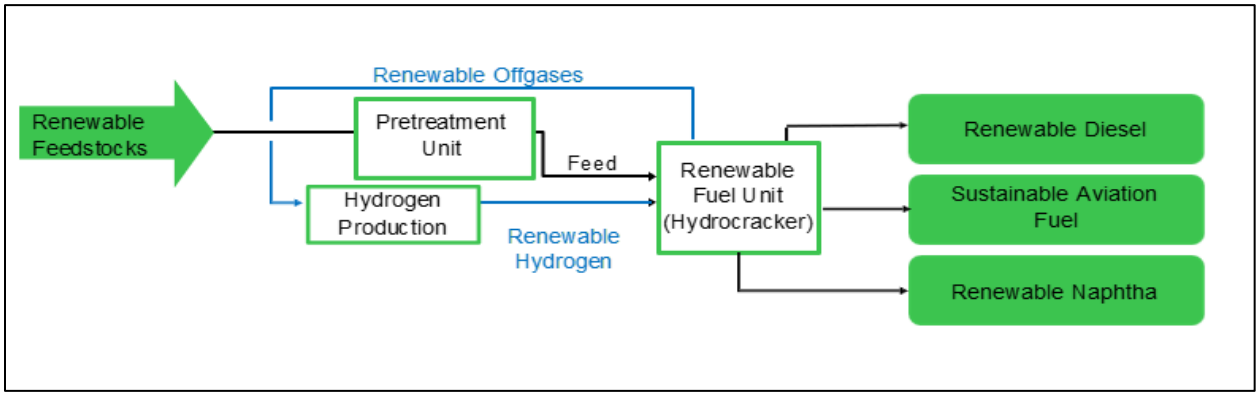
- The renewable feedstocks contain oxygen bound in the triglycerides and fatty acids. The oxygen must be removed for the products to have properties similar to those of fossil kerosene and diesel. This is termed hydrodeoxygenation, or HDO, where hydrogen chemically replaces the oxygen.
- Once the oxygen is removed, the resulting molecules are C14, C16, and C18 straight chain hydrocarbons. These molecules must be isomerized—meaning the shape of the molecule is changed—so that the resulting products meet the appropriate American Society for Testing and Materials (ASTM) specifications (ASTM D7566 Annex 2 for SPK and ASTM D975 for renewable diesel).

Renewable off-gases such as renewable natural gas and renewable propane from the RFU are used to produce the hydrogen required for the RFU; therefore, nothing is wasted. This is achieved by steam reforming. The renewable natural gas and propane are mixed with steam, and in the presence of a catalyst at very high temperature, the hydrocarbons and water react to form hydrogen and carbon dioxide. The mixture is separated and the renewable hydrogen is used in the RFU.

The renewables Facility produces steam from surplus heat to maximize the thermal efficiency of the manufacturing process. The HDO reaction in the RFU is exothermic (i.e., releases heat); there is more energy available than the process uses. Rather than wasting the energy by air or water cooling, steam is produced that can be used in the hydrogen production process and in other areas of the Plant.

Exhibit 1 illustrates the RD and SAF manufacturing process.

Exhibit 1. RD and SAF Manufacturing Process Flowchart



2.4.2 Staffing and Operational Timeframe

During construction, the number of construction workers at the peak is expected to be approximately 350, with a typical bell curve (i.e., lower numbers at the holiday periods and increased numbers during planned outages). During construction, one single shift is anticipated; however, it is expected that critical-path activities (e.g., equipment cleaning prior to maintenance, catalyst replacement) will be worked by multiple shifts during planned outages.

Once full production is reached, MRL estimates that the Plant will employ approximately 300, increasing the number of employees by approximately 40; 16 full-time jobs will support Project operations (typically four individuals are hired to cover each position due to the nature of shift work and the need for the Plant to operate 24 hours a day). Full production and staffing are expected to be reached by the second half of 2027. The Plant will continue to operate 24 hours a day, 7 days a week, with hourly operations employees running on two 12-hour shifts. Each 12-hour shift will have an on-site team and an on-call team for as-needed staffing support. Plant staffing will also include a maintenance team that works 5 days a week, 8 hours a day, along with salaried engineering and management personnel.

2.4.3 Shipping and Receiving

Feedstock is delivered to MRL and renewable fuels are shipped from MRL by the existing rail line that runs along the southern side of the Plant. MRL currently receives approximately 21 railcars with feedstock each day. At full capacity, the number of railcars with feedstock will increase to an average of 44 per day. Upon completion of the Project, the number of railcars for transporting RD and SAF from MRL will increase from approximately 20 per day to approximately 40 to 45 per day. Under the Project, there will be no increase in the number of train trips per day; rather, additional railcars will be added to the existing trains. In addition, and as previously discussed, MRL is proposing installation of a new SAF truck loading station that will give MRL the ability to ship five truckloads (approximately 1,000 BPD) of SAF per day to the regional market. Currently, the Plant ships five truckloads of non-renewable fuel products per day. Once Phase 2 is complete, these five truckloads will be used for shipping renewable SAF. As with other elements of the Project, the truck loading station will be installed within an existing disturbed area.

2.4.4 Waste Management

During operations, the renewables Facility will generate both solid and liquid nonhazardous waste from the renewables manufacturing process as well as general solid nonhazardous waste from routine building operations and maintenance. All solid wastes generated at the renewables Facility will be collected, categorized, and disposed of and/or recycled in accordance with the Plant's waste management practices and all applicable federal, state, and local environmental regulations.

Approximately 17 to 24 truckloads of wastewater from the renewable feedstock PTU is currently transported to permitted disposal locations each day; however, under the Proposed Action, MRL will initiate a wastewater pretreatment process that will be capable of treating approximately 300,000 gallons of wastewater per day for discharge to the City WWTP or internally recycled where feasible. This will eliminate the need to truck the wastewater off-site for disposal. A carbon-steel effluent pipe will be installed to send the discharge to the City's WWTP. This effluent pipe will be approximately 3,000 feet long, 4 inches in diameter, and constructed within the Plant's existing overhead piperacks; it will then connect to existing wastewater piping for discharge to the City's WWTP.

2.4.5 Emergency Preparedness

CMR and MRL maintain a robust Safety Procedures Plan as well as an Emergency Action Plan (EAP) that provide safety guidance and requirements for work within the Plant; these are applicable to all MRL personnel, processes, and infrastructure. The Plant also has a Spill Prevention Control and Countermeasure (SPCC) Plan that covers chemical management, routes of possible spills, and spill prevention and control measures. The Safety Procedures Plan, EAP, and SPCC Plan are discussed more in Section 3.9. CMR and MRL also participate in monthly Cascade County Local Emergency Planning Committee meetings and participate in the annual Montana Liquid and Gas Pipeline Association incident command exercise.

3. ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

In each of the following sections, a specific resource area is addressed with both qualitative and, where applicable, quantitative information to concisely describe the nature and characteristics of the resource that may be affected by the Project as well as the potential direct and indirect impacts on that resource from the Project given proposed Project controls. A conclusion regarding the significance of impacts is provided for each resource area.

Section 3.11 provides a review of the present and reasonably foreseeable federal and nonfederal actions that may contribute to a cumulative impact when added to the impacts of the Proposed Action. The impacts of past actions were reviewed and included as part of the affected environment to establish the current condition of the resource (i.e., the baseline condition) that may be affected by the Proposed Action.

3.2 Aesthetic and Visual Resources

The Project is within the footprint of a refinery that has been operating since 1922. As seen in Figure 3-1**,** above, the visual character of the Project would reflect the Heavy Industrial zoning of the property where the Plant is located as well as the character of the surrounding City WWTP, BNSF Railway line to the south, and the commercial buildings and Walmart to the north. Residential areas are approximately 0.09 mile to the northwest, 0.32 mile to the east, and 1.07 miles to the south (across the Missouri River).

The Plant does not appear to be visible from the residences south of the Project area, which are across the river; the view is obscured by commercial and industrial infrastructure and trees. Tanks within the Plant would continue to be visible from some of the houses to the northeast. In addition, tanks and other equipment would continue to be visible from some of the residences to the east.

Construction of the Project would result in permanent visual changes on the Project site (e.g., the addition of a 130-foot-tall reactor next to an existing 145-foot-tall primary reactor); however, the appearance of the equipment to be installed would be similar to that of existing equipment. Industrial infrastructure is already the dominant visual element in the immediate and surrounding landscape. Project operations could result in minor increases in nighttime light but should not adversely affect residential receptors. Light pollution is currently minimized by a 12- to 14-foot wall that surrounds the perimeter of the Plant.

Because the Project site is in an area that has been zoned for Heavy Industrial uses and the design of the Project would be similar to that of the existing Plant, impacts on aesthetic and visual resources as a result of the Project would not be significant.

3.3 Water Resources

There are no surface water features inside the Plant. Furthermore, CMR and MRL do not own or operate any groundwater supply wells. All water needed for both existing operations and for Phase 2 of the Project would be purchased from the City. Water is supplied to the Plant by the municipality from a utility meter. The Project is anticipated to use 600,000 to 700,000 gallons of fresh water each day; the water would require post-use treatment. The City's treatment plant handles approximately 32 million gallons per day (mgd) and has the capacity to treat 48 mgd.

Wastewater is currently pretreated on-site and trucked to permitted disposal locations; however, as described in Chapter 2, MRL is proposing a wastewater treatment process for nonhazardous water from the feedstock PTU. This process would be capable of treating water on-site, thereby reducing transportation-related carbon emissions. The water treatment process is being evaluated to determine if

treated water could be recycled and reused. The process would be sized for approximately 300,000 gallons per day and would meet the specifications for discharge to the City WWTP and/or internal uses that rely on recycled water.

MRL maintains a Plant-wide SPCC Plan, which is a written set of procedures required under 40 CFR 112.3. The SPCC Plan outlines MRL's procedures and requirements involving petroleum products, liquids, and liquid chemical management; routes of possible spills; spill prevention; spill handling; and reporting measures. Implementation of the SPCC Plan, including regular inspection and maintenance of spill containment BMPs (e.g., earthen or mechanical berms around tanks), ensures that, in the event of a spill, any spilled substance would be safely contained.

Stormwater control would continue to be managed through a combination of MRL's Plant-wide Stormwater Management Plan as well as measures from the SPCC Plan. Tanks at MRL are surrounded by man-made dikes that were constructed for the sole purpose of meeting the SPCC Plan's emergency response requirements. The dikes are constructed of sand and structural soil. Within the dikes, MRL has excavated depressions to create artificial swales; these are used to collect rainwater temporarily. Following a storm event, rainwater that has collected in the artificial swales drains to MRL's wastewater pretreatment system under a controlled process. Within 24 to 48 hours of a rain event, a locked valve is manually opened by an MRL employee, and the rainwater drains through a grate into MRL's pretreatment system. From the pretreatment system, the water goes into the City's WWTP, which is south of MRL. The hydrology of the man-made dikes and swales is temporary, not permanent, due to the controlled draining of rainwater on dry land. As part of the Stormwater Management Plan, stormwater flow is also controlled through a suite of site-specific BMPs, including, first and foremost, proper grading and drainage design. MRL would adhere to the Plant's existing Montana Pollutant Discharge Elimination System permit. There would be no changes to impervious surfaces as a result of the Project.

Given MRL's plans to continue to purchase water from the City, as well as recycle and reuse water; the absence of any on-site water features; and the stormwater and SPCC Plan controls that would continue to be used during construction and operation, impacts on water resources as a result of the Project would not be significant.

3.4 Cultural Resources

The *Cultural Resources Technical Report for the Montana Renewables, LLC, Renewable Fuels Facility, Great Falls, Montana,* was completed for the Project in November 2023 and then revised, based on meetings with the Montana State Historic Preservation Office (SHPO) in May 2024. The area of potential effects (APE) for the Project includes the direct (archaeological) and indirect (architectural) APE. The direct APE, which comprises the area of potential ground disturbance and any property, or any portion thereof, that would be physically altered or destroyed by the undertaking, is the approximately 56-acre co-located renewable fuels facility and conventional petroleum refinery. The indirect APE, which consists of the area in which the Project has the potential to introduce visual elements that would diminish or alter the setting, including the landscape, and the setting is a character-defining feature of a historic property, is made up of approximately 15.7 acres adjacent to the direct APE. Factors such as the design of the Project, the density of the surrounding built environment, and the presence of mature trees were taken into consideration when defining the indirect APE.

In July 2023, a records search was conducted in the Montana Cultural Resource Database maintained by the SHPO. This records search was initiated to identify any previously recorded prehistoric and/or historic archaeological resources as well as historic built-environment resources within the direct APE and the indirect APE. An archaeological inventory was completed on September 26 and 27, 2023. Given the negative records search results, negative survey results, and previous ground disturbance in the vicinity of the APE, impacts on archaeological resources as a result of the Project would not be significant.

According to the results of the field survey and historical research, four previously unrecorded buildings and structures that have reached sufficient age for consideration as historic properties and one previously recorded property that was recommended as eligible for listing in the National Register of Historic Places (NRHP) (24CA0371, Great Northern Railway) are located within the direct APE. Although the Great Northern Railway is recommended as eligible for listing in the NRHP, the previously recorded segment does not appear to retain the historic integrity needed to convey its historical significance; therefore, it is not recommended as a historic property for the purposes of Section 106 of the National Historic Preservation Act (NHPA). In the *Cultural Resources Technical Report for the Montana Renewables, LLC, Renewable Fuels Facility, Great Falls, Montana*, Calumet refinery Building 1 (24CA1975) and Building 2 (24CA1976) were recommended as eligible for the NRHP under Criterion A for their association with the important role the Calumet refinery played in shaping the development of Montana's oil industry and the impact it had on the industrial and economic growth of Great Falls. According to the Project description, no physical modifications of any kind would be made to Calumet refinery Building 1 (24CA1975) or Building 2 (24CA1976) as a result of this Project; therefore, the Project would have no direct effect on the buildings. The refinery itself has undergone many changes over time. Additional changes to the buildings and structures at the refinery would not result in an adverse effect on Calumet refinery Building 1 (24CA1975) or Building 2 (24CA1976), nor would the construction of new buildings and structures. Because of the absence of adverse impacts on historic resources within and surrounding the Project site, the impact on historic resources as a result of the Project would not be significant.

DOE consulted the SHPO and provided the revised *Cultural Resources Technical Report for the Montana Renewables, LLC, Renewable Fuels Facility, Great Falls, Montana,* on June 12, 2024. The Montana SHPO provided concurrence on July 10, 2024, stating that no historic properties would be affected (see Appendix A).

