Prepared by:

US Department of Energy - National Energy Technology Laboratory

Pursuant to:

Office of Manufacturing and Energy Supply Chains and Office of Energy Efficiency and Renewable Energy Grant Opportunity - Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing (DE-FOA-0002678)

DOE/EA-2220D

Date:

July 2024

Draft Environmental Assessment

Group14 Technologies – Battery Active Materials Factory

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National Environmental Policy Act (NEPA) Compliance

Cover Sheet

Proposed Project:

Group14 proposes to construct a commercial-scale facility, referred to as Battery Active Materials Factory (BAM Factory), to produce a lithium-ion battery anode material for the growing electric vehicle (EV) market. Group14's product is a silicon-carbon composite material that improves energy density and reduces the cost of lithium-ion batteries. Group14 aims to install six process module buildings to meet a 12,000 metric ton per year capacity. The proposed project would enable the sourcing of critical battery materials from within the United States and reduce the dependence on foreign material suppliers. The proposed project would create more than 254 full-time jobs that offer benefits such as healthcare. Group14 also plans to offer community benefits to raise equity levels in the greater Moses Lake community. Together, these efforts would help revitalize the workforce and economy of the greater Moses Lake community for decades to come while significantly strengthening the US lithium-ion battery industry.

If approved, the Department of Energy's (DOE's) proposed action would provide $100,000,000 in funding toward the total project costs of $590,690,080. Group14's private cost share would be $490,690,080.

Type of Statement: Draft Environmental Assessment

Lead Agency: US Department of Energy; National Energy Technology Laboratory (NETL)

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Abstract:

Group14's product is a silicon-carbon composite material that improves energy density and reduces the cost of lithium-ion batteries. The proposed project site encompasses one parcel (number 091121653) in the northern section of the Central Terminal's Industrial Park, a planned industrial development in Moses Lake, Washington. Group14 aims to install six process module buildings, with production from the first module building occurring in mid-2024. Group14 anticipates a new process module will be completed and brought online in three months, with production ramping up through 2025. The production would primarily occur in modules approximately 135 feet wide by 312 feet long and range in height from 46 feet to 140 feet. Other supporting buildings would include an administrative building, operations building, utility building, solid waste storage building, and nitrogen plant. The installation of parking, stormwater infiltration pond, wastewater conveyance, various utilities, and other associated facilities would be constructed to support operations. The total site area of impact for all development is 46 acres.

The environmental analysis identified the most notable changes to result from the proposed project would occur in the following areas: surface water and groundwater, vegetation and wildlife, air quality, regulated wastes (solid and hazardous wastes), transportation and traffic, greenhouse gases, socioeconomics, environmental justice, utilities (i.e., water, wastewater, power), and public and occupational health and safety.

Public Participation:

DOE encourages public participation in the NEPA process. This Draft Environmental Assessment (EA) is being released for public review and comment. The public is invited to provide oral, written, or e-mail

comments on this Draft EA to DOE by the close of the comment period on August 27, 2024. Copies of the Draft EA are also being distributed to cognizant federal and state agencies and Tribal Nations. Comments received by the close of the comment period will be considered in preparing a Final EA for Group14's proposed project. Comments received after the end of the comment period will be addressed to the extent practicable. Comments should be marked "Group14 Draft EA Comments" and include name, address, and organization (if applicable). Individual names and addresses (including e-mail addresses) received as part of the public comment period normally are considered part of the public record. Persons wishing to withhold names, addresses, or other identifying information from the public record must state this request prominently at the beginning of their submitted comments. DOE will honor this request to the extent allowed by law. All submissions from organizations and businesses and individuals identifying themselves as representatives or officials of organizations or businesses will be included in the public record and open to public inspection in their entirety. The Draft EA is also available on the National Energy Technology Laboratory (NETL) website at https://netl.doe.gov/node/6939.

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APPENDICES

ACRONYMS AND ABBREVIATIONS

AFFF	Aqueous Film Forming Foams
AOI	Area of Interest
BACT	Best Available Control Technology
BAM Factory	Battery Active Materials Factory
bgs	Below ground surface
BIL	Bipartisan Infrastructure Law
BMP	Best management practice
CAA	Clean Air Act
CBP	Community Benefits Plan
Central Terminals	Central Terminals, LLC
CEJST	Climate and Economic Justice Screening Tool
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon monoxide
CSWGP	Construction Stormwater General Permit
CUB	Central utilities building
CWA	Clean Water Act
DAC	Disadvantaged communities
DOE	US Department of Energy
EA	Environmental Assessment
Ecology	Washington Department of Ecology
EDNA	Environmental Designation for Noise Abatement
EMS	Emergency Medical Services
EO	Executive Order
EPA	US Environmental Protection Agency
ESA	Endangered Species Act
EV	Electric vehicle
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FOA	Funding Opportunity Announcement
GHG	Greenhouse gas
gpd	Gallons per day
gpm	Gallons per minute
IDP	Inadvertent Discovery Plan
IPaC	Information for Planning and Consultation
kWh	Kilowatt hour
LOS	Level of Service
MLFD	Moses Lake Fire Department
MLPD	Moses Lake Police Department
NAAQS	National Ambient Air Quality Standard
NEPA	National Environmental Policy Act
NETL	National Energy Technology Laboratory
NO_2	Nitrogen dioxide
NOC	Notice of Construction
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O_3	Ozone
Pb	Lead
PHS	Priority Habitat and Species
PM	Particle Pollution
POTW	Publicly Owned Treatment Works
Ppb	Parts per billion

ppm	Parts per million
PSD	Prevention of Significant Deterioration
PUD	Public Utilities District
REC	Recognized environmental concern
SCC	Social Cost of Carbon
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	Sulfur dioxide
SWPPP	Stormwater Pollution Prevention Plan
$\mu g/m^3$	Micrograms per cubic meter
USFWS	US Fish and Wildlife Service
USDA	US Department of Agriculture
WAC	Washington Administrative Code
WDNR	Washington Department of Natural Resources
WDFW	Washington Department of Fish and Wildlife
WWTP	Wastewater Treatment Plant

1. INTRODUCTION AND PURPOSE AND NEED

1.1 Introduction

This Draft Environmental Assessment (EA) was prepared by the United States Department of Energy (DOE) - National Energy Technology Laboratory (NETL) pursuant to the National Environmental Policy Act of 1969 (NEPA) (Title 42, Section 4321 et. Seq., United States Code) and DOE's NEPA implementing procedures (Chapter 10, Part 1021, Code of Federal Regulations [CFR]) to evaluate the potential environmental and social impacts of DOE's proposed action to providing funding to Group14, Group14's proposed project, and the No Action Alternative. The purpose of this Draft EA is to provide the information needed to assess the potential environmental and social impacts associated with the proposed project to construct a commercial-scale facility to produce a lithium-ion battery anode material for the growing electric vehicle (EV) market.

1.2 Background

The Office of Manufacturing and Energy Supply Chains, in collaboration with the Office of Energy Efficiency and Renewable Energy, issued Funding Opportunity Announcement (FOA) DE-FOA-0002678. Projects awarded under the FOA will be funded, in whole or in part, with funds appropriated by the Infrastructure Investment and Jobs Act (USA 2021), also commonly known as the Bipartisan Infrastructure Law (BIL).

DOE prepared an environmental synopsis to evaluate and compare potential environmental impacts for each proposal that was deemed to be within the competitive range of proposals received in response to the FOA. The Department used the synopsis to evaluate appreciable differences in potential environmental impacts from those proposals. The synopsis included: (1) a brief description of background information for the Funding Opportunity area of interest, (2) a general description of the proposals DOE received in response to the Funding Opportunity Announcement and deemed to be within the competitive range, (3) a summary of the assessment approach DOE used in the initial environmental review to evaluate potential environmental impacts associated with the proposals, and (4) a summary of environmental impacts that focused on potential differences among the proposals. A copy of the environmental synopsis for this project developed for DE-FOA-0002678 is included in Appendix A.

DOE initially selected 21 projects under 12 topic areas of interest and provided cost-shared funding for project definition activities; all the projects are subject to the completion of project-specific NEPA reviews. DE-FOA-0002678 supports new, retrofitted, and expanded commercial-scale domestic facilities to produce battery materials, processing, and battery recycling and manufacturing demonstrations.

The applications reviewed under this FOA were selected for negotiations in October 2022. Twelve topic areas of interest (AOIs; Table 1) were included in the FOA, and each AOI outlined project objectives that were specific to that AOI. The 12 AOIs were separated according to the BIL sections 40207(b)(3)(A) and 40207(c)(3)(A). AOIs 1–3 and 6–11 are for commercial level projects, and AOIs 4, 5, and 12 are for demonstration level projects.