If cultural resources, such as human remains, lithics, pottery, or remnants of older construction, are discovered during Project activities, work would cease in the vicinity of the discovery, and the SHPO, the Office of the State Archaeologist, and all tribes with vested interest in the area would be notified. A qualified archaeologist or a designated representative of the Office of the State Archaeologist or Tribal Historic Preservation Office would evaluate any such discovery and, in consultation with the SHPO, implement appropriate measures before construction would resume.

Because of the absence of adverse impacts on cultural resources within and surrounding the Project site, as well as the controls that are in place to address an unanticipated discovery of such resources, the impact on cultural resources as a result of the Project would not be significant.

3.4.1 Native American Interests

In conjunction with this EA and the NHPA Section 106 historic and archeological review process, DOE sent a request in January 2024 to four separate federally recognized tribes (Apache Tribe of Oklahoma, Fort Belknap Indian Community of the Fort Belknap Reservation of Montana, Crow Tribe of Montana, and Little Shell Tribe of Chippewa Indians of Montana) for information on nearby cultural resources and for them to express any comments or concerns they had on the potential for those resources to be affected by construction of the Project (see sample request letter in Appendix A). Following the submission of the letter, each tribe was contacted by telephone to ensure receipt of the letter and respond to any immediate questions or concerns. No responses or comments were received.

Because of the absence of adverse impacts on Native American interests within and surrounding the Project site, impacts on Native American interests as a result of the Project would not be significant.

3.5 Air Quality

3.5.1 Setting

Air quality in an area is generally influenced by the pollutants released within and upwind of the area. It can be highly dependent upon the pollutants' chemical and physical properties. Air quality regulations and source-specific permits limit the pollutants that may be emitted from air emissions sources. Topography, weather, and land use in an area affect how pollutants are transported and dispersed as well as the resulting ambient air pollutant concentrations.

National Ambient Air Quality Standards (NAAQS) have been set by the U.S. Environmental Protection Agency (EPA) to protect human health and welfare with an adequate margin of safety. The criteria pollutants for which standards have been established are ozone (O_3), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), lead (Pb), and particulate matter (PM), including PM less than 10 microns in diameter (PM_{10}) and PM less than 2.5 microns in diameter ($PM_{2.5}$). The Project does not involve the use of lead; therefore, lead is not discussed further in this EA.

Ground-level O_3 is a secondary pollutant formed by a chemical reaction between NO_x and volatile organic compounds (VOCs) in the presence of heat and sunlight. Airborne PM consists of tiny coarse-mode (PM_{10}) or fine-mode ($PM_{2.5}$) particles or aerosols combined with dust, dirt, smoke, and liquid droplets. $PM_{2.5}$ is derived primarily from the incomplete combustion of fuel sources and secondarily formed aerosols, whereas PM_{10} is derived primarily from the crushing, grinding, or abrasion of surfaces. Hazardous air pollutants (HAPs) are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects due to adverse environmental impacts. EPA has classified 187 air pollutants as HAPs.

MRL is co-located with CMR, a traditional crude oil refinery in Great Falls, Cascade County, Montana. This area is designated as an attainment area for all criteria pollutants, meaning the area achieves the NAAQS. To determine NAAQS attainment status, federal regulations require each state to establish an ambient air monitoring network (refer to 40 CFR Part 58, Appendix D) to measure pollutant concentrations. Per the MDEQ Air Quality Bureau's 2023 Annual Monitoring Network Plan, an evaluation of EPA monitoring site setup criteria, historical monitoring data, and meteorological patterns, in combination with MDEQ's professional judgment, determined that ambient air monitoring in the Great Falls Metropolitan Statistical Area was warranted for only $PM_{2.5}$ (MDEQ 2023). The 24-hour average NAAQS for $PM_{2.5}$ is 35 micrograms per cubic meter (µg/m^3); the annual average NAAQS is 9.0 µg/m^3. The sole Great Falls air quality monitoring station is within 2 miles of the Project site. The next-closest multi-pollutant monitoring station is the National Core Monitoring Site (NCore), located in a wilderness north of Helena, Montana. Per the 2023 Annual Monitoring Network Plan, the average monitored $PM_{2.5}$ concentration in calendar year 2022 was 5.3 µg/m^3 at the Great Falls station. However, data from this monitoring station are for informational purposes; the station is not certified to present data for comparison to the 24-hour average NAAQS. The NAAQS design value (a statistic used for relative comparison to the NAAQS) at the NCore station in calendar year 2020–2022 was 30 µg/m^3 for the 24-hour average NAAQS and 4.3 µg/m^3 for the annual NAAQS, respectively. The NCore monitoring data showed no exceedances of the NAAQS for any pollutant in 2022.

3.5.2 Emissions Analysis

Project emissions occur during two primary phases: the construction/development phase and the operations phase.

3.5.3 *Project Construction Air Emissions*

During the construction phase, fugitive dust would be generated by grading and clearing, the removal of equipment or structures, vehicular traffic on paved and unpaved roads, and wind erosion on disturbed soil. In addition, other pollutants, including CO, VOCs, and NO_x, would be generated as the result of fuel combustion (gasoline, diesel, and/or natural gas) in construction vehicles and equipment. BMPs to reduce fugitive dust emissions from Project construction include water applications, reduced vehicle speeds, and the use of cleaner equipment, including combustion equipment that meets EPA Tier IV emissions standards for heavy diesel equipment, where possible. Additional information on EPA engine tiers is available at the EPA website (EPA 2024a). Construction-related emissions would be temporary, and BMPs would minimize the overall impact.

Mobile-source emissions from the operation of construction workers' vehicles and construction equipment would be temporary in nature. As discussed in Section 2.3, Phase 2 construction would begin in October 2025; the Project is expected to be fully constructed by November 2027.

MRL intends to bus construction workers to the renewables Facility from the employee parking areas on 10th Street N and at the other end of the Plant near the Westgate building complex. This would reduce emissions from passenger vehicles.

3.5.3.1 *Project Operation Air Emissions*

During Project operation, criteria pollutants and HAPs, including CO, NO_x, VOCs, PM, and SO_2, would be emitted from stationary combustion sources; storage tank vents; and leaks in equipment. HAPs would be emitted from these same three sources. Table 3-1 estimates criteria pollutant and HAP emissions from operation of the renewables Facility. The emissions estimates in Table 3-1 are based on preliminary the engineering design and indicative of controlled emissions. MRL cannot specify in more detail what air emission control systems would be implemented until the engineering design is completed and MRL's coordination with MDEQ is completed for the Phase 2 permit to construct and PSD permit (if applicable). MRL anticipates that, as part of the Phase 2 permitting process, a pre-application meeting between MRL and MDEQ would take place prior to the design being completed. If the Project is subject to a PSD permit, the Project would be classified as a major modification to an existing facility.

3.5.3.2 *Phase 1 Permitting*

The MDEQ Air Quality Bureau is the agency with jurisdictional authority to issue and enforce air quality permits. Phase 1 elements of the renewables Facility are currently operating under MAQP #5263-02. The MRL Title V operating permit application for existing Phase 1 MRL operations and equipment was submitted in November 2023 and awaiting issuance. MDEQ has not provided a timeframe for issuance of the Phase 1 Title V operating permit. As previously discussed, MRL is a legally separate entity and not under the ownership or control of CMR; it operates within its own SIC codes (i.e., 2911 and 2869). For reference, CMR operates under the following air permits: MAQP #2161-39 and Title V operating permit #OP2161-17.

3.5.3.3 *Part 70 Source Determination*

MDEQ determined that the renewables Facility, including Phase 1 and Phase 2, would have a separate Title V operating permit; the renewables Facility and CMR would not be permitted as a single source under Part 70. The Title V applicability determination was completed on a Plant-wide basis. Under the Title V operating permit program, sources are required to obtain a federal Title V operating permit if the potential to emit (PTE) exceeds 100 tons per year (tpy) for any criteria pollutant, 10 tpy for any individual HAP, or 25 tpy for total HAPs. The Project PTE exceeds the major-source threshold for CO and NO_x. The Project is therefore required to obtain a Title V operating permit.

Table 3-1. Renewables Facility Operation, Estimated Actual Emissions and Prevention of Significant Deterioration in Major Modification Significance Levels

Pollutant	Quantity (tpy)			
	PSD Major Modification Significance Level[a]	Phase 1	Phase 2	Estimated Actual Emissions Total
SO_2	40	5.91	13.15	19.06
NO_x	40	89.37	153.41	242.78
CO	100	78.10	123.16	201.26
PM	25	2.88	7.31	10.19
PM_{10}	15	9.06	25.02	34.08
$PM_{2.5}$	10	8.87	25.02	33.89
VOCs	40	94.96	58.22	153.18
Lead	0.6	—	—	—
Fluorides	3	—	—	—
Sulfuric acid mist	7	—	—	—
Hydrogen sulphide	10	—	—	—
Single HAP[b]	10	7.83	5.49	13.32
Total combined hazardous air pollutants	25	8.19	5.84	14.03

Source: Ramboll. 2024a. Preliminary Emissions Estimates in Support of Max SAF Operation. Confidentially prepared for Montana Renewables LLC. March 19.

a. Significance levels (i.e., significant emissions increases) are the net incremental increases in emissions from proposed major air emissions sources or proposed major modifications of existing air emissions sources that are defined as "significant" under PSD regulations at 40 CFR 52.21(b)(23) and at which PSD permitting program requirements are triggered.

b N-hexane was identified as the largest single HAP in the preliminary engineering design emission estimates. Actual emissions would be calculated later as appropriate to the permit application.

Notes: tpy = tons per year; SO_2 = sulfur dioxide, NOx = nitrogen oxides, CO = carbon monoxide, PM = filterable particulate matter, PM_{10} = particulate matter less than 10 microns in diameter, $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter, VOCs = volatile organic compounds, HAP = hazardous air pollutant

3.5.3.4 *Phase 2 Permitting*

MRL estimated emissions associated with the Project. The permitting thresholds applicable to the Project are presented in Table 3-1. Point sources associated with estimated emissions for Phase 1 and Phase 2 include the reformer heater in the renewable hydrogen plant, low-pressure steam boilers in the cogeneration plant, gas turbines in the cogeneration unit, the PTU hot oil heater, new storage tanks, and loading and unloading activities. Table 3-1 includes the PTE for point-source emission sources and fugitive emission sources. The emission calculations would be finalized following Project engineering and prior to submittal of the air permit application.

3.5.3.5 *Permitting Thresholds*

The Project site is in an attainment area for all criteria pollutants. As shown in Table 3-1, the PTE for the Project would exceed the PSD major-source threshold of 100 tpy for CO and NO_x; the estimated criteria pollutant emissions from the Project would exceed PSD significance levels for CO, NO_x, PM_{10}, $PM_{2.5}$, and VOCs. Therefore, the Project is expected to be subject to the Clean Air Act New Source Review (NSR) permitting program (i.e., construction permitting) and PSD provisions for sources in areas that have been classified as attainment areas, along with the Title V operating permit program.

Under the PSD program, major stationary sources are defined as those with a PTE of 100 tpy for any criteria pollutant within the 28 source categories specifically listed in 40 CFR Part 51.166, along with those that emit 250 tpy under all other source categories. Because the renewables Facility falls into one of the listed source categories (chemical process plant), the Project would require a PSD permit if anticipated Project PTE exceeds the 100 tpy PSD major-source threshold.

3.5.3.6 *PSD Permitting Process*

MRL anticipates, pending completion of the engineering design, that the Project's PTE would exceed the NO_x and CO major-source threshold of 100 tpy under the NSR permitting program. Therefore, MRL expects to submit a PSD permit application to MDEQ and obtain an MDEQ-issued PSD permit prior to commencing Phase 2 construction. The PSD permit application would include an analysis of Project air emissions and air quality impacts, along with Project GHG emissions. The issuance of permits by MDEQ would be subject to regulatory requirements, including Project conformance to the applicable NAAQS.

MRL expects to complete the engineering design for Phase 2 air emissions sources and controls, as required for preparation of the PSD permit application, in a timely manner and, subsequently, submit an application for a permit to construct Phase 2, as well as a PSD permit application, to MDEQ, based on the engineering design. MRL expects to participate in a pre-application meeting with MDEQ to review the Project design and discuss emissions and controls prior to preparation of the Phase 2 application for a permit to construct and a PSD permit application. MDEQ would provide input to MRL concerning PSD analysis methods, applicable requirements, and air emissions and control systems. Pre-application meetings were conducted with MDEQ prior to preparation of the application for a permit to construct for Phase 1.

MRL has identified the air emissions sources and control systems that are anticipated to be included in the Project Phase 2 application for a permit to construct and PSD permit application. As part of the permit application process, MRL would perform a "best available control technology" (BACT) analysis to evaluate, by pollutant, the various emissions control technologies for suitability to the Project's particular equipment and engineering design. As part of the air permit application process, the selected control technologies would require agency approval prior to the permit being issued. The BACT analysis would consider the availability and engineering feasibility of the control technology(ies), the emissions reductions achieved, and the cost to control. Some of the available control technologies to be evaluated include:

- CO (combustion air emissions sources)
  - Burner design
  - Heater design
  - Burner minimum oxygen levels
- NO_X (combustion air emission sources)
  - Combustion management
  - Post-combustion controls
  - Heater design
- VOC (combustion air emissions sources)
  - Heater burner design
  - Heater design
- VOC (vent and fugitive emissions sources)
  - Leak detection and repair standards for equipment leaks
  - Tank emission controls (applicable to storage tanks)
  - Loading designs/controls (applicable to both incoming feedstock and outgoing product)

- PM (combustion air emission sources)
  - Burner design
- SO_2 (combustion air emission sources)
  - Complying with Montana regulations regarding maximum fuel sulfur content

3.5.3.7 *Title V Operating Permit Process*

MRL submitted an application for a Title V operating permit for Phase 1 in November 2023; MDEQ reported that issuance of the Phase 1 Title V operating permit is pending. In accordance with Title V permitting procedures and the source determination (established through an iterative process with MDEQ between 2021 and 2023), MRL would be required to submit a revised Title V operating permit application to MDEQ to incorporate Phase 2 into the Phase 1 Title V operating permit. Specifically, MRL would be required to submit the revised Title V operating permit application within 6 months of Phase 2 start-up. The Title V permit would incorporate all elements of the Project PSD permit when issued, including all required emission controls. In addition, in Montana, MDEQ issuance of PSD permits and Title V operating permits requires review and approval by EPA Region 8.

Appendix B summarizes the permits MRL currently holds and the permits that would be needed for the Project.