Table 1. Areas of Interest under DE-FOA-0002678

AOIs	Title
Battery Material Processing Grants pursuant to Section 40207(b)(3)(A)	
1	Commercial-scale Production Plants for Domestic Separation of Critical Cathode Battery Materials from Domestic Feedstocks
2	Commercial-scale Domestic Production of Battery-Grade Graphite from Synthetic and Natural Feedstocks
3	Commercial-scale Domestic Separation and Production of Battery-grade Precursor Materials (Open Topic)
4	Demonstrations of Domestic Separation and Production of Battery-grade Materials from Unconventional Domestic Sources
5	Demonstrations of Innovative Separation Processing of Battery Materials Open Topic
Battery Component Manufacturing and Recycling Grants pursuant to Section 40207(c)(3)(A)	
6	Commercial-scale Domestic Battery Cell Manufacturing
7	Commercial-scale Domestic Battery Cathode Manufacturing
8	Commercial-scale Domestic Battery Separator Manufacturing
9	Commercial-scale Domestic Next Generation Silicon Anode Active Materials and Electrodes
10	Commercial-scale Domestic Battery Component Manufacturing Open Topic
11	Commercial-scale Domestic Battery Recycling and End-of-Life Infrastructure
12	Domestic Battery Cell and Component Manufacturing Demonstration Topic

DOE selected the project proposed by Group14 under AOI 9 of DE-FOA-0002678 to support the construction of a commercial-scale facility to produce a lithium-ion battery anode material to meet the growing EV market. If approved, DOE's proposed action would provide $100,000,000 in funding toward the total project costs of $590,690,080. Group14's private cost share would be $490,690,080.

1.3 Purpose and Need for Department of Energy Action

The overall purpose and need for DOE action pursuant to the Office of Manufacturing and Energy Supply Chains in collaboration with the Office of Energy Efficiency and Renewable Energy program and the funding opportunity under the BIL is to accelerate the development of a resilient supply chain for high-capacity batteries by increasing investments in battery materials processing and battery manufacturing projects. The BIL investments in the battery supply chain will include five main steps including: (1) raw material production, (2) materials processing, including material refinement and processing, (3) battery material/component manufacturing and cell fabrication, (4) battery pack and end-use product manufacturing, and (5) battery end-of-life and recycling.

DOE considers Group14's proposed project and location to be one that can meet the focus of the BIL sections: a) creating and retaining good-paying jobs; b) supporting inclusive and supportive workforce development efforts to strengthen America's competitive advantage; c) ensuring that the United States has viable battery materials processing industry to supply the North American battery supply chain; d) expanding the capabilities of the United States in advanced battery manufacturing; e) enhancing national security by reducing the reliance of the United States on foreign competitors for critical materials and technologies; f) enhancing the domestic processing capacity of minerals necessary for battery materials and advanced batteries; and g) ensuring that the United States has a viable domestic manufacturing and

recycling capability to support and sustain a North American battery supply chain. The proposed project site was selected due to its location in an existing and developing industrial corridor, access to transportation infrastructure, public utilities, and its potential to have a positive economic impact on the Central Washington area.

DOE intends to further this purpose and satisfy this need by providing financial assistance under cost-sharing arrangements to this and the other 20 projects selected under DE-FOA-0002678. This and the other selected projects are needed to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis. This proposed project would meet the objective of recruiting, training, and retaining a skilled workforce in communities that have lost jobs due to the displacements of fossil energy jobs. This proposed project would also meaningfully assist in the nation's economic recovery by creating manufacturing jobs in the United States in accordance with the objectives of the BIL.

1.4 Broader DOE Goals, Initiatives, and Crosscutting Programs for the Clean Energy and Transportation Transition

DOE is also supporting the overall clean energy transition and sustainable, clean transportation sector by funding other program areas that will supplement and enhance the goals of DE-FOA-0002678. In particular, the goals of DOE's Office of Energy Efficiency and Renewable Energy's (EERE) Vehicle Technologies Office (VTO) include deploying electric vehicle charging stations throughout the United States, improving EV infrastructure, improving batteries, vehicles, and electric drive systems, and sustaining over 75 Clean Cities coalitions across the country. Clean Cities Coalitions near the Moses Lake, WA area include the Columbia-Willamette (https://cleancities.energy.gov/coalitions/columbia-willamette), Western Washington (https://cleancities.energy.gov/coalitions/western-washington), and Treasure Valley (https://cleancities.energy.gov/coalitions/treasure-valley) Clean Cities. These coalitions work with vehicle fleets, fuel providers, community leaders, and other stakeholders to identify community-driven choices that save energy and promote using alternative fuels and advanced vehicle technologies. Group14's proposed project would provide EV battery components that will support the goals of the clean energy and transportation sectors overall. More information about the Office of Energy Efficiency's Vehicle Technologies program can be found here: https://www.energy.gov/eere/vehicles/vehicle-technologies-office. Details specific to VTO's Batteries, Charging, and Electric Vehicle initiatives can be found here https://www.energy.gov/eere/vehicles/batteries-charging-and-electric-vehicles.

EERE also supports programs outside of the clean transportation sector and MESC that support the development of clean and sustainable alternative and renewable energy technologies, including solar, geothermal, water, and wind energy, advanced manufacturing, sustainable and efficient building technologies, and hydrogen/fuel cell technologies. Details of the programs and projects can be found on EERE's website at https://www.energy.gov/eere/office-energy-efficiency-renewable-energy.

All awards from these programs are subject to individual NEPA reviews to ascertain potential significant environmental, historic, and socioeconomic impacts before authorizing project activities. NEPA reviews requiring EAs or EISs, at a minimum, include consulting with tribal nations and state historic preservation offices potentially impacted by project activities.

DOE has committed to establishing a domestic supply chain for lithium-based batteries through these, and other programs and partnerships. In particular, DOE worked with other agencies and the Federal Consortium for Advanced Batteries to develop a "National Blueprint for Lithium Batteries." This blueprint outlines steps to ensure a domestic supply of lithium batteries and develop a robust and secure domestic industrial base. Goals include securing access to raw and refined materials, growing access to domestic materials for battery production, and enabling battery end-of-life reuse and recycling. Regarding water consumption, several factors go into the calculation of water usage (including variables like the materials a battery is composed of, the size of the battery, and the type of construction of a battery), but this Blueprint notes that the benefits of using recycled materials include the potential to decrease water use

by 77%. The Blueprint can be found at this link: https://www.energy.gov/sites/default/files/2021-06/FCAB%20National%20Blueprint%20Lithium%20Batteries%200621_0.pdf.

Additional details about how DOE is supporting the domestic battery supply chain can be found in the "Building a Robust and Resilient U.S. Lithium Battery Supply Chain" publication at this link: https://netl.doe.gov/sites/default/files/2023-03/Li-Bridge%20-%20Building%20a%20Robust%20and%20Resilient%20U.S.%20Lithium%20Battery%20Supply%20Chain.pdf

1.5 National Environmental Policy Act and Related Procedures

This EA is prepared in accordance with NEPA, as amended (42 USC 4321), the President's Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR 1021). This statute and the implementing regulations require that DOE, as a federal agency:

- Assess the environmental impacts of its proposed action;
- Identify any adverse environmental effects that cannot be avoided should the proposed action be implemented;
- Propose mitigation measures for adverse environmental effects, if appropriate;
- Evaluate alternatives to the proposed project, including a No Action Alternative; and
- Describe the cumulative impacts of the proposed project together with other past, present, and reasonably foreseeable future actions.

These provisions must be addressed before a final decision is made to proceed with a proposed federal action that has the potential to cause impacts to the human environment, including providing federal funding to a project. This EA is intended to meet DOE's regulatory requirements under NEPA and provide DOE with the information needed to make an informed decision about providing financial assistance. In accordance with the above regulations, this EA allows for public input into the federal decision-making process, provides federal decision-makers with an understanding of the potential environmental effects of their decisions before making these decisions, and documents the NEPA process.

1.6 Laws, Regulations, and Executive Orders

- Advancing Racial Equity and Support for Underserved Communities Through the Federal Government (Executive Order [EO] 13985)
- Bald and Golden Eagle Protection Act
- Clean Air Act (CAA)
- Clean Water Act (CWA)
- Comprehensive Environmental Response, Compensation, and Liability Act
- Endangered Species Act (ESA)
- Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input (EO 13690)
- Executive Order on America's Supply Chains (EO 14017)
- Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations (EO 12898)
- Floodplain Management (EO 11988)
- Migratory Bird Treaty Act
- Pollution Prevention Act of 1990
- Protection of Wetlands (EO 11990)
- Resource Conservation and Recovery Act
- Revitalizing Our Nation's Commitment to Environmental Justice for All (EO 14097)
- Tackling the Climate Crisis at Home and Abroad (EO 14008)
- The Noise Control Act of 1972, as amended.

1.7 Agency Consultation

DOE initiated consultations with the Washington Department of Archaeology and State Historic Preservation Office (SHPO) under Section 106 of the National Historic Preservation Act. DOE is also providing a copy of this Draft EA to the Washington State office of the United States Fish and Wildlife Service for review of DOE's determination of effect on threatened and endangered species. Response letters are included in Appendix B of this Draft EA.

1.8 Consultation with Tribal Nations

DOE initiated consultations with the Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Colville Reservation, Spokane Tribe of Indians, and Confederated Tribes of the Warm Springs Reservation of Oregon through each Tribal Nation's Tribal Historic Preservation Office. Response letters are included in Appendix B of this Draft EA.

2. PROPOSED PROJECT AND ALTERNATIVES

2.1 Department of Energy's Proposed Project

Through a grant awarded to Group14, DOE proposes to provide funding for Group14 to construct a commercial-scale facility, referred to as Battery Active Materials Factory (BAM Factory), to produce a lithium-ion battery anode material for the growing EV market. Group14's product is a silicon-carbon composite material that improves energy density and reduces the cost of lithium-ion batteries. If approved, DOE's proposed action would provide $100,000,000 in funding toward the total project costs of $590,690,080. Group14's private cost share would be $490,690,080.

2.2 Group14's Proposed Project

Group14's product is a silicon-carbon composite material that improves energy density and reduces the cost of lithium-ion batteries. The product is produced using a three-step process consisting of:

- A carbon scaffold is synthesized from dry chemical raw materials.
- The carbon is milled to a target particle size distribution.
- The milled carbon is compounded in a reactor using silane gas to form a silicon-carbon composite.

The primary raw materials used in the process include carbon and silicon-containing gases (approximately 15,000 metric tons per year), and granular raw materials (approximately 50,000 metric tons per year). These products would be shipped locally to the facility via truck and stored on site. The raw materials are anticipated to be sourced from domestic manufacturers. Primary supply contracts for each raw material are currently being negotiated with domestic U.S. suppliers. To ensure the reliability of supply, secondary sources are being vetted. In the case where secondary domestic sources are not available on a commercially reasonable basis, foreign suppliers may be included in the vetting process. Currently, only one domestic supplier of silicon-containing gases exists in the U.S., and therefore there may be a higher likelihood of requiring a secondary supplier from a non-domestic source. All suppliers (domestic and non-domestic) are reviewed and approved by DOE. Depending on the source location, raw materials may also use other modes of transportation, such as barge, rail, or air, to arrive in the region. Production of these raw materials would comply with local, state, and federal laws to minimize and mitigate environmental impacts occurring during production.

Carbon-forming dry powder precursors and carbon and silicone-containing gases would be the primary process inputs. The raw material dry powders would be mixed and transferred through the carbonization furnace. The materials would pass through the furnace, which includes a non-contact cooling section with cooling water supplied by a cooling tower.

The product would then enter a multi-stage grinding process where it would be reduced to the desired particle size. The product would then be pneumatically conveyed forward to the compounding reactor

system. Upon exiting the compounding reactor, the product would be evaluated for quality. Product meeting the quality specifications would then pass to a vibratory screener.

The final stage of the process would be bag filling. The filled bags would be heat-sealed and moved to the storage room. Trucks would back up to the module at the final product storage room, and forklifts would then load the bags onto trucks for outbound shipment. The final product produced at the BAM Factory is the silicon-carbon composite material. This material would be shipped via truck from the BAM Factory to battery manufacturers that ultimately develop the final battery product for consumers retail worldwide. Customers receiving the silicon-carbon composite material are still in negotiation and would be located domestically and internationally. No battery assembly would occur at the BAM Factory.

While not part of the BAM Factory, once the batteries have reached the end of their lifespan, they can be recycled. The recycling process typically includes dismantling the battery into its components, such as wires, circuitry, plastics, and actual cells. These components are then separated and purified to extract the metals. Many manufacturers have started recycling programs and innovative projects are finding new ways to recycle and recoup the raw materials from the batteries for reuse in battery manufacturing or other processes. The proposed project site encompasses one parcel (number 091121653) in the northern section of the Central Terminals Industrial Park, a planned industrial development created by Central Terminals, LLC (Central Terminals), in Moses Lake, Washington. The 46-acre proposed project site is located at 13431 Wheeler Road NE, Moses Lake, WA 98837 (Sections 19 and 20 of Township 19 North, Range 29 East of the Willamette Meridian) (Figure 1). Prior to being converted to an industrial park, the site was used for decades for agricultural crop production. During this time, the site was regularly plowed, planted, and harvested using mechanized farming equipment. If funding is available, Group14 may consider expanding the BAM Factory to include additional process modules or other associated infrastructure. At this time, expansion is expected to occur in the Central Terminals Industrial Park immediately adjacent to the current BAM Factory.

2.2.1 Construction, Operations, and "At Risk" Activities Completed for the Proposed Project

Group14's goal is to install six process module buildings that would require approximately 30 months to construct. Group14 elected to initiate project activities "at risk" prior to the completion of DOE's NEPA process. Upon receiving clearance from the City of Moses Lake and the Washington Department of Ecology for various local and state permits, the contractor began mobilization to the site by April 2023. Initial construction started with clearing and grading activities across approximately 35 acres of the 46-acre site in April 2023. Following grading, the installation of footings and foundations for Modules 1 and 2 and the Central Utility Building (CUB) was completed. The installation of the pre-cast concrete wall panels and roofing for the CUB is complete, and the installation of interior framing drywall and interior plumbing and pipe hangers is ongoing. Foundations for the pipe rack and other ancillary structures including trailer bays and utility yard are underway and underground utility SEP installation is ongoing. Steel erection for Module 1 and installation of the pre-cast concrete wall panels is complete, and structural steel erection for Module 2 is nearing completion. Installation of the process equipment, insulated metal wall panels, mechanical, electrical, and plumbing of Module 1 is ongoing. No other work has yet begun at the site as of June 2024. Construction is expected to finish in fall 2025.

Commissioning of the first process module building and supporting ancillary buildings is anticipated to begin in the second quarter of 2024, with production from the first module building occurring at the beginning of the third quarter of 2024. Group14 anticipates completing and bringing a new process module online in three months, and production will ramp up through 2025.

Production would primarily occur in modules that are approximately 135 feet wide by 312 feet long and ranging in height from 46 feet to 140 feet. Each module would include the process equipment necessary for production. The initial module configuration is intended to meet a 12,000 metric ton per year capacity, which would require six process module buildings to meet the initial target capacity.

Other supporting buildings would include an administrative building, operations building, utility building, solid waste storage building, and nitrogen plant. Installation of parking, stormwater infiltration pond,

wastewater conveyance, various utilities, and other associated facilities would be constructed to support operations (Figure 2).

The proposed project would enable the sourcing of critical battery materials from within the United States and reduce the dependence on foreign material suppliers. The proposed project would create more than 254 full-time jobs that offer benefits such as healthcare. Together, these efforts would help revitalize the workforce and the economy of the greater Moses Lake community for decades to come while significantly strengthening the US lithium-ion battery industry.

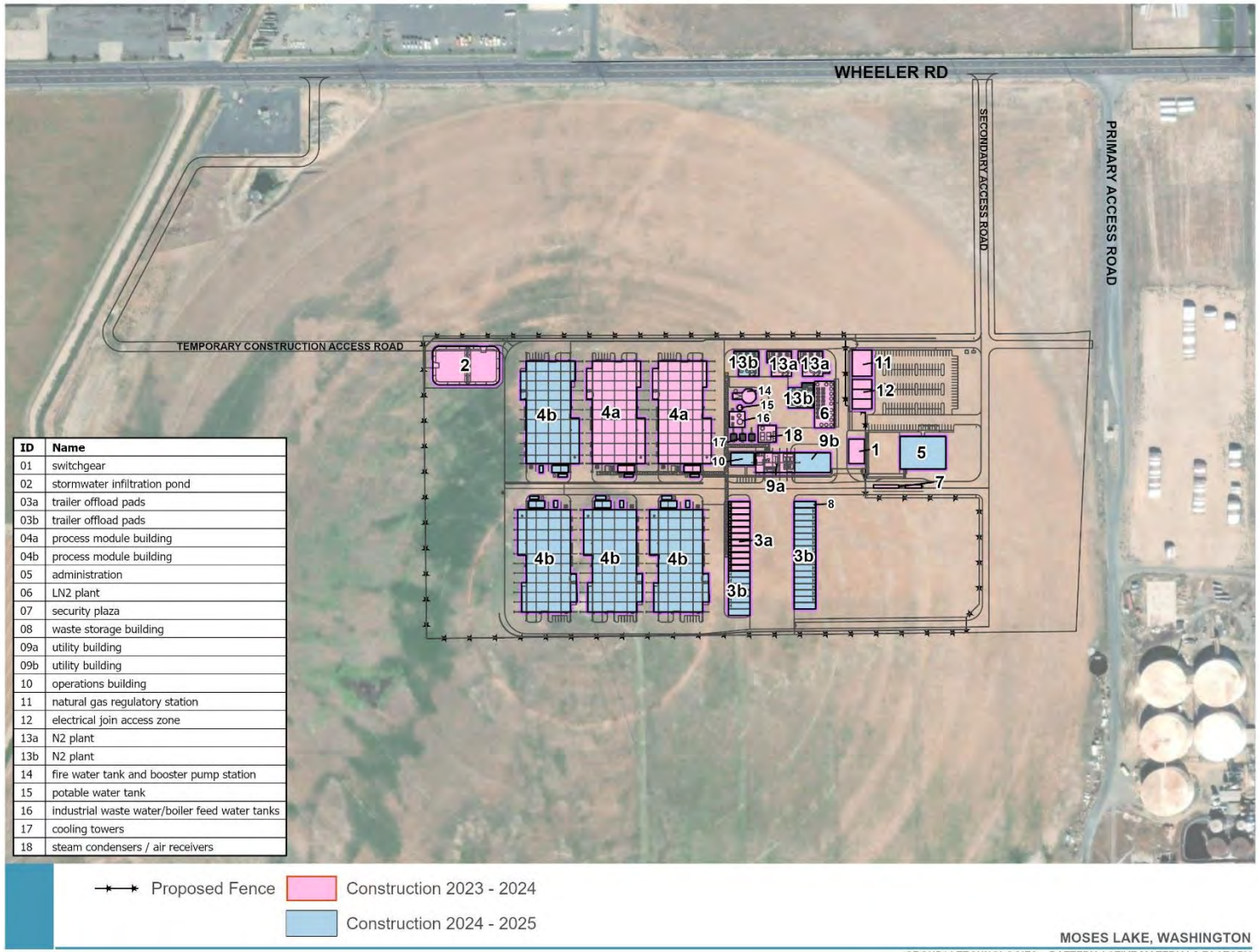
2.2.2 Interim Actions and Washington State Environmental Policy Act Compliance