The Project would result in fugitive air emissions from sources such as the additional employees' vehicles, along with additions to trucking and railcar operations for transporting SAF from the renewables Facility to customers. As further discussed in the Transportation section (Section 3.7), additional vehicle trips are estimated to include 46 additional trips from workers' vehicles each day and five trips involving tanker trucks each day. Because MRL is focused on providing local jobs, workers' vehicle trips would generally be short, originating in local communities. Similarly, the five additional tanker trucks per day would be delivering to local customers, such as Malmstrom Air Force Base and Great Falls International Airport. Minor mobile-source emissions during operations would also come from the trains that would deliver feedstock to the renewables Facility. As discussed further in Section 3.7, an additional 20 to 25 railcars would be added to rail operations at the renewables Facility; these railcars would be used to store feedstock on-site or transport product off-site. No additional engines would be required to move the additional railcars. As such, there would be a negligible increase in mobile-source emissions from locomotive operations.

Construction and operation of Phase 1 and Phase 2 would be subject to the permit conditions included in the Project permit to construct, PSD permit, and Title V operating permit. MRL anticipates conducting pre-application meetings with MDEQ prior to the submittal of permit applications to determine expected permit conditions, air emissions and control system requirements, and applicable standards and procedures for preparation of the PSD permit application. Permit conditions developed for and included in the applicable permits for the Project are expected to conform to regulatory requirements, including the NAAQS; therefore, construction and operation of the Project, in accordance with permit conditions, would not be expected to result in an exceedance of the NAAQS or an exceedance of other applicable requirements. Based on the above evaluation, as well as the mitigation measures presented in the Mitigation Action Plan (see Appendix C), Project impacts on air quality would not be significant.

Construction and operation of the renewables Facility would not affect existing CMR operations. The two operations function with separate feedstocks; any unplanned interruption at MRL would not affect CMR operations, or vice versa.

3.6 Noise

The Project site is within the boundaries of the existing Plant, which is in an area that has been zoned for Heavy Industrial uses. Existing sources of human-induced noise in and near the Project site include ongoing refining operations within the Plant; railroad engines and railcars along the BNSF Railway line south of the Plant, including railcars with deliveries to the renewables Facility; vehicular traffic to the west along 6th Street NE, Smelter Avenue NE to the north, 10th Street N to the east, and the bridge over the Missouri River; the City Sanitation Department, approximately 0.6 mile northeast of the Plant; the Electric City Speedway, approximately 0.7 mile northeast of the center of the Plant; and airplanes.

The Project would generate temporary noise during construction. Such noise would be typical of construction activities (e.g., the use of heavy machinery, activation of backup beepers) and intermittent. Construction activities would also result in additional vehicular traffic to and from the renewables Facility; however, this impact would also be temporary. MRL would manage noise from construction by limiting activities to daytime hours, as permitted by City ordinance; using mufflers on construction equipment; and complying with local noise ordinances. Noise impacts from the operation of new equipment would be associated primarily with pumps. The addition of more railcars to deliver feedstock to the renewables Facility, as well as transport RD and SAF from the renewables Facility, could lead to increased rail noise in the immediate area and along the BNSF Railway line. However, the logistics plan calls for pulling longer strings of railcars but not more often; therefore, additional train trips would not be required. Because this rail line has been in operation for more than 50 years, receptors in and near the Project site, as well as along the rail line, have most likely acclimated to noise from trains. Any additional noise would not be a novel source of noise in the area.

As stated in Chapter 2, the Project would result in the hiring of approximately 40 additional employees, many of whom would share a job or be shift workers; therefore, the Proposed Action would result in nine new day workers (18 vehicle trips a day) and seven shift new shift workers (28 vehicle trips per day, because there would be two shifts per day), for a total of 46 additional vehicle trips a day related to the Project, along with the associated vehicle noise from employees traveling to and from the renewables Facility 5 or 6 days a week. The addition of up to five tanker trucks each day at the SAF loading station would also increase vehicle noise along 10th Street N; however, because the new loading station would be bound on three sites by active roads, the increase in vehicle noise would be minimal.

MRL's Site Safety Plan (discussed more in Section 3.9) includes hearing protection for employees and contractors. Employees and contractors are required to participate in MRL's Hearing Conservation Program and receive audiometric testing prior to being assigned to work in an area with elevated noise levels. Hearing protection is available for all employees and required for employees who work in areas where noise levels exceed 82 A-weighted decibels (dBA). Double hearing protection is required in areas where noise levels exceed 103 dBA.

Noise resulting from construction activities would be temporary, limited to daytime hours, in compliance with local noise ordinances, and dampened by the use of mufflers on construction equipment. The industrial processes required to produce RD and SAF would not significantly affect ambient noise levels because the Project site is within an active Plant and surrounded by multiple sources of human-induced noise. Employees would be protected from noise and hearing impacts through participation in and compliance with MRL's Hearing Conservation Program.

The logistics plan for receiving and shipping would not require additional train trips or additional trucks. Rather, trains would add extra railcars, and the trucks that currently transport non-renewable fuels would transport the renewable fuels produced under the Project. Under the Project, the number of trucks that transport wastewater would be significantly reduced (see Section 3.10).

Because of the controls that would be implemented during construction, and because operations and maintenance under the Project would be very similar to current Plant operations and maintenance, as indicated in this analysis, impacts related to noise as a result of the Project would not be significant.

3.7 Transportation

As previously discussed in Chapter 2, access to the Project is limited to employees and contractors who have been approved for entry into the Plant. Employees do not have direct vehicle access to the Plant; they either park on 10th Street N or at the other end of the Plant near the Westgate complex. No additional parking would be required for the Project. Other employees walk or are bused to the Plant. Employee access is controlled by card readers at the gates. There are multiple gated entry points at the Plant: one along 17th Avenue NE, two along 6th Avenue NE, and three along 10th Street N (refer to Figure 3-1**)**. No widening or improvements along local access roads are proposed or needed.

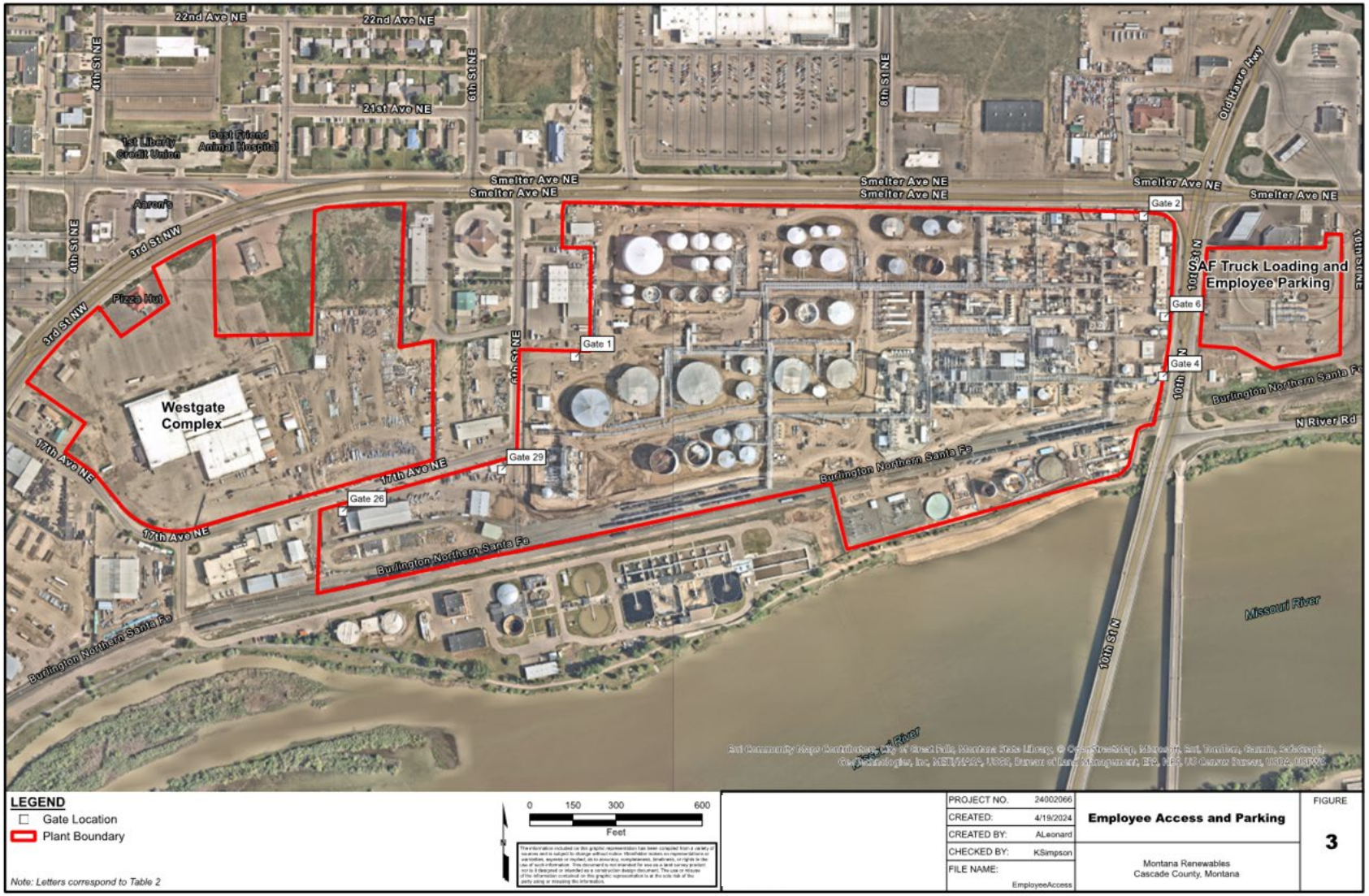
During construction, workers would be bused to the Plant.

As part of daily operations, there would be two categories of workers at the Plant, including the renewables Facility: shift workers and day workers. For a shift, one person would come and go every 12 hours, 365 days a year. Multiple employees are hired for the same position to ensure coverage over each shift and for backup coverage during illness and vacation. For day workers, whether union or management, one person would be hired for each position; the worker would come to the Plant for an 8-hour day, 5 days a week. The Project would result in nine new day workers (18 vehicle trips a day) and seven shift new shift workers (28 vehicle trips per day, because there are two shifts per day) traveling to and from the Plant each day, for a total of 46 additional vehicle trips a day related to the Project.

The addition of up to five tanker trucks each day at the SAF loading station on 10th Street N would result in a minimal amount of additional truck traffic along that street as well as the other roads and highways leading to the end customers who receive SAF deliveries (e.g., Malmstrom Air Force Base [8.2 miles east of the Plant] and Great Falls International Airport [7 miles to the southwest]). This additional truck traffic is not anticipated to have a measurable impact on traffic flow or volumes because it would be offset by a reduction in the number trucks carrying jet fuel to the same end customers. At full capacity, the number of deliveries of feedstock by railcar would increase from about 21 to an average of 44 per day; the number of deliveries of RD and SAF by railcar from MRL to end customers would increase from approximately 20 per day to approximately 40 to 45 per day. MRL has a dedicated rail spur with a loading and off-loading facility; the additional railcars would not be anticipated to cause issues with rail schedules or result in congestion because additional train trips would not be necessary; rather, the trains coming in and out of the Plant would pull additional railcars.

Given the busing for construction workers traveling to and from the site, the minimal additions to vehicle traffic and number of railcars during operations, and MRL's management of vehicle and railcar traffic in and out of the Plant, impacts related to transportation as a result of the Project would not be significant.

Figure 3-1. Employee Access and Parking



3.8 Socioeconomics and Environmental Justice

3.8.1 Socioeconomics

The Project site is in the city of Great Falls, Cascade County, Montana, immediately adjacent to Black Eagle, Montana, approximately 0.5 mile northeast/east of the Project area. Within the jurisdiction of Great Falls, the Project site occupies an area zoned for Heavy Industrial uses. The site is surrounded on the north and northwest by areas that have been zoned for General Commercial uses, which transition to areas that have been zoned Single-Family Medium Density. Northeast of the Project site, within the jurisdiction of Black Eagle, additional properties with Industrial zoning exist. East of the Project site are scattered mixed-use and residential properties. The City WWTP is directly south of the Project site; the Missouri River is directly south of the WWTP. The nearest hospital is approximately 2.7 miles southeast of the Project site, and the nearest school is approximately 0.5 mile to the north.

The beneficial socioeconomic impacts from implementation of the Proposed Action include the increased employment opportunities, the tax revenue generated, and direct and indirect spending in the local economy. In June 2023, the University of Montana Bureau of Business and Economic Research (BBER) conducted a study titled *The Economic Impact of the Calumet Montana Refineries*. The BBER carried out an extensive economic assessment and examination of the Plant's past and proposed operational impacts and determined that the Plant would ultimately support jobs, individual income and spending, and the state economy. Project expansion efforts would be expected to generate new investments in local businesses, and the demand for seed and tallow-based feedstock would enable MRL to source its purchases from producers in the region.

Although Montana does not have a sales tax, construction and operation of the Project would be anticipated to have beneficial impacts with respect to the sales revenue of local businesses (e.g., the sale of consumables and fuel). MRL and its contractors would very likely purchase materials locally. This would benefit establishments in the area that sell the necessary materials for the Project.

Payroll taxes would be collected from both local workers and temporary non-local workers (i.e., the specialized workers or contractors who could be on-site during Project construction). Payroll taxes would temporarily increase revenue for the State of Montana as well as Cascade County. During operation of the Project, MRL would continue to pay property taxes to Cascade County for the land on which the Project site is located. Local governments typically use tax revenues for infrastructure improvements, such as roads, but also for schools, health facilities, and other needs of the community. In addition, after implementation of Phase 2 (the Proposed Action), MRL estimates that the Plant would employ approximately 300 full-time employees, which would increase full-time employment by approximately 40. Full production and staffing are expected to be reached by the second half of 2027. The Plant would continue to operate 24 hours a day, 7 days a week, with hourly operations employees working two 12-hour shifts. Each 12-hour shift would have an on-site team and an on-call team for as-needed staffing support. Plant staffing would also include a maintenance team that would work 5 days a week, 8 hours a day, along with salaried personnel. A need for new housing or supporting infrastructure is not anticipated. The Great Falls area has ample housing and associated infrastructure and would be able to support the slight influx in residents due to job creation at the Plant.

MRL has a Montana-first hiring policy, which would apply to construction workers as well as Plant employees. MRL also ensures that its contractors abide by Montana-first hiring preferences. For example, in recent contracts, MRL has included a clause that requires a hiring preference for bona fide Montana residents with the needed qualifications. All Phase 1 construction contractors certified their adherence to this requirement. Phase 2 contractors would also be held to this standard.

Although the Project site is near a school (0.5 mile away from the Plant), given the security procedures currently implemented at the Plant (e.g., perimeter fencing, lighting, 24-hour surveillance), which would continue with the Project, trespassing on the Project site by children is not possible; therefore, children would not be affected disproportionately with respect to safety risks. In addition, given the jobs that would be created during construction and operation of MRL's renewables Facility and the availability of housing and public services in the Greater Great Falls area, impacts on socioeconomics would not be significant.