DOE issued an Interim Action Memorandum on April 12, 2023 (titled "RE: Interim Action(s) within the scope of an ongoing Environmental Assessment prior to issuance of a Finding of No Significant Impact for the Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain Project") which allowed Group14 to proceed with certain activities of the project prior to the completion of the NEPA process. Activities authorized under the Interim Action Memorandum include project management, engineering, utility coordination, procurement, and environmental permitting. DOE determined that these activities would not have a significant effect on the environment or limit the range of reasonable alternatives for the project. Construction, groundbreaking, and land disturbances were not authorized under the Interim Action Memorandum. Thus, Group14 completed groundbreaking and construction activities noted in section 2.2.1, "at-risk," prior to the completion of the NEPA process. The Interim Action Memorandum can be found in Appendix C of this Draft EA.

In the state of Washington, projects requiring approvals from local or state agencies require completion of the State Environmental Protection Act (SEPA) process. Similar to NEPA, SEPA identifies and analyzes environmental impacts associated with governmental decisions. For the BAM Factory, the City of Moses Lake Conditional Use Permit (CUP), City building permit, state air quality notice of construction, and NPDES permits require completion of SEPA. In November 2022, Group14 submitted a CUP to the City, including a SEPA Checklist. As part of the SEPA process, the City issued a Mitigated Determination of Non-Significance (MDNS) for the project and subsequent public comment period in December 2022. Comments received during the public comment period included comments from Ecology and the Confederated Tribes of the Colville Reservation. These comments were addressed and incorporated into the conditions of approval as part of the CUP and MDNS. In addition, the CUP approval process included a public hearing with the City Hearings Examiner. No additional comments were received during the public hearing. Final approval of the CUP and SEPA were issued by the City on February 4 and 6, 2023, respectively. A copy of the MDNS issued by the City of Moses Lake is included in Appendix D. A number of reports used to support Group14's SEPA application were also used to inform details of this Draft EA. Details of Group14's application can be found at this website: https://apps.ecology.wa.gov/separ/Main/SEPA/Record.aspx?SEPANumber=202206225

Figure 1. Regional Location Map

Figure 2. Proposed Project Layout Map



ID	Name
01	switchgear
02	stormwater infiltration pond
03a	trailer offload pads
03b	trailer offload pads
04a	process module building
04b	process module building
05	administration
06	LN2 plant
07	security plaza
08	waste storage building
09a	utility building
09b	utility building
10	operations building
11	natural gas regulatory station
12	electrical join access zone
13a	N2 plant
13b	N2 plant
14	fire water tank and booster pump station
15	potable water tank
16	industrial waste water/boiler feed water tanks
17	cooling towers
18	steam condensers / air receivers

2.3 Alternatives

DOE's alternatives to this project consist of the numerous technically acceptable applications received in response to FOA DE-FOA-0002678. DOE made preliminary determinations about the level of review under NEPA based on potentially significant impacts it identified during a review of the technically acceptable applications. DOE conducted these preliminary reviews pursuant to 10 CFR 1021.216 and prepared a synopsis for projects under the FOA. These preliminary NEPA determinations and environmental reviews were provided to the selection official, who considered them during the selection process.

Because DOE's proposed project is limited to providing financial assistance in cost-sharing arrangements to projects submitted by applicants in response to a competitive funding opportunity, DOE's decision is limited to either accepting or rejecting a project as proposed by the proponent, including its proposed technology and selected sites. Therefore, DOE's consideration of reasonable alternatives is limited to the technically acceptable applications and a No Action Alternative for each selected project.

2.4 No Action Alternative

Under the No Action Alternative, DOE would not provide funds for the proposed project. Without DOE funding for the project to be completed as proposed, the applicant would need to identify, obtain, and use an alternative source of funds equal to the amount of funding that the applicant would have received from DOE under the above-listed funding opportunity. As a result, this project could be de-scoped or delayed while the applicant seeks other funding sources and may be canceled if sufficient funding is not obtained. Furthermore, acceleration of the development of industrial-scale US production capacity of sustainable, low-cost lithium-ion battery anode material would be delayed or perhaps not occur. DOE's ability to achieve its objectives under the Infrastructure Investment and Jobs Act would be reduced.

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this proposed project might continue if DOE decides not to provide financial assistance. If Group14's project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the projects to be implemented and the impacts of not proceeding with the projects, for purposes of this environmental analysis, DOE assumes that the proposed project would likely not proceed without DOE assistance.

2.5 Alternatives Considered by Group14

Group14 considered alternative locations as potential sites for the construction of the BAM Facility. The alternatives evaluated included both greenfield and brownfield sites in the states of Washington and Montana. The evaluation of potential sites included: (1) proximity to the battery manufacturing industry; (2) proximity to manufacturing sites in the Pacific Northwest; and (3) overall size and area with access to transportation infrastructure (roadways) and public utilities, including power, appropriate zoning, and support from local and state entities. One site in Montana located within an industrial park and near an existing silane facility was evaluated but was not considered due to the cost-prohibitive utilities needed for the BAM Factory and was subsequently dismissed from further consideration. A site immediately north of the current site, adjacent to REC Silicon, was evaluated but was dismissed from further consideration because the land was not available for lease or purchase. The current site met the evaluation criteria and was available for immediate development and was chosen as the preferred site for the BAM Factory.

2.6 Summary of Environmental Consequences

Table 2 summarizes the environmental, cultural, and socioeconomic impacts of the No Action Alternative and the proposed project.

Table 2. Summary of Environmental, Cultural, and Socioeconomic Impacts

Impact Area	No Action Alternative		Proposed Project	
	Construction	Operations	Construction	Operations
Parks and Recreation	Negligible	Negligible	Negligible	Negligible
Surface Water and Groundwater	Negligible	Negligible	Minor	Minor
Wetlands and Floodplains	Negligible	Negligible	Negligible	Negligible
Vegetation and Wildlife	Negligible	Negligible	Minor	Negligible
Community Services	Negligible	Negligible	Negligible	Minor
Aesthetics and Visual Resources	Negligible	Negligible	Negligible	Negligible
Air Quality	Negligible	Negligible	Minor	Minor
Noise and Vibration	Negligible	Negligible	Negligible	Negligible
Regulated Wastes (Solid and Hazardous Wastes)	Negligible	Negligible	Minor	Minor
Utilities and Energy Use	Negligible	Negligible	Negligible	Minor
Transportation and Traffic	Negligible	Negligible	Minor	Minor
Land Use	Negligible	Negligible	Negligible	Negligible
Greenhouse Gases	Negligible	Negligible	Negligible	Negligible
Geology, Topography, and Soils	Negligible	Negligible	Negligible	Negligible
Socioeconomics	Negligible	Negligible	Minor Beneficial	Minor Beneficial
Environmental Justice	Negligible	Negligible	Minor Beneficial	Minor Beneficial
Cultural Resources	Negligible	Negligible	Negligible	Negligible
Public and Occupational Health and Safety	Negligible	Negligible	Minor	Minor

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Chapter 3 provides a description of the affected environment (existing conditions) at the site and a discussion of the environmental consequences of the No Action Alternative and the proposed project Alternative. Additionally, cumulative impacts and mitigation measures are discussed where appropriate. The methodology used to identify existing conditions and to evaluate potential impacts on the physical and human environment involved the following: review of the Environmental Questionnaire and Environmental Information Volume prepared by Group14, review of documentation and prior site environmental reports/analyses provided by Group14, searches of various environmental databases, and agency consultation.