3.8.2 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs federal agencies to address environmental and human health conditions in minority and low-income communities. EPA's EJScreen environmental and socioeconomic indicators data were used in the baseline analysis of impacts. The evaluation of environmental justice (EJ) is dependent on determining if high and adverse impacts from the Project would disproportionately affect minority or low-income populations in the affected community.

In accordance with EPA's EJ guidelines, minority populations should be identified when either 1) the minority population of the affected area exceeds 50 percent or 2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. In this case, the recommended percentage set by EPA would be 10 percent above the reference baseline population.

Low-income populations are characterized by limited economic resources. EPA's EJ guidelines designate the U.S. Census Bureau's annual poverty measure as the official metric for the analysis of low-income populations, although other definitions exist. If a family's total income falls below the poverty threshold, then that family and every individual in it is defined as being in poverty. Unlike its treatment of poverty, the U.S. Census Bureau does not provide an official definition of low income. Additional socioeconomic characteristics can be used to further analyze the geographic area for the potential presence of low-income populations.

Populations of census block groups within or near the Project area were reviewed using EPA's EJScreen tool. This analysis used Montana as the reference population for consistency. As a result, each block group is compared to the same baseline information. The ethnic and racial composition of the Project area, the county, and the block groups within or near the Project area, as well as the state, are presented in Table 3-2.

Table 3-2 summarizes data regarding the population of color as well as the low-income population in Montana, Cascade County, Great Falls, and three block groups within or near the Project area. The Project site falls within Block Group 1, Census Tract 18 (300130018001), and Block Group 2, Census Tract 101 (300130101002). In addition, Block Group 2, Census Tract 19 (300130019002), was included in the analysis because of its proximity to the Project site. Table 3-2 is populated with EJScreen data for each geographic area, as derived from U.S. Census Bureau decennial census information from 2020 as well as 2018–2022 American Community Survey data. As seen in Table 3-2, only Block Group 1, Census Tract 18 (300130018001), and Block Group 2, Census Tract 101 (300130101002), have a meaningfully greater percentage of low-income populations compared with the county and state, at 43 percent and 61 percent, respectively (see highlights in Table 3-2). The population of color makes up less than 20 percent of the overall population in the state, Cascade County, the block groups, and Great Falls.

Table 3-3 provides information from EPA's National Air Toxics Assessment (NATA) AirToxScreen tool for the two block groups identified as well as the EJ communities. The NATA cancer risk indicator is a way to compare localized cancer incidences to those in the identified EJ block groups, the state, and the entire U.S. The NATA cancer risk index (i.e., lifetime risk per million) in the geographies presented in Table 3-3 is below the 50th percentile, meaning the Project site is not in an area that, historically, has been at a high risk with respect to cancer from air quality.

Table 3-2. Population, Ethnicity, and Income

Analysis Area	Total Population	Population of Color	Low Income
State of Montana	1,132,812	15%	32%
Cascade County	84,78	16%	32%
Block Group 1, Census Tract 18 (300130018001)	1,048	13%	43%
Block Group 2, Census Tract 19 (300130019002)	2,120	6%	24%
Block Group 2, Census Tract 101 (300130101002)	672	16%	61%
Great Falls, Montana	60,500	17%	34%

Note: All population, race/ethnicity, and low-income data were gathered from EPA'S EJScreen. Accessed July 15, 2024.

Table 3-3. EPA's National Air Toxics Assessment Statistics (based on the census block groups identified as EJ communities)

	Block Group 1, Census Tract 18 (300130018001)	Block Group 2, Census Tract 101 (300130101002)	State Average	Percentile in State	U.S. Average	Percentile in U.S.
NATA* cancer risk (i.e., lifetime risk per million)	20	20	16	1	25	1

**More information on the NATA can be found at https://www.epa.gov/national-air-toxics-assessment (EPA 2024b).*

The existing refinery has been operating in the area since 1922. Although NATA data show that the Project site is not in an area with increased cancer risks, it should be noted that the identified EJ block groups have a slightly higher risk than the state. MRL would obtain new air permits and/or modify existing air permits through the MDEQ Air Quality Bureau to account for changes in emissions from implementation of Phase 2 of the Project. To secure a permit that conforms to MDEQ's permitting programs, MRL would commit to work with MDEQ to ensure that Project equipment and emissions would be in compliance with applicable state and federal requirements and emission controls would be commensurate with industry standards. MRL has indicated that a timely air permit application to authorize Phase 2 of the Project would be submitted after final Project design. The changes in emissions would not be expected to have a disproportionately high and adverse impact on the surrounding communities, which are not experiencing increased NATA cancer risks from the Plant under current conditions. The Project's ultimate goal is greater use of RD and SAF in the market, thereby reducing overall national emissions of air pollutants and GHGs, as further discussed in Section 3.11.2. As such, disproportionately high and adverse impacts related to the air quality experienced by EJ communities would not be anticipated from the Project.

In order to identify EJ communities within and near the Project site, the same geographies identified in Table 3-2 were used to analyze additional EJScreen reports and determine various EJ community risk factors, as described in Table 3-4.

EPA uses the 80th percentile as a threshold for identifying populations of concern that may be experiencing a disproportionate burden within the community. Percentiles are a way to see how an area of analysis compares to every other area in a region, state, or the entire United States (EPA 2023). As shown in Table 3-4, the identified EJ block groups exceed the 80th percentile for at least one value with respect to pollution, socioeconomic indicators, health indicators, and/or critical service gaps (as indicated by the shaded cells).

Table 3-4. EPA EJScreen Indicators for the Project Area

Indicators	Montana State Average	Cascade County	Percentile	Block Group 1, Census Tract 18 (300130018001)	Percentile	Block Group 2, Census Tract 101 (300130101002)	Percentile	Great Falls	Percentile
Pollution and Sources									
Toxic releases to air	590	400	78	3,400	95	1,200	89	530	81
Hazardous waste proximity (facility count/kilometer)	0.86	1.5	77	1.5	76	2	84	1.8	82
Wastewater Discharge (toxicity-weighted concentration/meter)	4,200	680	73	610	72	1,200	78	690	73
Socioeconomic Indicators									
Less than high school education	6%	7%	65	6%	63	17%	95	6%	64
Low life expectancy	19%	19%	49	15%	12	21%	74	21%	76
Health Indicators									
Heart disease	6	6.2	52	6.1	50	6.5	60	6.4	56
Cancer	7.3	7.3	45	8	66	7.2	43	7.5	50
Persons with disabilities	14.8%	15.1%	58	13%	38	10.2%	18	16.4%	67
Critical Service Gaps									
Broadband internet	14%	15%	59	31%	92	20%	74	15%	57
Lack of health insurance	9%	7%	46	4%	15	15%	89	7%	46

Of the values in Table 3-4, the two identified EJ block groups have meaningful greater (80th percentile or above) toxic releases to the air compared with the state or county. Block Group 1, Census Tract 18 (300130018001), has almost six times more toxic releases than the state; Block Group 2, Census Tract 101 (300130101002), has two times more toxic air releases than the state. This may be caused by the proximity to industrial facilities. As described in Section 3.5.2, *Emissions Analysis*, the Project would be subject to the conditions included in the Project's permits to construct, the potential PSD permit, and the Title V operating permit. MRL anticipates conducting pre-application meetings with MDEQ prior to the submittal of permit applications to determine expected permit conditions, air emissions and control system requirements, and applicable standards and procedures for preparation of the PSD permit application, if needed. Permit conditions are expected to conform to applicable regulatory requirements, including the NAAQS. The Project is not expected to result in an exceedance of the NAAQS or other applicable requirements and therefore would not result in a disproportionately high and adverse impact on EJ communities.

The identified EJ block groups have nearly twice as many facilities for hazardous waste storage and disposal compared with the state or county. All waste generated by the Project would be collected, categorized, and disposed of and/or recycled in accordance with the Waste Management Plan (WMP) and all applicable federal, state, and local environmental regulations, as outlined in Section 3.10, Waste Management.

Within Block Group 2, Census Tract 101 (300130101002), the percentage of the population with less than a high school education is approximately 10 percent more than the percentage for the state or the county. In addition, there are critical service gaps in the Project area relate to internet access and a lack of health care.

Although there are low-income EJ populations within the Project area, no additional land development would be required. The Project would convert a portion of an existing refinery, which is located on previously disturbed land. MRL would expand its renewable fuels operation through various elements that would directly increase capacity, support capacity, provide product flexibility, and/or reduce the carbon footprint of the Plant. There are no anticipated Project elements that could result in disproportionately high and adverse impacts on minority or low-income populations in the affected area; therefore, impacts on EJ communities as a result of the Project would not be significant.

3.9 Health and Safety

Increased risks to human health and safety would be highest during Project construction (e.g., with employees working in and around heavy equipment and construction vehicles). The operational risks of the Project involve potential equipment failures, a release of chemicals, exposure to chemicals, an accidental release of hydrogen or contact with hydrogen, employee errors, emergency or security situations, and slips, trips, and falls that result in employee injury.

CMR and MRL maintain a robust Safety Procedures Plan as well as an EAP. These provide guidance and safety requirements for work within the Plant. The plans are applicable to all MRL personnel. Combined, the Safety Procedures Plan and EAP address all aspects of physical safety and site security with procedures that involve emergency preparedness and emergency response, fire prevention, incident management and reporting, personal protective equipment, elevated work, confined-space work, safety data sheets, emergency evacuation procedures, industrial hygiene, and other elements critical to keeping employees and the entire Plant safe.

CMR and MRL operating practices contained within the Site Safety Plan and EAP would continue for operation of the Project. Federal Occupational Safety and Health Administration (OSHA) regulations, EPA rules, Emergency Planning and Community Right to Know Act (EPCRA) emergency planning

requirements, state rules under the Montana Occupational Safety and Health Act, and industry safety standards (e.g., American Petroleum Institute standards) for construction and operation would continue to be implemented to ensure the safety of workers and the public.

As previously discussed, during operation of the Project, chemicals and materials needed for RD and SAF production would continue be delivered to the renewables Facility by rail and stored and labeled in accordance with OSHA and EPA requirements. MRL is subject to the requirements under Section 112(r) of the Clean Air Act, which includes stringent requirements for chemical accident prevention. Table 3-5 summarizes the chemicals stored on-site for use in the production of RD and SAF as well as the chemicals that are used for legacy CMR refining activities. Under the Project, the chemicals in Table 3-5 would continue to be stored on-site in the same or very similar quantities. As demonstrated, the Project would not result in a substantial increase in the types or volumes of chemicals stored on-site.

Table 3-5. Chemicals Used by MRL in Production of RD and SAF

MRL Chemicals Stored On-Site for Renewables Refining		
Product	**Application**	**Total Gallons On-Site**
BBIO1500-95	RDU emulsion breaker	1,950
BBIO3000-330	RDU antifoulant	2,557
CMR Chemicals Stored On-Site for Crude Refining		
BBPR27140-330	Emulsion breaker	1,760
BBPR81150-330OW	Neutralizer	2,864
BBPR81232-10	Corrosion inhibitor	236
BEXCAL7760-330OW	Amine removal	4,096
BLFS3120R-330	Antifoulant	1,534
BLFS3120R-95	Antifoulant	0
BLFS3301R-330	Antifoulant	762
BSX9272-330OW	H_2S scavenger	990
BT3034-330OW	Pour point depressant	535
BT3922-95	Jet fuel antioxidant	1,095
BT4695-330	Antioxidant	240
BT9711-10	Cu/Ag corrosion inhibitor	55
BT9711-95	Cu/Ag corrosion inhibitor	260
BTGD1345R-330	Corrosion inhibitor	782

RDU = renewable diesel unit; H_2S = hydrogen sulfide; Cu/Ag = copper/silver

As previously discussed, CMR and MRL maintain a Plant-wide SPCC Plan that outlines procedures and requirements for petroleum products, liquids, and liquid chemical management; routes of possible spills; spill prevention; spill handling; and reporting measures. Continued implementation of the SPCC Plan during Phase 2, including regular inspection and maintenance of spill containment BMPs (e.g., earthen or mechanical berms around tanks), would ensure that, in the event of a spill, any spilled substance would be safely contained.

To ensure site security, access to the Plant would be limited. Employee access would be controlled by card readers at gates, turnstiles, and doors that would create a record of every person entering and exiting the Plant. The CMR and MRL internal security department would monitor entry points and conduct regular patrols of the grounds. CMR and MRL would also employ a dedicated four-person safety team with day-shift and night-shift representatives, ensuring 24/7 access to safety personnel. These safety and security measures would continue with the addition of the Project.

In the event of an emergency, emergency response and medical services for the Project would be provided largely by Great Falls Fire Rescue, the Great Falls Police Department, the Cascade County Sheriff's Department, and the CMR Security Department. Firefighters with Great Falls Fire Rescue receive training regarding the unique potential hazards associated with the Plant. The EAP includes requirements to inform first responders of potential hazards associated with both construction and operations. This ensures that first responders, as well as the public, would be protected from exposure to potentially hazardous situations in the event of a fire or industrial accident. Site plans would continue to be regularly updated by CMR and MRL and provided to the fire department.

The CMR and MRL Site Safety, EAP, and SPCC Plans would continue to be used by both CMR and MRL personnel and adapted and updated as needed to minimize human health and safety concerns. With implementation of these robust health and safety standards and processes, increases in risks to human health and safety as a result of the Project would not be significant.

3.10 Waste Management

The Project would have a direct beneficial waste management impact because RD and SAF production would use feedstocks, such as used cooking oil and beef tallow, that would otherwise be disposed.

CMR and MRL maintain a robust WMP that covers all aspects of waste management (e.g., waste types, waste minimization, training requirements, waste determinations, waste handling and storage requirements, record keeping and documentation). Per the WMP, for employees who work with hazardous wastes, all personnel "must successfully complete a program of classroom instruction, online training…, or on-the-job training that teaches them to perform their duties in a way that ensures compliance with [hazardous waste handling]." All wastes generated from the Project would be collected, categorized, and disposed and/or recycled in accordance with the WMP and all applicable federal, state, and local environmental regulations.

During construction, the Project would generate construction debris that would be stored in appropriate construction waste containers, such as roll-off boxes, and disposed of at the High Plains Landfill operated by Republic Services, approximately 20 miles northeast of the Plant.

During operations, MRL would generate three principal waste streams: wastewater, sludge from the feedstock PTU, and spent catalysts. As previously discussed, wastewater from the renewable feedstock PTU (approximately 150,000 gallons per day) is currently transported to permitted disposal locations in approximately 17 to 24 truckloads per day; however, under the Project, MRL would increase the capacity of the feedstock PTU. MRL would generate an additional 150,000 gallons per day, or a total of 300,000 gallons per day, requiring approximately 34 to 48 truckloads a day to transport for disposal. Under the Project, MRL also would construct and operate a wastewater pretreatment process to treat non-hazardous wastewater from the feedstock PTU for discharge by pipeline to the City WWTP or for internal recycling, where feasible. This would eliminate 300,000 gallons per day of non-pretreated wastewater that would otherwise be transported off-site by truck for disposal. Instead, under the Project, sludge would be generated from the on-site pretreatment of wastewater, as explained in the paragraph below, and pretreated wastewater would be piped to the City WWTP for further treatment before discharge.

The solid waste stream that results from the production of RD and SAF includes the sludge from the lime and other materials used to pretreat wastewater. Under Phase 2 operations, the wastewater pretreatment process would produce approximately 50 to 75 tons per day of non-hazardous sludge that would be transported to the High Plains Landfill in two truckloads per day; thus, the Project would eliminate the transport of approximately 17 to 24 truckloads per day of wastewater and instead require only two truckloads per day for permitted disposal at the High Plains Landfill. MRL has confirmed that the landfill has the capacity to accept this volume of waste.

Various catalysts would be used in the renewable diesel unit (RDU), hydrogen plant, and cogeneration process. During the refining process, catalytic refiners, also known as refining catalysts or catalysts, get contaminated with impurities and become deactivated over a period of time. Once catalysts become inactive, they are withdrawn from the process and replaced with new catalyst. ”Spent” catalysts that contain metals are sent for metals reclamation before being disposed of at landfill permitted for nonhazardous waste. Spent catalysts that do not contain metals are sent directly to permitted landfills. Project operations would result in the production of approximately 12,400 to 15,000 cubic feet of spent catalyst per year.

MRL’s planned solid waste management practices for the Project would be aligned with those of existing operations, including compliance with the WMP and beneficial use of feedstocks that would otherwise be disposed of. As previously discussed, construction of the wastewater pretreatment process would allow pretreated wastewater to be piped, thereby eliminating the transport of wastewater. Given these Project features, impacts from waste management as a result of the Project would not be significant.

3.11 Cumulative Impacts

Cumulative impacts are potential effects on the environment from the incremental impact of the Project when added to other past, present, and reasonably foreseeable future actions undertaken by other agencies (federal or nonfederal) or persons (40 CFR Part 1508.1[g]). Projects were identified through a review of active project lists and planning documents from the Cascade County Planning Department, City Planning Department, City WWTP website, and the Montana Department of Transportation Projects Department; phone calls with the Cascade County planning staff; a review of regional newspapers; and a review of additional information provided by the Applicant. The Project review was conducted within a radius of approximately 1 mile radius around the Plant.

Identified past, present, and reasonably foreseeable projects within the region include the following:

- Current and past crude oil refining at the refinery and current RD and SAF production at the renewables Facility.
- Replacement of an existing gas transmission line by Northwestern Energy adjacent to the Plant.
- The City Sanitary Sewer Force Main Project, which would install a new force main from the City WWTP (located just south of the Plant) that would extend under the Missouri River, then continue to a lift station on the south side of the river, across from the Plant. This project is currently involved in a lengthy permitting process, and construction is not anticipated to begin for 2 to 3 years.
- The City Missouri Riverbank Stabilization Phase 2 Project, which would occur along approximately 500 feet of the north side of the Missouri River, just west the Plant. Construction of this project would commence in summer 2024 and take no more than 3 months to complete.
- New commercial development, including a hotel, approximately 1 mile west of the Plant on the same side of the Missouri River and just north of 421 3rd Street NW.

LPO reviewed the identified projects in the region to determine the resources that may be subject to a cumulative impact. The review focused on the resources affected by the Project as well as identified resources that may be affected by both the Project and other projects in the region. Following the review, the following resources were evaluated for cumulative impacts:

- Water resources
- Air quality
- Greenhouse gases and climate change
- Noise
- Transportation

The Project, when considered together with the identified projects in the region, would not have the potential to result in significant cumulative impacts on other resources due to the geographic location and separation of the projects, the disturbed and industrial nature of the Project site and surrounding region, and/or the lack of construction or operational overlap that could result in an incremental impact on a particular resource.

3.11.1 Water Resources

Given MRL's plans to continue to purchase water from the City and recycle and reuse water; the absence any on-site surface water features; and the stormwater and SPCC controls that would continue to be used during construction and operation, impacts on surface or groundwater or floodplains from the Project would not be significant. Past, current, and reasonably foreseeable activities associated with traditional oil refining at the CMR refinery would continue to occur in accordance with relevant permits (e.g., National Pollutant Discharge Elimination System permits) and plans (e.g., SPCC Plans and Stormwater Pollution Prevention Plans). Other proposed development projects in the region would need to obtain construction stormwater permits and use BMPs to protect resources from stormwater impacts. With continued and proper application of federal, state, and local permit conditions, cumulative impacts on water resources as a result of the Project and reasonably foreseeable actions would not be significant.

3.11.2 Air Quality

The Project is expected to generate temporary emissions of criteria pollutants and HAPs, including formaldehyde, benzene, toluene, and xylenes, primarily as the result of diesel fuel combustion during construction and ongoing emissions during operations (e.g., facility process emissions, employee commute emissions, product locomotive/trucking/shipping emissions). The temporary increase in emissions due to construction is not expected to be significant. Traditional oil refining at the Plant would continue to produce emissions of criteria pollutants and HAPs but in accordance with applicable air permits. Other development projects in the region would result in temporary emissions during construction, mostly dust and tailpipe emissions from construction vehicles and equipment. Overall, given that the region is currently in attainment with respect to all NAAQS and no exceedances of the standards have been reported for measured pollutants (e.g., $PM_{2.5}$) at ambient air quality monitors, the Project, when combined with past, current (including existing operations at CMR), and reasonably foreseeable actions would not cause significant cumulative impacts on air quality. Based on preliminary engineering calculations, the Project is expected to exceed the NO_X and CO major-source thresholds under the NSR permitting program and therefore require an MDEQ-issued PSD permit prior to commencing construction and a revised Title V permit application for Phase 1 and Phase 2 within 6 months of Phase 2 start-up.

3.11.3 Greenhouse Gas Emissions and Climate Change

The current science and study of the Earth's climate now shows with 95 percent certainty that human activity is the dominant cause of observed global warming since the mid-20th century (Intergovernmental Panel on Climate Change 2013). Since the beginning of the industrial era, circa 1750, human activities have increased the concentration of GHGs, primarily carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) in the atmosphere. The increased concentrations of GHGs in the atmosphere results in global warming caused by the incoming solar radiation that passes through the atmosphere to the Earth's surface. The rising global temperatures have been accompanied by changes in weather and climate, resulting in more floods, droughts, intense rain, rising sea levels, Arctic Sea ice decline, and more frequent and severe heat waves. It is now well established that rising atmospheric GHG concentrations are significantly affecting the Earth's climate (Council on Environmental Quality 2016).

Most of the state of Montana has warmed by roughly 2 degrees Fahrenheit in the last century; heat waves have become more common, winter snowpack depth is declining, and snow melt is taking place earlier (EPA 2016). Rising temperatures and changes in rainfall could have impacts on forest growth and health, wildfire occurrence, and agriculture.

Impacts Associated with GHG Emissions and Climate Change

According to the 1990–2021 U.S. national GHG inventory, the transportation sector accounted for the largest contribution to anthropogenic GHG emissions in this country (29 percent), and of that 29 percent, aircraft contributed 8 percent (EPA 2023). DOE's Bioenergy Technologies Office has determined that SAF has a smaller carbon footprint than conventional petroleum-refined jet fuel and that, depending on the renewable feedstocks used, the life cycle of the GHG emissions may be considerably reduced. Even a net-negative GHG footprint may be achieved (U.S. Department of Energy n.d.a). Because of the wide range of sustainable feedstocks and reduction in GHG emissions, increased use of SAF would have a net benefit in combating global climate change. As stated in Chapter 1, DOE's financial support of MRL's Project would help bring renewable diesel and SAF to market and into greater use, thereby reducing overall national emissions of air pollutants and human-caused GHGs.

Project-related CO_2e Emission Impacts

In general, rising GHG concentrations result in increases in atmospheric temperature, changes in precipitation, increases in the frequency and intensity of some extreme weather events, and rising sea levels. These climate-change impacts endanger human health by affecting food and water sources, air, weather, and human interactions with the built and natural environments. As the climate continues to change, the risks to human health continue to grow. Across the U.S., people and communities differ in their exposure, inherent sensitivity, and adaptive capacity to respond to and cope with climate change–related health threats. Vulnerability to climate change varies across time and location, across communities, and among individuals within communities.

The Project is expected to generate GHG emissions during construction, but these would be temporary and minor. Once it is fully operational, the Project is expected to emit 641,647 tpy of carbon dioxide equivalent (CO_2e) annually (calculated using GHG global warming potentials from the Intergovernmental Panel on Climate Change Fourth Assessment Report). The demand for aviation fuel is increasing, and although the Project would contribute to anthropogenic atmospheric levels of GHG, the expected GHG emissions associated with producing the same quantity of aviation fuel by conventional refining methods would be far greater (U.S. Department of Energy n.d.b).[1] In a GHG comparison for the Project, Ramboll determined that renewable diesel and SAF may result in 64 percent and 53 percent lower CO_2e emissions, respectively, than equivalent amounts of conventional fossil diesel and jet fuel on a kilogram-per-million-British-thermal-units basis (Ramboll 2024b). The evaluation used published life-cycle pathway resourcing, transportation, and combustion data for conventional and renewable feedstocks in the emissions calculations and showed that the Project's incremental production of renewable diesel and SAF would see a reduction in GHG emissions of approximately 1,022 million kilograms of CO_2e per year (diesel) and 196 million kilograms of CO_2e per year (SAF). In general, the potential benefits associated with reducing CO_2 emissions would support a reduction in GHG concentrations and reduce the associated climate-change impacts (e.g., increases in atmospheric temperature, changes in precipitation, increases in the frequency and intensity of extreme weather events, rising sea levels). Because the Project would support net GHG emissions reductions through the development of RD and SAF, impacts on atmospheric GHG levels and climate change would be beneficial in the long term.

[1] SAF has the potential to reduce GHG emissions by up to 94 percent compared to conventional jet fuel.

3.11.4 Noise

Construction of the Project would result in temporary additional noise at the Plant that would be limited to daytime hours, in accordance with local ordinances. Post-construction, the Project would not significantly affect ambient noise levels because the Project site is within an active refinery and surrounded by multiple sources of human-induced noise. In addition, portions of refining processes would be conducted within enclosed buildings. Employees working inside the buildings would be protected from noise and hearing impacts through participation in MRL's Hearing Conservation Program. The commercial development near 421 3rd Street N would be completed before construction of the Proposed Action. Other developments in the region would also result in temporary construction noise from vehicles and equipment but such development would not be expected to permanently increase ambient noise levels. Temporary construction activities associated with the Project and with other planned development would temporarily increase ambient noise within the Heavy Industrial area; however, given that the Project and other reasonably foreseeable actions are not anticipated to significantly increase ambient noise levels on a permanent basis, cumulative impacts related to noise as a result of the Project and reasonably foreseeable actions would not be significant.

3.11.5 Transportation

Construction and full operation of the Project would add up to five tanker truck trips, approximately 46 employee roundtrips, and approximately 35 railcars per day at the Plant. With no identified significant expansion involving other projects or existing infrastructure in the reasonably foreseeable future, the volume of vehicle traffic would remain relatively static. However, there could be additional temporary traffic from other development in areas near the Plant that could cause temporary congestion on surface streets. Given the slight permanent increase in traffic at the Plant and the static and temporary nature of other transportation impacts associated with the identified reasonably foreseeable actions, cumulative impacts on transportation as a result of the Project and reasonably foreseeable actions would not be significant.

4. DRAFT MITIGATED FINDING

Based on this EA, DOE has determined that providing a federal loan guarantee to Montana Renewables, LLC, to convert a portion of the existing CMR refinery in the city of Great Falls, Montana, into a renewable fuels and biomass energy facility to produce RD and SAF will not have a significant effect on the human environment, provided that Montana Renewables, LLC, adheres to the MDEQ permitting and consultation process provided in Section 2.2 and Section 3.5.2 and obtains final air operating permits in a timely manner. Incorporation of emission control technologies into the final design and operation in consultation and coordination with MDEQ will mitigate potential air quality impacts. The permit status reports, final design, and emission levels provided by MRL to LPO in accordance with the Mitigation Action Plan (see Appendix C) will enable LPO to monitor progress and ensure impacts on air quality will not be significant. Preparation of an environmental impact statement is therefore not required, and DOE is issuing this Mitigated FONSI.

This Mitigated FONSI should not be construed as a final decision about the issuance of a loan guarantee.

_____ _____

Todd Stribley Date

NEPA Compliance Officer

DOE Loan Programs Office

5. LIST OF PREPARERS

Name	Project Role	Company	Qualifications	Years of Experience
Anna Eskridge	Loans Program Office	DOE	Ph.D., Policy Studies M.A., Geography B.S., Environmental and Natural Resources	16
Don Brown	Loans Programs Office	DOE	B.S., Geography (Urban Studies) M.S., Urban and Regional Planning	27
Elyse Mize	Loans Programs Office	DOE	B.S., Natural Resource Management	14
Karen Simpson	Project Manager	Kleinfelder	B.S., Biology	24
Dawn Martin	NEPA Planner	Kleinfelder	B.S., Natural Resources M.S., Wildlife Biology	26
Amal Hijazi	Air Quality Subject Matter Expert	Kleinfelder	B.S., Environmental, Population, and Organismic Biology M.S., Environmental Science	30
Annie Daniel	NEPA Planner	Kleinfelder	B.A., English Writing M.S., Applied Science, Environmental Policy and Management	15
Francesca Fernandez	NEPA Planner	Kleinfelder	B.S., Environmental Science	4
Alex Leonard	GIS	Kleinfelder	B.S., Geography and GIS	12
Charles Prokop	NEPA Planner	Kleinfelder	B.S., Geography Resource and Environmental Studies	4

6. REFERENCES

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APPENDIX A AGENCY AND TRIBAL CONSULTATION

Appendix A - Agency and Tribal Correspondence

Organization	Contact Date	Summary of Contact
Montana Legislative Environmental Policy Office, Environmental Quality Council	January 17, 2024	Intent to Prepare an Environmental Assessment
Apache Tribe of Oklahoma*	January 18, 2024	Notification of Federal Project per NHPA Section 106
Apache Tribe of Oklahoma*	January 18, 2024	Notification of Federal Project per NHPA Section 106
Crow Tribe of Montana*	January 18, 2024	Notification of Federal Project per NHPA Section 106
Fort Belknap Indian Community*	January 18, 2024	Notification of Federal Project per NHPA Section 106
Little Shell Tribe of Chippewa Indians of Montana*	January 18, 2024	Notification of Federal Project per NHPA Section 106
Montana State Historic Preservation Office	June 12, 2024	Section 106 Consultation Initiation Letter
	July 10, 2024	SHPO Concurrence with Determination of Eligibilities and Determination of No Adverse Effect to Historic Properties.
*An individual letter was submitted to each Tribe. To reduce the file size and the overall number of pages, the letter to the Crow Tribe of Montana is included as an example, and all responses are included.		