3.1 Resource Areas Dismissed from Further Consideration

DOE has determined that parks and recreation would either not be affected or would sustain negligible impacts from the proposed project and was dismissed from further evaluation. This dismissed resource is briefly discussed but will not be evaluated further.

The proposed project site would be constructed entirely within industrial-designated lands zoned for high-intensity development that are not designated or used for recreational purposes. According to the Parks and Trails Moses Lake web app and the US Geological Survey (USGS) Protected Areas Database of the United States (City 2022; USGS 2022), no parks or other recreational areas are located within the proposed project site or in its vicinity. The proposed project would not displace recreational uses or result in the conversion of current or planned recreational uses to non-park uses.

The impact on parks and recreation from the proposed project is anticipated to be negligible.

3.2 Resource Areas for Further Consideration

Environmental resource areas carried through for further consideration of the potential impact of Group14's proposed project include surface water and groundwater; wetlands and floodplains; vegetation and wildlife; community services; aesthetics and visual resources; air quality; noise and vibration; regulated waste (solid and hazardous waste); utilities and energy use; transportation and traffic; land use; geology, topography, and soils; greenhouse gases; socioeconomics; environmental justice; cultural resources; and public and occupational health and safety.

3.2.1 Surface Water and Groundwater

3.2.1.1 Affected Environment

3.2.1.1.1 Surface Water

The proposed project site is located on existing agricultural land that is generally flat and zoned for industrial use as part of the Central Terminals Industrial Park. An existing industrial facility is adjacent to the proposed project site to the east. Other surrounding properties are existing agricultural land. Commercial and other industrial facilities are located north of Wheeler Road within approximately a mile of the proposed project site. Historical aerial imagery shows surface water covered large portions of the northwest and southeast quadrants of the property up until the 1980s, but the National Wetlands Inventory (NWI) does not identify any surface waters on the proposed project site (HDR 2022a; Ecosystems Northwest 2022). No evidence of surface ponding or saturation was observed during a field survey of the proposed project site in August 2022 (HDR 2022a).

Surface water features in the vicinity of the proposed project site include an irrigation ditch and lined evaporation ponds. The irrigation ditch runs generally north to south and is located approximately 0.20 miles from the western edge of the proposed project site. A temporary construction access road would parallel the ditch for approximately 670 feet with a 30-foot offset from the ditch. The ditch is part of the Rocky Coulee Wasteway Drain that ultimately flows to the Potholes Reservoir approximately 10 miles south of the proposed project site. Two evaporation ponds are located to the southeast of the proposed

project site and are a water storage point from the REC Silicon plant located north of Wheeler Road. The pond liners are routinely inspected according to Central Terminals (HDR 2022a).

3.2.1.1.2 Groundwater

Based on water levels in borings drilled during geotechnical investigations in 2004, reported water levels from Central Terminals, and water levels at USGS monitoring wells, groundwater is found above the bedrock at approximately five and eight feet below ground surface (bgs) (AES 2004). Static water levels reported for onsite irrigation are approximately 60 feet bgs (HDR 2022a). The discontinuous nature of shallow groundwater above the basalt layer and frequent interactions with irrigation canals and diversion ditches make estimating shallow groundwater flow direction difficult. The regional groundwater flow direction in deeper zones is estimated to be to the southwest toward Moses Lake and Pothole Reservoir (WPES 2023).

As documented in a Geotechnical Investigation completed by Western Pacific Engineering and Survey, field surveys of the proposed project site in October 2022 encountered no groundwater in the northeastern section of the proposed project site where construction is proposed. Test pits on the most western and southern portions of the site, however, reached groundwater at 7 to 11 feet bgs, consistent with the 2004 findings (WPES 2023).

The proposed project site is located within three, 5-year and three, 10-year wellhead protection areas (Ecology 2022). Nine active wells are located within 1,000 feet of the proposed project site: one domestic well for individual private use located south of the property, one community well for public water supply located northwest of the property (drawn from a deeper aquifer), five for irrigation purposes, one located east of the property for industrial water, and another is an unknown use (Well AHP781). Additionally, there are eight abandoned USGS monitoring wells and six wells owned and operated by Central Terminals located in close vicinity to the proposed project site (HDR 2022b; USGS 2022a; USGS 2022b; WDH 2022).

Limited information on the groundwater quality is available for the proposed project site. The only available water quality testing was at Well #18. The analytical suite included pesticides (carbamate insecticides and a general pesticide suite), soil fumigants, volatile organic contaminants, nitrates, inorganics, and chlorophynoxy herbicides. Testing has been performed at a frequency of about twice per year since 2002 and as recently as June 2022. No exceedances of tested analytes have been recorded at Well #18 (HDR 2022b).

3.2.1.2 Environmental Consequences

3.2.1.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this proposed project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the project for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.1.2.2 Proposed Project

3.2.1.2.2.1 Surface Water

Construction

Construction of the proposed project would have minor temporary indirect impacts from runoff to nearby surface waters. These impacts would be avoided and minimized through the implementation of a

Stormwater Pollution Prevention Plan (SWPPP) and best management practices (BMPs) as required under the Washington Department of Ecology (Ecology) Construction Stormwater General Permit (CSWGP) (Appendix D). The CSWGP would be obtained prior to construction-related ground disturbance activities. Additionally, a stormwater infiltration pond would be constructed as part of the proposed project to capture stormwater from the site during construction as well as operations. The infiltration pond would include adequate freeboard to account for potential overflow conditions and meet the requirements of the Stormwater Management Manual for Eastern Washington (Ecology 2019).

Operations

Operations would have negligible impacts on surface water as wastewater and stormwater would be captured and treated, and no discharge to surface waters would occur.

Operation of the proposed project is expected to require 170,000 gallons per day (gpd) of potable water through a direct connection with the existing City main line located parallel to Wheeler Road. A fire water storage system would also be connected to the City's main line. Water quantities are currently available from the City system to supply these needs, and no surface water withdrawals will occur. The City indicated the necessary water availability as part of the Staff Report issued on October 19, 2022, for the Conditional Use Permit and SEPA MDNS on February 6, 2023.

Operations would produce wastewater streams. Sources of this industrial wastewater would primarily be from utility systems and would not contain process chemical contaminants but will be comprised of:

- Sanitary wastewater from domestic uses,
- Boiler blowdown discharge,
- Thermal oxidizer drain discharge,
- Cooling tower blowdown discharge,
- Reverse osmosis units concentrate discharge, and
- Water softener skid regeneration discharge.

Non-contact cooling water would be used for chillers to cool an electro-magnet filter. The carbonization furnace would also require non-contact cooling water to cool the product. Cooling tower makeup water would be from potable water distribution or reverse osmosis water, depending on quality requirements. The resulting condensate from the air coolers would be returned to the modules. Cooling tower blowdown would be discharged to the City sewer system, as noted above.

Wastewater discharge, including industrial wastewater and sanitary wastewater, would be connected to the City sanitary sewer system on Wheeler Road and ultimately conveyed to the City’s Dunes Wastewater Treatment Plant (WWTP). Total wastewater flow from the proposed project would average a continuous 60 gallons per minute (gpm), resulting in an average daily sanitary sewer load of approximately 100,000 gallons. The WWTP has a daily capacity of 4.4 million gallons per day (City of Moses Lake 2023b), and the City confirmed the water availability as part of the Staff Report issued on October 19, 2022, for the Conditional Use Permit and SEPA MDNS on February 6, 2023.

Additionally, wastewater from floor cleaning would be collected and hauled offsite. There would be no floor drains in the process areas. All wastewater discharges would be directed to the City’s public-owned treatment works (POTW) subject to, and in compliance with, a National Pollutant Discharge Elimination System (NPDES) and City wastewater discharge permits obtained prior to operation. These permit approvals are currently in process with the City and Ecology.

Precipitation runoff with the proposed project boundary would be captured and directed to the stormwater infiltration pond. Precipitation runoff would not be in contact with waste streams. Accidental releases of chemicals could occur during operation. A SWPPP would be developed as part of the NPDES and City wastewater discharge permits to avoid and minimize impacts to surface waters.

3.2.1.2.2.2 Groundwater

Construction

Construction would have negligible impacts to groundwater as discharges to land are not proposed and construction-related stormwater would be routed to the infiltration pond in compliance with the CSWGP. Additionally, the shallow groundwater is likely separated from the deeper water supply aquifer by a confining layer, which would slow or preclude unplanned discharges from reaching the deeper aquifer and the source for the community well supplying public water.

Operations

Operations would have minor impacts to groundwater as stormwater would be treated prior to infiltration, and there is a low potential for unplanned discharges reaching groundwater.

Operation of the proposed project is expected to require 170,000 gpd of potable water through a direct connection with the existing City main line located parallel to Wheeler Road. A fire water storage system would also be connected to the City main line. Water quantities are currently available from the City system to supply these needs, and no groundwater withdraws would occur.

Stormwater generated from surfaces, such as roofs and pavement, would be routed to an infiltration pond for treatment and indirect discharge via infiltration to groundwater. Unplanned discharges during operations would be handled in accordance with the operational SWPPP. If the discharge enters the infiltration pond, the shallow groundwater is likely separated from the deeper water supply aquifer by a confining layer, which would slow or preclude unplanned discharges from reaching the deeper aquifer and the source for the community well supplying public water.