Department of Energy
Washington, DC 20585

January 17, 2024

Trevor Graff
Legislative Research Analyst
Legislative Environmental Policy Office, Environmental Quality Council
P.O. Box 201704
Helena, Montana 59620-1704

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to Montana Renewables, LLC (MRL) for a Renewable Fuels and Biomass Energy Facility in Great Falls, Montana

Dear Mr. Graff,

Title XVII of the Energy Policy Act of 2005 (EPAct) established a Federal loan guarantee program for certain projects that employ innovative technologies and authorizes the Secretary of Energy to make loan guarantees available for those projects. Montana Renewables, LLC (MRL) has applied for a loan guarantee pursuant to the U.S. Department of Energy's (DOE's) Clean Energy Financing Program, authorized by the EPAct. DOE is evaluating whether to provide a Federal loan guarantee to MRL to support the proposed conversion of a portion of an existing refinery into a renewable fuels and biomass energy facility in the City of Great Falls, Cascade County, Montana (the Project).

The DOE Loan Programs Office (LPO) is preparing an Environmental Assessment (EA) for the Project. The decision to prepare an EA for the Project was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] parts 1500-1508), and DOE's implementing regulations for compliance with NEPA (10 CFR part 1021). The purpose and need for agency action is to comply with DOE's mandate under Title XVII of the EPAct to select projects that meet the goals of the EPAct. The primary goal of the Clean Energy Financing Program is to finance projects and facilities in the United States that employ innovative and renewable or efficient energy technologies that avoid, reduce, or sequester anthropogenic emission of greenhouse gases. The DOE LPO has determined that the Project, as proposed by MRL, is eligible pursuant to Section 1706 of the EPAct and that it complies with DOE's mandate as defined in the EPAct.

The Project would be co-located with an existing conventional petroleum refinery at 1900 10th Street NE in Great Falls, Montana (see Figure 1). Under the Project, MRL would use Federal financial assistance to purchase renewable diesel and sustainable aviation fuel (SAF) refinery equipment, construct new infrastructure, and retrofit existing equipment within the boundaries of the existing refinery on previously disturbed land (see Figure 2). The proposed renewable fuels and biomass energy facility would process 100 percent

renewable feedstocks (such as canola oil, distillers corn oil, used cooking oil, and beef tallow) into renewable diesel and SAF, hydrogen, natural gas, and renewable naphtha.

New infrastructure would include an approximately 300,000 gallon/day capacity feedstock pre-treatment unit (PTU) wastewater treatment facility to maximize water recycling; a 20-megawatt (MW) gas turbine/heat recovery steam generator (HSRG) co-generation (cogen) plant to produce electricity and steam from renewable fuels; an approximately 10,000 barrel per day (BPD) SAF blending facility within the existing tank farm; and a SAF truck loading facility within the existing truck loading rack.

Major equipment modifications would include retrofitting the existing steam methane reforming (SMR) hydrogen plant to accept renewable offgas and/or naphtha as feedstock for producing renewable hydrogen; installing a pre-reformer reactor with heat exchangers adjacent to the existing natural gas SMR hydrogen plant; installing advanced compression controls on the multi-stage makeup hydrogen reciprocating compressors to minimize energy wasting spillback streams between stages; installing new equipment (including a second reactor) on the existing Renewable Fuels Unit to increase overall capacity to approximately 24,000 BPD; and retrofitting the feedstock PTU to increase capacity to approximately 20,000 BPD.

The DOE NEPA implementing regulations provide for the notification of host states of NEPA determinations and for the opportunity for host states to review EAs prior to DOE approval. This process is intended to improve coordination and facilitate early and open communication.

If you or your staff would like to receive further information concerning this project or DOE's NEPA process, please contact me at 202-578-4573, or via email at LPO_Environmental@hq.doe.gov.

Sincerely,

ELYSE MIZE Digitally signed by ELYSE MIZE Date: 2024.01.17 11:00:57 -05'00'

Elyse Mize
NEPA Document Manager
Loan Programs Office

Attachments:
Figure 1: Renewable Fuels and Biomass Facility Project Location
Figure 2: Renewable Fuels and Biomass Facility Conceptual Layout

Figure 1. Renewable Fuels and Biomass Facility Project Location

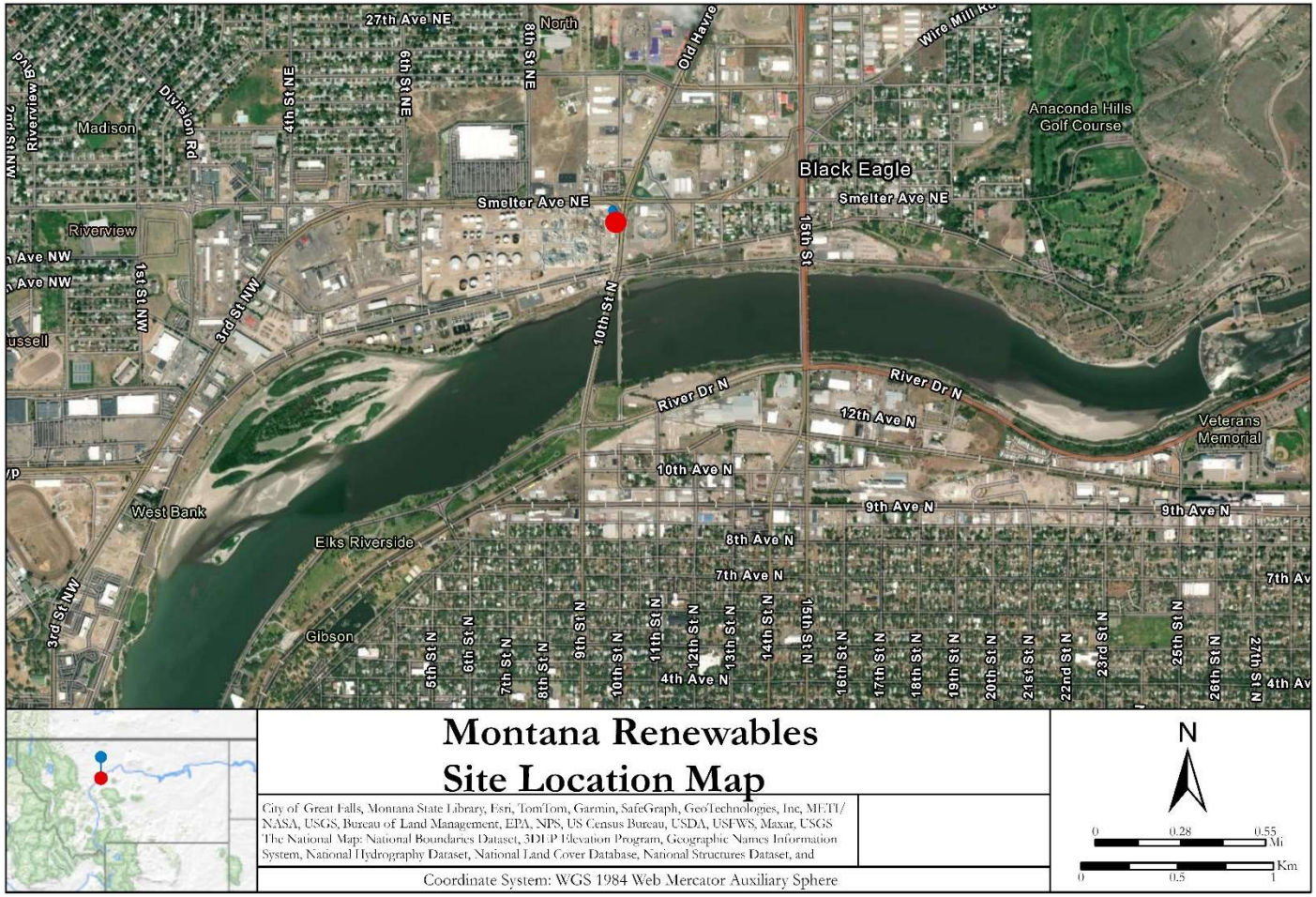
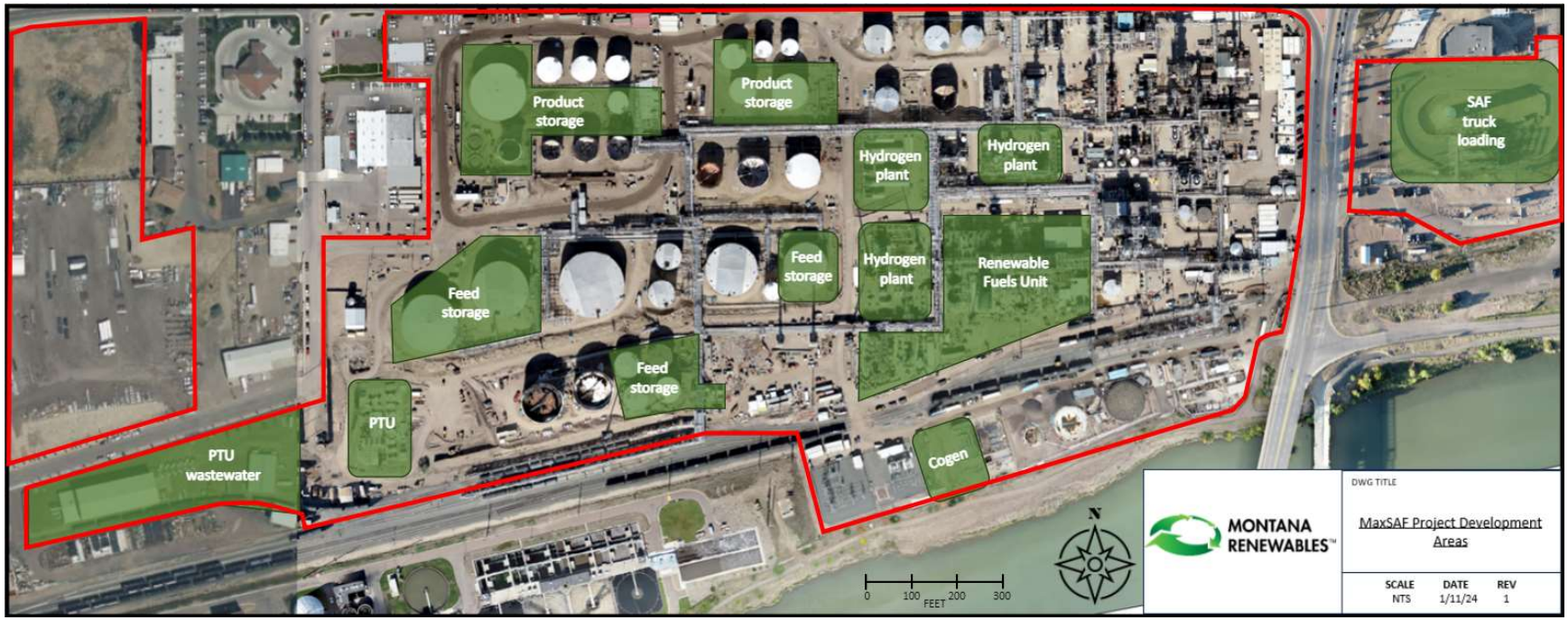


Figure 2. Renewable Fuels and Biomass Facility Conceptual Layout



Department of Energy
Washington, DC 20585

January 18, 2024

Chairman Frank Whiteclay
Crow Tribe of Montana
Batacheeche Avenue
Crow Agency, Montana 59022

SUBJECT: U.S. Department of Energy, Montana Renewables, LLC. Renewable Fuels and Biomass Energy Facility in Great Falls, Montana

Dear Chairman Whiteclay,

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) pursuant to the National Environmental Policy Act (NEPA) to assist in determining whether to issue a Federal loan guarantee to Montana Renewables, LLC (MRL) to support the proposed conversion of a portion of an existing refinery into a renewable fuels and biomass energy facility in the City of Great Falls, Montana (the Project). DOE has determined that issuance of this loan guarantee constitutes an undertaking subject to Section 106 of the National Historic Preservation Act (NHPA). Therefore, as a part of this environmental review process, DOE is also conducting a historic resource review in compliance with Section 106 of the NHPA.

The Project would be co-located with an existing conventional petroleum refinery at 1900 10th Street NE in Great Falls, Montana (see Figure 1). Under the Project, MRL would use Federal financial assistance to purchase renewable diesel and sustainable aviation fuel (SAF) refinery equipment, construct new infrastructure, and retrofit existing equipment within the boundaries of the existing refinery on previously disturbed land (see Figure 2). The proposed renewable fuels and biomass energy facility would process 100 percent renewable feedstocks (such as canola oil, distillers corn oil, used cooking oil, and beef tallow) into renewable diesel and SAF, hydrogen, natural gas, and renewable naphtha. Based on preliminary estimates, the Project would generate approximately 50 jobs.

New infrastructure would include an approximately 300,000 gallon/day capacity feedstock pre-treatment unit (PTU) wastewater treatment facility to maximize water recycling; a 20-megawatt (MW) gas turbine/heat recovery steam generator (HRSG) co-generation (cogen) plant to produce electricity and steam from renewable fuels; an approximately 10,000 barrel per day (BPD) SAF blending facility within the existing tank farm; and a SAF truck loading facility within the existing truck loading rack.

Major equipment modifications would include retrofitting the existing steam methane reforming (SMR) hydrogen plant to accept renewable offgas and/or naphtha as feedstock

for producing renewable hydrogen; installing a pre-reformer reactor with heat exchangers adjacent to the existing natural gas SMR hydrogen plant; installing advanced compression controls on the multi-stage makeup hydrogen reciprocating compressors to minimize energy wasting spillback streams between stages; installing new equipment (including a second reactor) on the existing Renewable Fuels Unit to increase overall capacity to approximately 24,000 BPD; and retrofitting the feedstock PTU to increase capacity to approximately 20,000 BPD.