3.2.1.2.3 Cumulative Impacts

Sila's proposed EV battery facility in Moses is located approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. Given the negligible to minor impacts to surface water and groundwater, and despite plans for additional industrial development in the vicinity of the proposed project, no reasonably foreseeable actions have been identified that would combine with the proposed project to generate cumulative adverse impacts to surface water and groundwater.

3.2.1.2.4 Proposed Mitigation Measures

No mitigation measures would be required for surface water or groundwater. All water used and consumed for the proposed project would be subject to permitting and oversight by the State of Washington Department of Ecology, and adherence to these permits is a condition of the project proceeding as planned.

3.2.2 Wetlands and Floodplains

3.2.2.1 Affected Environment

Portions of the proposed project site have been mapped as wetlands by the NWI. These mapped features include several small wetlands (PUBF – palustrine, unconsolidated bottom, semi-permanently flooded) and a large seasonally flooded area along the western low part of the site and extending to the south (PEM1C – palustrine, emergent, persistent, seasonally flooded). A qualified wetland scientist investigated these NWI features and the remainder of the site in August 2022 and observed no wetlands on or within 300 feet of the proposed project site. Soils present at the site are listed as well-drained or somewhat excessively well-drained and not associated with wetlands. There was no evidence of saturation or surface ponding at the site, and none of the observed vegetation contained hydrophytic (wetland or

aquatic) plants. None of the areas mapped by the NWI represent wetlands, and the site appears to be well-drained even though portions are regularly irrigated (Ecosystems Northwest 2022; HDR 2022c).

A review of the Federal Emergency Management Agency (FEMA) national flood hazard layer indicates the area is mapped as Zone X or an area of minimal flood hazard and is not located within the 100-year floodplain. The proposed project site is within the Flood Insurance Rate Map (FIRM) Panel 53025C1100C (effective 2/18/2009) (FEMA 2022).

3.2.2.2 Environmental Consequences

3.2.2.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this proposed project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the proposed project, for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.2.2.2 Proposed Project

Construction

Construction would have no planned impacts to wetlands as none were observed on or within 300 feet of the proposed project site. The proposed project is not located within a floodway or the 100-year floodplain; therefore, no impacts to floodplains would occur.

Operations

Operations would have no planned impacts to wetlands as none were observed on or within 300 feet of the proposed project site. The proposed project is not located within a floodway or the 100-year floodplain; therefore, no impacts to floodplains would occur.

3.2.2.2.3 Cumulative Impacts

Sila's proposed EV battery facility in Moses is approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. Given no anticipated impacts to wetlands and floodplains, and despite plans for additional industrial development in the vicinity of the proposed project site, no reasonably foreseeable actions have been identified that would combine with the proposed project to generate cumulative adverse impacts to wetlands and floodplains.

3.2.2.2.4 Proposed Mitigation Measures

No mitigation measures would be required for wetlands and floodplains.

3.2.3 Vegetation and Wildlife

3.2.3.1 Affected Environment

3.2.3.1.1 Vegetation

The USFWS Information for Planning and Consultation (IPaC) system was reviewed for federally listed species. No federally protected plant species were identified on the proposed project site (USFWS 2022a) or in the vicinity. The Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species (PHS) Program identifies Eastside and Steppe and Shrub-Steppe in the proposed project site and vicinity (WDFW 2022a).

As observed during the October 2022 field survey of the project site, the proposed property has been repeatedly modified for agriculture or other human uses and is now dominated by non-native vegetation including pasture grasses and a diverse assemblage of weeds, such as a dense understory of cheatgrass (*Bromus tectorum*) and a shrub layer that consists of Russian thistle (*Sasola kali*), diffuse knapweed (*Centaurea diffusa*), spotted knapweed (*Centaurea maculosa*), Canada Thistle (*Cirsium arvense*), and tall tumble mustard (*Sisymbrium altissimum*). The irrigated portions of the site support perennial forage grasses, including red fescue (*Festuca rubra*) and Kentucky bluegrass (*Poa pratense*). The entire site is regularly grazed by livestock (HDR 2022c). These findings were summarized in a Resource Lands and Critical Areas Report in October 2022 (Appendix E).

3.2.3.1.2 Wildlife

The USFWS IpaC database listed the Columbia Basin pygmy rabbit (*Brachylagus idaoensis*), yellow-billed cuckoo (*Coccyzus americanus*), and monarch butterfly (*Danaus plexippus*) as potentially occurring in the vicinity of the proposed project site. No critical habitat for the listed species is in the proposed project site (USFWS 2022a). The IPaC-listed species were not observed during an October 2022 field survey (HDR 2022c).

The WDFW PHS Program listed occurrences of the burrowing owl (*Athene cunicularia*), a state-listed candidate species) in 2000 and 2001. The occurrences were located north of Wheeler Road, approximately 0.3 miles north of the proposed project site (WDFW 2022a). No such occurrences were documented for the proposed project site, and no burrowing owls or evidence of their presence were observed during the October 2022 field survey (HDR 2022c). No salmonids are mapped or stocked in the irrigation ditch to the west of the proposed project site (WDFW 2022b).

The proposed project site is in the Pacific Flyway migration route that extends from Alaska to Patagonia and is used by waterfowl, eagles, hawks, falcons, songbirds, sandhill cranes, and shorebirds. No critical stopover areas are known to occur within the proposed project site. Wildlife species that would be expected on or in the vicinity of the proposed project site would include coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), mule deer (*Odocoileus hemionus*), red fox (*Vulpes vulpes*), cottontail rabbit (*Sylvilagus* sp.), or badger (*Taxidea taxus*). As observed during the October 2022 field survey, the proposed project site is being used by birds that have an affiliation with agriculture such as red-winged blackbirds (*Agelaius phoniciceus*), European starlings (*Sturnus vulgaris*), horned larks (*Eremophila alpestris*), and western meadowlarks (*Sturnella neglecta*). Nesting, including ground nesting of passerines, is likely limited due to regular agricultural disturbance. No other wildlife was observed during this site visit (HDR 2022c).

3.2.3.2 Environmental Consequences

3.2.3.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this proposed project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under

DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the proposed project, for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.3.2.2 Proposed Project

3.2.3.2.2.1 Vegetation

Construction

Construction impacts are anticipated to be minor, affecting prior and current agricultural cover rather than native vegetation and habitat. Under the proposed project, up to 46 acres of disturbance to agricultural land would occur due to construction. Grading and clearing activities during construction would permanently remove vegetation. Staging areas for construction equipment and materials would utilize the areas cleared for the proposed project to avoid additional impacts on vegetation. As stated in Section 3.2.1.2.2.1 Surface Water, a SWPPP would be implemented to avoid and minimize impacts from runoff or accidental discharges to adjacent vegetated areas.

Operations

The proposed project's operations would not impact vegetation. As stated in Section 3.2.1.2.2.1 Surface Water, a SWPPP would be implemented to avoid and minimize impacts from stormwater and wastewater runoff or accidental discharges to adjacent vegetated areas.

3.2.3.2.2.2 Wildlife

Construction

Impacts to listed threatened or endangered wildlife species from construction of the proposed project are anticipated to be negligible. No federally listed endangered or threatened species have been observed or documented on the site, nor does the site contain designated critical habitat for any listed species.

The proposed project's impacts on general wildlife species are also anticipated to be negligible. The project would be constructed on a zoned industrial site where the habitat has been influenced by previous site disturbances associated with vegetation removal and active farming. Such activities have altered plant composition and left the area devoid of adequate wildlife habitat.

Terrestrial species could be affected by construction noise though individuals are unlikely to remain during construction should they happen to pass through the proposed project site due to human activity. Noise-related effects within and immediately adjacent to the proposed project site would be limited to occasional transients and are not anticipated to result in nest or burrow abandonment or measurable changes to sensitive life histories or behaviors.

Operations

No impacts to listed threatened or endangered wildlife species from the operation of the proposed project are anticipated. Operations of the proposed project would not result in impacts to general wildlife as minimal habitat would be present in landscaped areas providing limited opportunity for food and shelter for species. Human activity at the facility during the day and night would also deter species from using the landscaped areas.

Based on the prior studies noted above and the scope of the proposed project, DOE has determined that the proposed project would have no effect on threatened or endangered species. DOE has provided a copy of this Draft EA to the Washington Office of the Fish and Wildlife Service for review and comment on this determination.

3.2.3.3 Cumulative Impacts

Sila's proposed EV battery facility in Moses is located approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. Given the minor impacts to vegetation and wildlife, and despite plans for additional industrial development in the vicinity of the proposed project, no reasonably foreseeable actions have been identified that would combine with the proposed project to generate cumulative adverse impacts to vegetation and wildlife.

3.2.3.4 Proposed Mitigation Measures

No mitigation measures would be required for vegetation and wildlife.