This letter is intended to notify you of the proposed Federal project (a potential loan guarantee to MRL), identify if you have an interest in the Project site, and provide you with the opportunity to comment and engage DOE in government-to-government consultation on the Project. Any comments or concerns you provide will help ensure that DOE considers Tribal interests and complies with its NEPA and NHPA Section 106 responsibilities. We want to give you the opportunity to raise any issues or concerns you may have regarding the site.

I would greatly appreciate notification if you do or do not have an interest in the project site, as well as any comments or concerns you may have, within thirty (30) days of receipt of this letter (February 19, 2024). Should you have an interest in the project site, I will provide you with additional information pursuant to NEPA and the NHPA as it becomes available. Please provide your notification of interest and any comments or concerns by email at lpo_environmental@hq.doe.gov, or contact me at 202-578-4573.

Respectfully,

ELYSE MIZE Digitally signed by ELYSE MIZE
Date: 2024.01.18 15:16:27 -05'00'

Elyse Mize
NEPA Document Manager
Loan Programs Office

Attachments:

Figure 1: Renewable Fuels and Biomass Facility Project Location
Figure 2: Renewable Fuels and Biomass Facility Conceptual Layout

cc: Aaron Brien, Tribal Historic Preservation Officer

Figure 1. Renewable Fuels and Biomass Facility Project Location

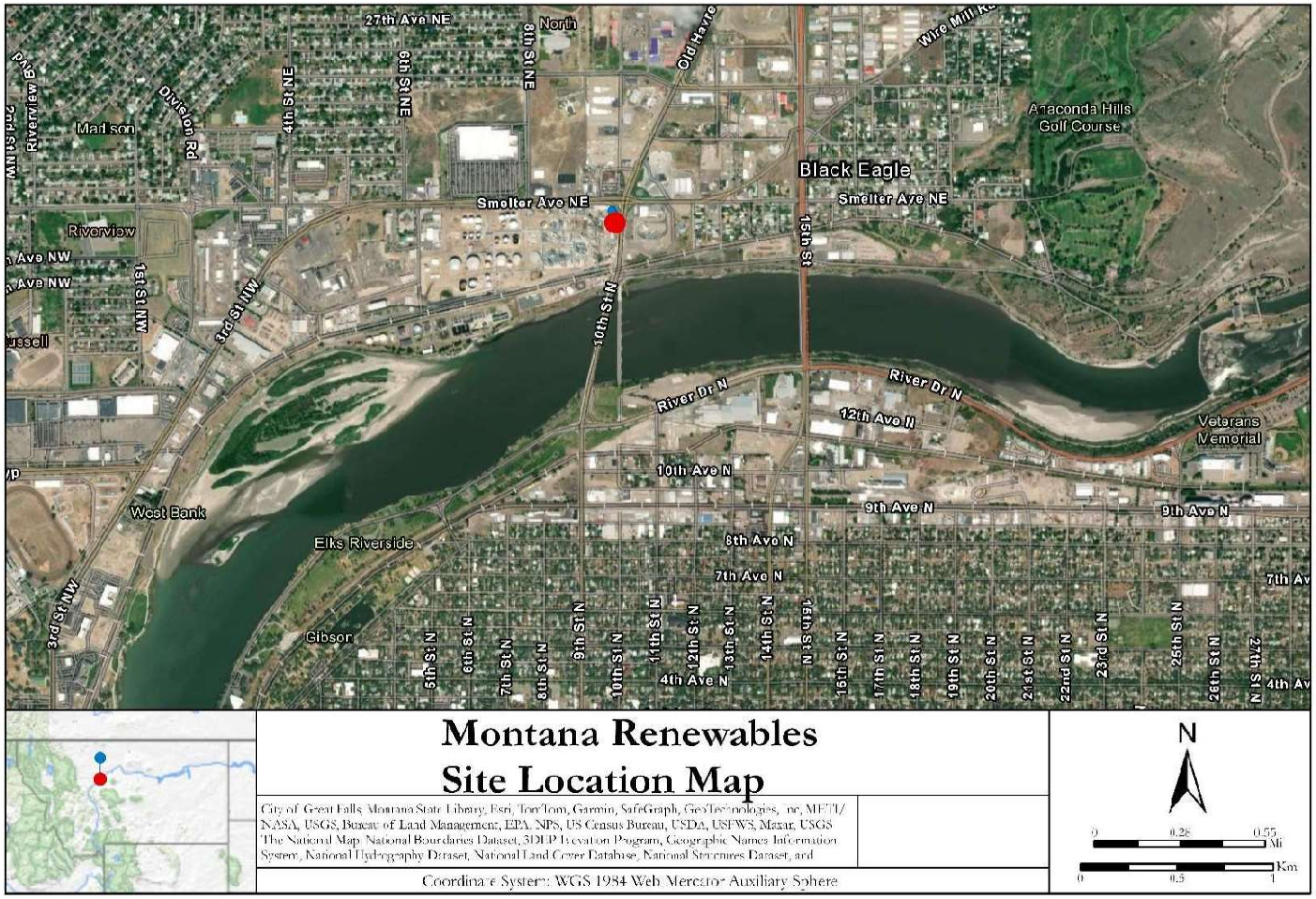
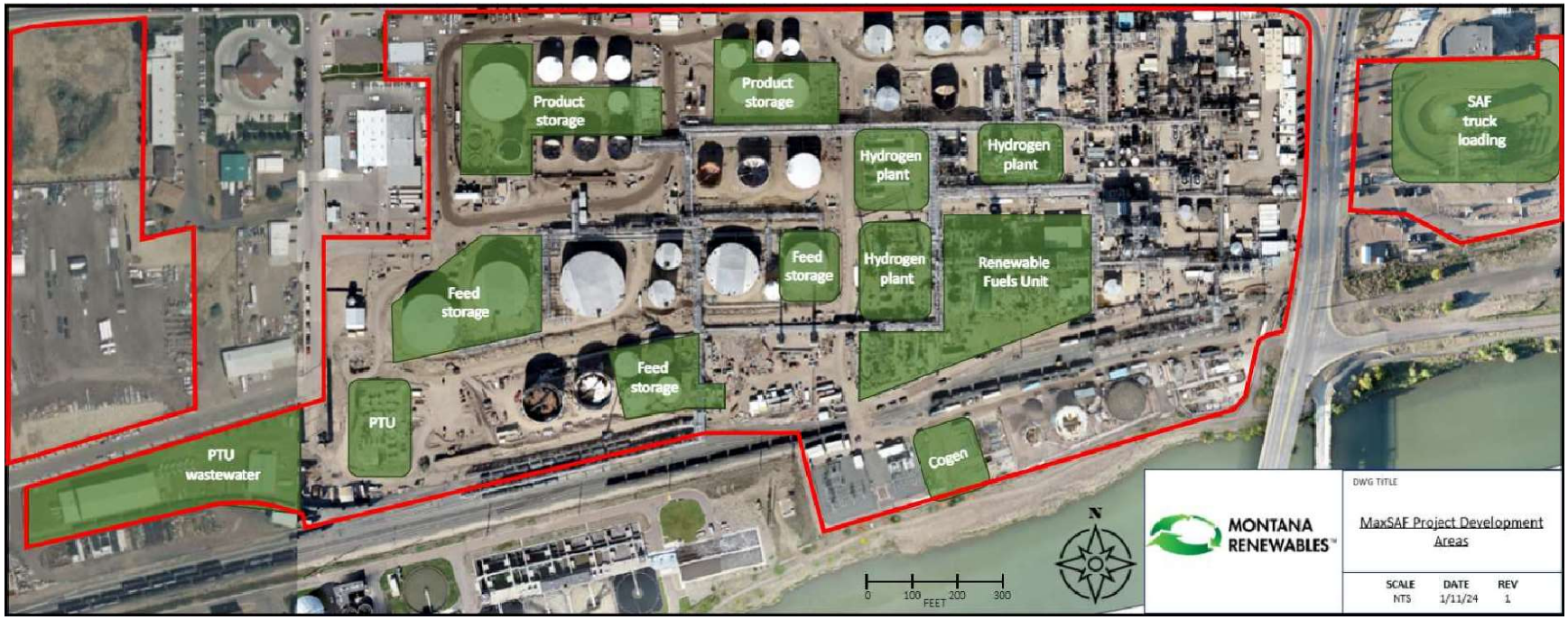


Figure 2. Renewable Fuels and Biomass Facility Conceptual Layout



Department of Energy
Washington, DC 20585

June 12, 2024

Pete Brown
Montana State Historic Preservation Office
225 North Roberts
PO Box 201201
Helena, MT 59620-1201

SUBJECT: U.S. Department of Energy, Montana Renewables, LLC; Section 106 Initiation

Dear Mr. Brown:

Pursuant to its authority under Title XVII of the Energy Policy Act of 2005 (EPAct) which established a federal loan guarantee program for certain projects that employ innovative technologies and authorizes the Secretary of Energy to make loan guarantees available for those projects, the U.S. Department of Energy (DOE), Loan Programs Office (LPO) is evaluating whether to provide a Federal loan to Montana Renewables, LLC (MRL) to support the proposed Renewable Fuels and Biomass Energy Facility in Great Falls, Montana (DOE's proposed action and undertaking). The purpose of this letter is to consult with the Montana State Historic Preservation Office under Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR part 800, present the DOE undertaking, present the archaeological and architectural areas of potential effects (APE), present DOE's findings, and seek your concurrence with the delineation of the APEs, the recommendations of eligibility for newly recorded resources, and DOE's recommendation of effect on historic properties.

DOE Undertaking and APE

The Undertaking would be co-located with an existing conventional petroleum refinery at 1900 10th Street NE in Great Falls, Montana (see Figure 1). Under the Undertaking, MRL would use Federal financial assistance to purchase renewable diesel and sustainable aviation fuel (SAF) refinery equipment, construct new infrastructure, and retrofit existing equipment within the boundaries of the existing refinery on previously disturbed land (see Figure 2). The proposed renewable fuels and biomass energy facility would process 100 percent renewable feedstocks (such as canola oil, distillers corn oil, used cooking oil, and beef tallow) into renewable diesel and SAF, hydrogen, natural gas, and renewable naphtha.

New infrastructure would include an approximately 300,000 gallon/day capacity feedstock pre-treatment unit (PTU) wastewater treatment facility to maximize water recycling; an 18-20-megawatt (MW) gas turbine/heat recovery steam generator (HSRF) co-generation (cogen) plant to produce electricity and steam from renewable fuels; an approximately 10,000 barrel per day (BPD) SAF blending facility within the existing tank farm; a SAF truck loading facility within the existing truck loading rack; and approximately 500-feet of track along the existing rail spur and loading/offloading rail car area in the southeastern portion of the refinery.

Major equipment modifications would include retrofitting the existing steam methane reforming (SMR) hydrogen plant to accept renewable offgas and/or naphtha as feedstock for producing renewable hydrogen; installing a pre-reformer reactor with heat exchangers adjacent to the existing natural gas SMR hydrogen plant; installing advanced compression controls on the multi-stage makeup hydrogen reciprocating compressors to minimize energy wasting spillback streams between stages; installing new equipment (including a second reactor) on the existing Renewable Fuels Unit to increase overall capacity to approximately 24,000 BPD; and retrofitting the feedstock PTU to increase capacity to approximately 20,000 BPD.

The area of potential effects (APE) for the undertaking includes the Direct (archaeological) APE, which comprises the area of potential ground disturbance and any property, or any portion thereof, that will be physically altered or destroyed by the undertaking. Accordingly, the Direct APE is the approximately 56 acre co-located renewable fuels facility and conventional petroleum refinery. The APE also includes the Indirect APE (architectural), which consists of the area in which the Undertaking has the potential to introduce visual elements that diminish or alter the setting, including the landscape, where the setting is a character-defining feature of a historic property (see Figure 3). Accordingly, the Indirect (architectural) APE is comprised of approximately 15.7 acres adjacent to the Direct APE. Factors such as the design of the undertaking, the density of the surrounding built environment, and the presence of mature trees were taken into consideration when defining the Indirect APE.

DOE Finding

In accordance with Section 106 to identify historic properties and assess adverse effects, DOE has reviewed the *Cultural Resources Technical Report for the Montana Renewables LLC Renewable Fuels Facility, Great Falls, Montana* dated June 2024 (attached with this letter).

Based on the results of the field survey and historical research, four previously unrecorded buildings and structures that have reached sufficient age for consideration as historic properties and one previously recorded property that was recommended eligible for listing on the NRHP (24CA0371, Great Northern Railway) are located within the direct APE. Kleinfelder concurs with the previous recommendation that the Great Northern Railway is eligible for listing in the NRHP; however, the recoded segment within the direct APE does not appear to retain sufficient historic integrity to convey its historical significance and is therefore not recommended to be a historic property for the purposes of Section 106 of the NHPA. Kleinfelder recommends that Calumet Refinery-Building 1 (24CA1975) and Building 2 (24CA1976) are eligible for the NRHP under Criterion A for their association with the important role the Calumet Refinery played in shaping the development of Montana's oil industry and the impact it had on the industrial and economic growth of Great Falls. Despite the alterations over time, the changes to Calumet Refinery-Building 1 (24CA1975) and Building 2 (24CA1976) are seen as a record of their continued use over time, preserving several critical aspects of integrity, and justifying its eligibility for the National Register of Historic Places (NRHP). Therefore, they are both recommended to be historic properties for the purposes of Section 106 of the NHPA. DOE seeks your concurrence with this recommendation.

Based on the undertaking description, there will be no physical modifications of any kind made to Calumet Refinery-Building 1 (24CA1975) and Building 2 (24CA1976) as a result of this undertaking and therefore, the undertaking will have no direct effect on the buildings. The refinery itself has undergone many changes over time, and any additional exterior physical changes to the other buildings and structures at the refinery or the construction of new buildings and structures will not result in an adverse effect to Calumet Refinery-Building 1 (24CA1975) and Building 2 (24CA1976). Based on this analysis, Kleinfelder recommends that there is a no adverse effect to the historic properties present within the direct APE. DOE seeks your concurrence with this recommendation.

Kleinfelder conducted a review of the indirect APE, extending from the direct APE one parcel in all directions for this undertaking. Four historic-era resources were identified within the indirect APE (24CA1972, 24CA1973, 24CA1974, and 24CA1979). All four resources were evaluated for the NRHP and are recommended ineligible for inclusion in the NRHP and are therefore not recommended to be historic properties for the purposes of Section 106 of the NHPA. Three previously recorded built environment resources are within the indirect APE (24CA1368, 24CA1346, and 24CA1345). Based on field observations, these three previously recorded resources are no longer extant. Two archaeological resources are located within the indirect APE (24CA1751 and 24CA0656). These are subsurface archaeological resources and, therefore; there will not be potential to indirectly effect these historic properties. Based on this analysis, Kleinfelder recommends that there is a no adverse effect to the historic properties present within the indirect APE. DOE seeks your concurrence with this recommendation.