3.2.4 Community Services

3.2.4.1 Affected Environment

Community services pertinent to the proposed project include schools, police, fire, and emergency medical services (EMS), which the City provides. Moses Lake Police Department (MLPD) is located approximately 2.9 miles west of the proposed project site. Moses Lake Fire Department (MLFD) Station 1 is located approximately 2.7 miles west of the proposed project site, and Station 2 is located approximately 4.6 miles southwest of the proposed project site. Medical care would be obtained at Samaritan Hospital, located approximately 2.5 miles west of the proposed project site.

The Moses Lake School District has 11 public elementary schools and eight secondary schools (Moses Lake School District 2023). The region also supports several private schools. Two post-secondary education institutions are also available, including Big Bend Community College and Central Washington University – Moses Lake Campus (Washington State Schools Explorer 2023). Of these, the nearest schools are Vicki L Groff Elementary School, approximately 2.02 miles southwest of the proposed project site, and Lakeview Terrace Elementary School, approximately 2.17 miles west of the proposed project site.

3.2.4.2 Environmental Consequences

3.2.4.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the proposed project, for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.4.2.2 Proposed Project

Construction

Construction impacts are anticipated to be negligible to community services. The risk of fires during construction would be similar to other industrial construction projects and may require emergency fire response for small events. Should emergency services be required during construction, fire and EMS response can be requested from MLFD. Active fire hydrants and existing fire services would be available to address emergencies without impacting service to others. Police protection would be requested

through MLPD. Existing police services would be able to address emergencies without impacting services to others.

Construction crews are anticipated to be drawn from local and regional residents and not constitute a notable migration of workers and their families to the region. The additional staff would likely not exert an undue burden on existing community services, including schools. Additionally, road closures or other impacts potentially restricting or impeding the movement of emergency personnel or other traffic through the area are not anticipated as part of proposed project construction activities.

Operations

The proposed project operations would have a minor, direct impact on the City's fire, rescue, and medical services due to the increased number of buildings and employees in the industrial park; the added use and storage of chemicals onsite with noted pyrophoric, corrosive, and/or flammable properties; and increased demand should emergency services be required. The MLFD could be constrained (i.e., lack of equipment, personnel, vehicles, etc.) if multiple emergencies occurred simultaneously in the City along with an emergency at the proposed project site. The proposed project operations would have similar impacts on police protection, schools, and employment as described for the construction of the proposed project.

3.2.4.3 Cumulative Impacts

Sila's proposed EV battery facility in Moses is located approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. Given the minor impacts to community services, and despite plans for additional industrial development in the vicinity of the proposed project, no reasonably foreseeable actions have been identified that would combine with the proposed project to generate cumulative adverse impacts to public services such as schools, fire, police, or EMS.

3.2.4.4 Proposed Mitigation Measures

Group14 has committed to providing financial assistance (mitigation fee of $382,500) to the MLFD to improve the current emergency system performance. The financial assistance would improve vehicles, equipment, and fire stations used by the MLFD. In addition, automatic fire suppression systems, automatic fire alarms, and fire hydrants would be installed at the proposed project site. These measures would allow Group14 to handle minor emergencies on site as well as avoid and minimize potential impacts from fire and emergency response.

3.2.5 Aesthetics and Visual Resources

3.2.5.1 Affected Environment

The proposed project site is located within a zoned industrial area that is generally flat and zoned for industrial use. An existing Central Terminals industrial facility is adjacent to the proposed project site to the east. Other surrounding properties are existing agricultural land. Commercial and other industrial facilities are located north of Wheeler Road within approximately a mile of the proposed project site.

3.2.5.2 Environmental Consequences

3.2.5.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, the applicant initiated and self-funded certain site preparation and construction work. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the proposed project

proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the proposed project, for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.5.2.2 Proposed Project

Construction

Negligible temporary changes to the visual setting near the proposed project would occur during construction due to the presence of construction workers, equipment, vehicles, and partially constructed structures. Dust and emissions generated by construction activities could cause visual impacts, although these would be reduced with the use of BMPs, including applying water to limit dust and minimizing idling to reduce particulate emissions. The proposed project would be visible from Wheeler Road; however, the proposed project would not substantially alter the viewshed as it would be constructed within an existing industrial area. Furthermore, the process modules and cooling towers would be set back approximately 1000' feet south of Wheeler Road, with parking and the shorter administrative building to the north (closer to Wheeler Road), along the eastern portion of the facility. This arrangement would provide a visual transition to the taller buildings, providing a softer aesthetic. No areas within the viewshed of the proposed project have protected views.

Operations

Proposed project operations would not affect aesthetics and visual resources. The scale and massing of the buildings would be consistent with existing and planned buildings in the surrounding industrial area.

3.2.5.3 Cumulative Impacts

Sila's proposed EV battery facility in Moses is located approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. Given the negligible impacts to aesthetics and visual resources, and despite plans for additional industrial development in the vicinity of the proposed project, no reasonably foreseeable actions have been identified that would combine with the proposed project to generate cumulative adverse impacts to aesthetics and visual resources.

3.2.5.4 Proposed Mitigation Measures

No mitigation measures would be required for aesthetics and visual resources.

3.2.6 Air Quality

3.2.6.1 Affected Environment

The proposed project would be subject to the applicable federal and state regulations under the CAA and Washington Administrative Code (WAC) Chapter 173-400. All general conditions of the Washington code would apply to the proposed project, which is not exempt from any general requirements. As the proposed project would include sources of potential air contaminants, it is subject to Washington Revised Code 70A.15.2210, which requires notice of construction of proposed new contaminant sources. Ecology issued a Notice of Construction Approval Order-Preliminary Decision for the proposed project on July 11th, 2023 (Approval Order 23AQ-E012) (Appendix D).

The CAA requires the United States Environmental Protection Agency (USEPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment.

The USEPA has established NAAQS for six principal pollutants, which are called “criteria pollutants.” These include carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), carbon monoxide, particle pollution (PM), and sulfur dioxide (SO_2) (Table 3).

Grant County, Washington, is designated by the USEPA as in attainment of or unclassifiable for all criteria pollutant ambient standards. As such, Washington’s SIP-approved Prevention of Significant Deterioration (PSD) permit program would apply to the proposed project if it were a new major source or a major modification of an existing source of regulated air pollutants. As shown in the Notice of Construction Application Supporting Information Report submitted to Ecology on December 20, 2022, which summarizes the maximum potential annual emissions from the proposed project, all regulated pollutant emission rates will be less than the 250-ton PSD major source threshold; therefore, the proposed project is not subject to PSD review (Landau 2022).

The area surrounding the proposed project site is primarily agricultural and industrial. The nearest sensitive receptors (sources of human populations) are residential areas approximately 1.6 to 2.0 miles to the west and northwest in the City of Moses Lake. The nearest schools are Vicki L Groff Elementary School, approximately 2.02 miles southwest of the proposed project site, and Lakeview Terrace Elementary School, approximately 2.17 miles west of the proposed project site. The nearest hospital, Samaritan Hospital, is located approximately 2.5 miles west of the proposed project. Other sensitive receptors (e.g., schools, hospitals, etc.) are not located near the proposed project site (see Section 3.2.4 Community Services).

Table 3. USEPA NAAQS

Pollutant	Primary / Secondary	Averaging Time	Level	Form
CO	Primary	8 hours	9 parts per million (ppm)	Not to be exceeded more than once per year
		1 hour	35 ppm	
Pb	Primary and Secondary	Rolling 3-month average	0.15 micrograms per cubic meter ($\mu g/m^3$ (1))	Not to be exceeded
NO_2	Primary	1 hour	100 parts per billion (ppb)	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Primary and Secondary	1 year	53 ppb (2)	Annual Mean
O_3	Primary and Secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
$PM_{2.5}$	Primary	1 year	12.0 $\mu g/m^3$	annual mean, averaged over 3 years
	Secondary	1 year	15.0 $\mu g/m^3$	annual mean, averaged over 3 years

Pollutant	Primary / Secondary	Averaging Time	Level	Form
PM_{10}	Primary and Secondary	24 hours	35 µg/m^3	98th percentile, averaged over 3 years
	Primary and Secondary	24 hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
SO_2	Primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Source: https://www.epa.gov/criteria-air-pollutants/naaqs-table

Notes:

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m3 as a calendar quarter average) also remain in effect.

(2) The level of the annual NO_2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the one-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O_3 standards are not revoked and remain in effect for designated areas. Additionally, some areas may have certain continuing implementation obligations under the prior revoked one-hour (1979) and eight-hour (1997) O_3 standards.

(4) The previous SO_2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet one year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a State Implementation Plan (SIP) call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its SIP to demonstrate attainment of the required NAAQS.