The report concluded that two newly recorded properties eligible for the NRHP are located within the direct APE (Calumet Refinery-Building 1 and Building 2) and that two previously recorded historic properties (24CA1751 and 24CA0656) are located within the indirect APE. The DOE recommends that Calumet Refinery-Building 1 and Building 2 are both eligible for the NRHP and that the proposed undertaking will result in no adverse effect to these two properties or to 24CA1751 and 24CA0656. DOE recommends that the undertaking will have no adverse effect on historic properties and is requesting the SHPO's concurrence.

We look forward to SHPO’s concurrence on the APE, the eligibility of the newly recorded sites, and on DOE’s recommendation of no adverse effect on historic properties. If you have any questions or would like to discuss this project further, please contact me at 202-913-3477, or email at lpo_environmental@hq.doe.gov.

Respectfully,

DONALD BROWN Digitally signed by DONALD BROWN
Date: 2024.06.12 16:15:43 -04'00'

Don Brown
NEPA Document Manager
Loan Programs Office

Attachments:
Figure 1: Project Location

Figure 2: Conceptual Layout
Figure 3: Area of Potential Effects
Cultural Resources Technical Report for the Montana Renewables LLC Renewable Fuels Facility, Great Falls, Montana, June 2024

Cc: Jessica Bush, Office of the State Archaeologist

Date: 2/8/2024 User: ALeonard Path: \\azrgisstorp03\GIS_Projects\Client\CalumetSpecialtyProducts\24002066\CalumetEA\CalumetEA.aprx

LEGEND

★ Site Location

0 1,000 2,000 4,000

Feet

N

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PROJECT NO.	24002066
CREATED:	2/8/2024
CREATED BY:	ALeonard
CHECKED BY:	KSimpson
FILE NAME:	ProjectLocationMap

Project Location Map

Montana Renewables
Cascade County, Montana

FIGURE 1

LEGEND

- MaxSAF Project Development Areas
- Plant Boundary

0 125 250 500

Feet

N

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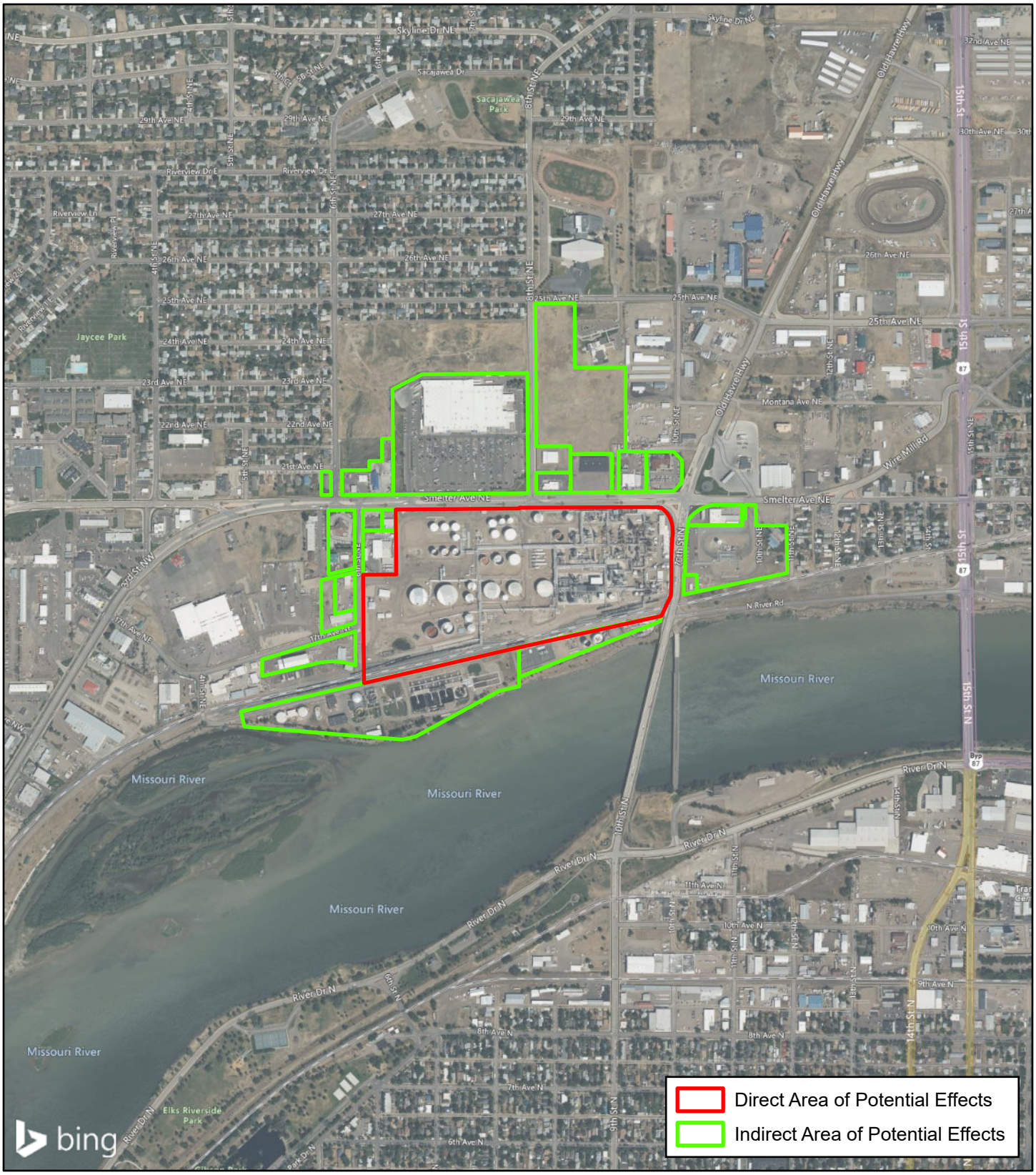
CREATED BY:	ALeonard
CHECKED BY:	KSimpson
FILE NAME:	DevelopmentAreas

Renewable Fuels and Biomass Facility Conceptual Layout

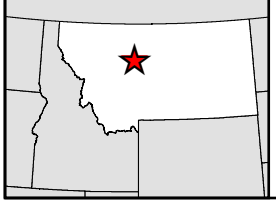
Montana Renewables
Cascade County, Montana

FIGURE
2

Date: 3/21/2024 User: ALeonard Path: \\azrgisstorp03\GIS_Projects\Client\CalumetSpecialtyProducts\24002066\CalumetEA\CalumetEA.aprx



Project Location



Source: Bing Maps

0 500 1,000 Feet

0 150 300 Meters

N

Scale 1:12,000
1 inch = 1,000 feet

Figure 3: Area of Potential Effects
Calumet Refinery Project
Cascade County, Montana

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Montana State Historic Preservation Office
225 N. Roberts St.
P.O. Box 201201
Helena, MT 59620-1201

July 10, 2024

Mr. Don Brown
Department of Energy – Loan Program Office
Washington, DC 20585

Re: Montana Renewables, LLC Project / Cascade County, Montana

Dear Mr. Brown,

Thank you for your letter and associated materials (received March 27, 2024) and additional material (received June 12, 2024) regarding the proposed Montana Renewables, LLC Project in Cascade County, Montana. We concur with the following eligibilities:

24CA1975 – Eligible (A)	24CA1976 – Eligible (A)	24CA1977 – Not Eligible
24CA1978 – Not Eligible	24CA1972 – Not Eligible	24CA1973 – Not Eligible
24CA1974 – Not Eligible	24CA1979 – Not Eligible	

We also concur with your determination of No Adverse Effects to Historic Properties.

Please note that our concurrence does not substitute for a good faith effort to consult with interested parties, local government authorities, and American Indian tribes. If you receive a comment that substantially relates to a historic property located within or adjacent to the Area of Potential Effect, please submit it to our office for review. Include documentation of how the comment was addressed. If you have any questions or concerns, do not hesitate to contact me at (406) 444-6485 or Samantha.Gilk@MT.gov. Thank you for consulting with us.

Sincerely,

Samantha Gilk, M.S.
Compliance Officer
Montana State Historic Preservation Office

FILE: DOE/GENERAL – 2024 – 20240614002

APPENDIX B PERMITTING

APPENDIX B: PERMITTING

The permits required for construction of Phase 1 were issued by the MDEQ following public notice and comment periods. There was no community opposition during public comment periods, and the state has continued to be supportive of the renewables Facility.

Table B-1 provides a summary of the environmental permits CMR and MRL currently hold for the Plant.

Table B-2 identifies additional permits required for construction and operation of the renewables Facility, including Phase 2 construction and operation.

Table B-1: Applicable CMR and MRL Facility Construction and Operational Permits

Agency	Permit	Notes*
MDEQ – Air Quality Bureau	Title V Operating Permit for CMR	■ 3/31/20 – OP2161-15 – Update for NO_x limit changes. ■ 12/11/20 – OP2161-16 – complete update. ■ 6/23/23 – OP2161-17 – Updated Title V operating permit for minor air emission limits updates within refinery sources.
	CMR MAQP Construction Permit	■ 2/10/20 – 2161-33 CMR for revised NO_x emission limits on 2102 and 4102 heaters (30-day average and 3-hour average emission limits). ■ 2/19/21 – 2161-34 CMR for AOC16 remediation catalytic oxidizer. ■ 8/30/21 – 2161-35 CMR for polymer-modified asphalt (PMA) process unit replacement and associated tank changes. ■ 10/22/21 – 2161-36 CMR transfer of air emissions sources to MRL and operational changes at CMR. ■ 4/28/22 – 2161-37 CMR update to fix firing rates of various pieces of combustion equipment. ■ 11/9/22 – 2161-38 CMR update for PMA and minor update for refinery reconfiguration with renewable transfers. ■ 5/10/23 – 2161-39 CMR update for consent decree NO_x limits correction, ambient station shutdown approval, and consent decree citation corrections.
	MRL MAQP Construction Permit (permit applicable to Phase 1 construction and operation)	■ MRL currently operating under construction permit. MAQP construction permits authorize both construction and operation of the equipment. ■ 10/26/21 (5263-00) – MRL construction permit and air emissions source transfer from CMR to MRL. ■ 7/11/22 (5263-01) – MRL permit for PTU construction and sustainable aviation fuel project integration. ■ 11/7/2023 (5263-02) – MRL permit for increased heater firing rates and addition of new boilers and generators. ■ Title V permit application submitted 11/3/23. The Title V permit modification application to incorporate Phase 2 will be submitted within 6 months of start of operations.
MDEQ – Montana Pollutant Discharge Elimination System	Calumet Industrial Wastewater Discharge Permit	■ 12/7/16 – Permit #01-17, industrial wastewater discharge permit for the low-sulfur fuels expansion. ■ 2/14/22 – Permit #01-22, industrial wastewater discharge permit for the conversion of mild hydrocracker to renewable fuels unit; no significant limit changes or new categorical standards.
	Multi-Sector General Industrial Stormwater Permit	■ 4/13/23 – Issued an updated MTR000556 for multi-sector general industrial stormwater permit for CMR and MRL operations.

*Any permits with expiration dates would be renewed by CMR/MRL in accordance with the relevant regulation(s).

Table B-2: Additional Permits Required for Max SAF Production at MRL

Agency	Permit	Status/Schedule
MDEQ	Clean Air Act Title V Operating Permit	MDEQ received initial application for Phase 1 on 11/3/2023. Project changes would require an update to the application within 6 months of start-up of new sources.
City of Great Falls	Wastewater Pretreatment Permit #01-22	Application for scope in development with Project.
City of Great Falls	Renewable PTU Wastewater Pretreatment Permit	Process water condition and appropriate pretreatment system in design.
MDEQ	Multisector General Industrial Stormwater Permit	Requirement in Project scope review. Minimal changes to fence line or off-site sheet discharge points will require no update.
MDEQ	MRL MAQP for Max SAF	Draft PTE developed by MRL; working on preparation of draft application pending completion of engineering required for preparation of the permit application. Engineering was in progress at the time of this EA and expected to be completed by Q2 of 2025 to a point that a permit application can be drafted. The application for a permit to construct can be submitted to MDEQ shortly thereafter. MRL environmental personnel will work closely with MDEQ; MRL engineering to finalize the construction permit. The permit to construct (and associated PSD permit, see below) will serve as a permit to operate for Phase 2 until a Title V operating permit is issued for Phase 2.
MDEQ	PSD Permit	MRL expects, from preliminary air emissions calculations, the Project will exceed PSD thresholds and that a PSD permit will be required for Phase 2 in addition to the MDEQ permit to construct. Process engineering sufficient for preparation of a PSD permit application; PSD analyses expected to be completed by Q2 of 2025. MRL expects to submit PSD permit application for phase 2 subsequent to completion of engineering design.
MDEQ	MRL Federal Title V Operating Permit Update for Max SAF	Within 6 months of Max SAF start-up, MRL will submit an application to modify the federal Title V operating permit for Phase 1 (pending issuance).

APPENDIX C MITIGATION ACTION PLAN

APPENDIX C: MITIGATION ACTION PLAN

This Mitigation Action Plan identifies mitigation measures applicable to the Renewable Fuels and Biomass Energy Facility Conversion Project by Montana Renewables, LLC, for the production of RD, SAF, hydrogen, renewable off-gasses (such as natural gas), and renewable naphtha. This Mitigation Action Plan is for the Proposed Action and includes integral elements and commitments made in the EA to mitigate potential adverse environmental impacts.

The Proposed Action includes commitments by MRL to design the Project in coordination with MDEQ so as to receive the appropriate air permits as planned and so emissions are protective of human health and the environment. To ensure this, MRL will provide LPO with routine status updates on Project designs and coordinate with MDEQ on air permitting, including the status of the Phase 1 Title V permit, Title V permit modifications associated with Phase 2, and the PSD permit (if applicable); a summary of permit conditions and control technologies incorporated into the final design will also be provided. The Mitigation Action Plan status reports will be provided 3 months after closure of the loan guarantee and continue quarterly through the air permits to construct, then semi-annually until MRL is in receipt of the operating air permits.

If you have any general questions about the Project, please contact the Project Manager Eldon Fink (direct telephone 281-406-1490 or Eldon.Fink@calumet.com). If you have questions about this Mitigation Action Plan, contact the LPO NEPA Document Manager for the environmental review, Don Brown (direct telephone 202-913-3477 or Donald.Brown@hq.doe.gov). You may also contact the LPO Environmental Monitoring Lead, Angela Ryan (direct telephone 240-220-4586 or Angela.Ryan@hq.doe.gov).

LPO may amend this Mitigation Action Plan if revisions are necessary due to new information or Project adjustments.