3.2.6.2 Environmental Consequences

3.2.6.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes this project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the proposed project, for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.6.2.2 Proposed Project

Construction

Construction would result in minor temporary, intermittent air emissions. Emissions attributable to the proposed project would not cause or contribute to an exceedance of ambient air quality standards for criteria and toxic air pollutants. Dust emissions would be present during the site clearing and construction phases of this proposed project; however, these emissions would be controlled through dust emission control practices in accordance with applicable air control requirements in WAC 173-400-040. Temporary ultra-low sulfur diesel generators would be used if necessary to provide power for construction activities. Non-road engines associated with construction would comply with applicable notification and recording requirements in WAC 173-400-035. There are no known off-site sources of emissions that would affect construction activities.

Operations

Operations would result in minor impacts on air quality and would not cause or contribute to an exceedance of ambient air quality standards for criteria and toxic air pollutants. Additionally, no known sources of offsite emissions or odor would affect proposed project operations. Emissions during normal proposed project operations include:

- Particulate matter from material transfer activities, baghouses, and cooling towers;
- Carbon production furnace and compounding unit process emissions controlled by natural gas-fired thermal oxidizers;
- Combustion emissions from emergency generators, and
- Natural gas combustion emissions from each phase of the proposed project as included in the Notice of Construction (NOC) application.

Proposed project emissions require approval under Washington's minor new source review regulations. Proposed project emissions would be less than major new source review thresholds and Title V air operating permit thresholds. The proposed project emission units would comply with Best Available Control Technology (BACT) for criteria and toxic air pollutants (tBACT) as required under WAC 173-400-113. Thermal oxidizers would be installed to control process emissions, selective catalytic reduction to reduce nitrogen oxide emissions, dust collectors to control particulate matter emissions from material transfers and drift eliminators to reduce particulate matter emissions from cooling towers. By adhering to BACT requirements, proposed project emissions would be less than major new source review and air operating permit thresholds. The minor new source review by Ecology would confirm emissions from the proposed project would not adversely impact ambient air quality standards for criteria and toxic air pollutants.

3.2.6.3 Cumulative Impacts

Sila's proposed EV battery facility in Moses is located approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. Despite plans for additional industrial development in the vicinity of the proposed project, no reasonably foreseeable actions have been identified that would combine with the proposed project to generate cumulative adverse impacts on air quality. Additional projects would likely be subject to similar regulatory requirements related to air quality.

3.2.6.4 Proposed Mitigation Measures

Dust minimization techniques (i.e., water trucks and other methods) would be used to reduce dust emissions during construction. Operations emissions would comply with BACT for criteria pollutants and BACT for toxic air pollutants (tBACT) under WAC 173-400-113 as described in operations.

3.2.7 Noise and Vibration

3.2.7.1 Affected Environment

The proposed project site is bordered on all sides by industrial land uses. Beyond the adjacent industrial parcels, land uses are primarily agricultural in all directions. Existing noise and vibration sources within the vicinity of the proposed project site include the neighboring industrial facilities, noise from traffic on Wheeler Road, train noise from nearby freight rail lines, and noise from aircraft associated with the nearby municipal airport. The nearest noise-sensitive receptors are residences 0.7 miles east of the proposed project site along Wheeler Road. The nearest residents in the City of Moses Lake are approximately 1.2 miles west of the proposed project site. Also, Guarding Angels cemetery is located 1.2 miles southwest of the proposed project site.

The proposed project is subject to noise regulations and ordinances at the state, county, and municipal levels. These are the WAC, Grant County noise ordinance, and the City of Moses Lake noise ordinance, respectively. Noise from daytime construction activities is exempt from the noise limits in WAC Chapter 17-60 and the Grant County noise ordinance in Part C 1. Section 6.24.050. Similarly, noise from construction activities is also exempt from regulation under Part B iii. Section 8.28.050 of the City of Moses Lake, Washington noise ordinance.

The Grant County Noise Ordinance and City of Moses Lake Noise Ordinance both regulate noise on a qualitative, annoyance basis. Both these ordinances prohibit noise that creates a public disturbance. No quantitative criteria are set forth in these ordinances.

Chapter 173-60 of the WAC regulates noise on a maximum noise level (Lmax) basis, with different limits set forth for different generating and receiving land uses, organized in categories called Environmental Designation for Noise Abatement (EDNA). Table 4 below shows the maximum permissible noise levels at land uses receiving proposed project-related noise from an industrial land use, based on EDNA.

Table 4. Maximum Permissible Noise Levels under WAC

	EDNA of Receiving Land Use		
	Class A	Class B	Class C
Maximum Permissible Noise Level (dBA)	60	65	70

Source: WAC 173-60

Class A EDNAs are lands where human beings reside and sleep, Class B EDNAs are lands involving uses requiring protection against noise interference with speech, and Class C EDNAs are lands where higher noise levels can be naturally expected. Industrial facilities, such as the proposed project, are Class C EDNAs.

3.2.7.2 Environmental Consequences

3.2.7.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the proposed project, for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.7.2.2 Proposed Project

Construction

The proposed project would perform construction during one shift per day, only in the daytime. Since noise from daytime construction activities is not regulated, and the nearest noise-sensitive land uses are over one mile from the site, the proposed project would result in negligible construction noise impacts. Construction-induced ground-borne vibration is expected to attenuate to background levels within the property lines or shortly thereafter.

Operations

Operation-related noise is not anticipated to be distinguishable from existing noise and is not expected to increase noise levels at the nearest noise-sensitive receivers along Wheeler Road east of the proposed project site. The proposed project would include several operational noise sources typically seen in industrial facilities. Main noise sources include truck traffic pass-by and idling noise (20 trucks per day are anticipated to transport materials to and from the site), pumping noise to transfer raw materials and waste from transport vehicles, gas pressure regulation noise, and steam turbine generator noise. Proposed project-related noise is anticipated to comply with applicable noise limits at the proposed project's property line. In addition to industrial noise, employee traffic to and from the site would also be a source of noise. The proposed project would result in a negligible increase of ambient noise on site; however, proposed project-related noise is not anticipated to increase ambient noise levels off-site, particularly at noise-sensitive receptors located approximately 0.7 to 1.2 miles away.

As discussed in the Affected Environment section, the nearest homes to the site are 0.7 miles east of the nearest site boundary along Wheeler Road. Main noise sources in this area are roadway traffic on Wheeler Road, train traffic from the rail line that runs northwest and northeast of the town, and industrial noise from existing facilities located in the vicinity of the proposed site. Proposed project-related noise sources are similar to noise from the existing nearby industrial facilities.

None of the proposed activities are notable sources of ground-borne vibration, and proposed project-related ground-borne vibration levels are anticipated to be the same as existing ground-borne vibration at the proposed project property lines.

3.2.7.3 Cumulative Impacts

Sila's proposed EV battery facility in Moses is located approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. As the proposed project would be located within a cluster of existing industrial land uses, any increase in ambient noise levels resulting from the operations of the proposed project would be minor. Noise generated on-site is anticipated to be similar to noise generated at the existing industrial facilities surrounding it, and it is anticipated to be indistinguishable from the existing soundscape at the nearest noise-sensitive receptors. No reasonably foreseeable actions have been identified that would interact with the proposed project to generate cumulative adverse noise and vibration impacts.

3.2.7.4 Proposed Mitigation Measures

No mitigation measures specific to noise and vibration are required.

3.2.8 Regulated Waste (Solid and Hazardous Waste)

3.2.8.1 Affected Environment

The proposed project site is located on existing agricultural land zoned for industrial use and part of the Central Terminals industrial park. Industrial facilities are located adjacent to the proposed project site to

the east. Other surrounding properties are existing agricultural land. Commercial and other industrial facilities are located north of Wheeler Road within approximately a mile of the proposed project site. The proposed project site has been pasture and irrigated pasture and in agricultural use since at least 1952. Surface water covered large portions of the northwest and southeast quadrants of the property up until the 1980s. During the early 2000s, portions of the property were used for storage (possibly sugar beets). Construction or rehabilitation of irrigation wells onsite occurred approximately 10 years ago, and center-pivot irrigation was put in place.

The proposed project site exhibits no indications of spill, releases, or commercial and industrial land uses other than de minimis surface staining at nearby wellheads. Bulk storage of unknown chemicals and petroleum products in drums, totes, and other containers is present along and near the eastern property line. Indications of releases were documented on the adjacent property. Bulk chemical and petroleum use and improper storage on this adjacent property could impact the proposed project site due to its proximity. Potential groundwater migration of contaminants onto the proposed project site from the adjacent property is a recognized environmental concern (REC) (HDR 2022a), but no evidence of this occurring within or adjacent to the proposed project has been documented. A Phase 2 Environmental Site Assessment was conducted specific to soil and groundwater sampling. No contaminates above regulatory thresholds of concern were identified (Landau 2023a and 2023b).

The County Firefighting Training Ground has been located adjacent to the southwest of the proposed project site since at least 2006. Aqueous Film Forming Foams (AFFF) used at these facilities, a major contributor of per- or poly-fluoroalkyl substances contamination to the local groundwater, is a REC (HDR 2022a), but no evidence of this occurring within or adjacent to the proposed project has been documented.

3.2.8.2 Environmental Consequences

3.2.8.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this proposed project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the proposed project, for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.8.2.2 Proposed Project

Construction

Construction of the proposed project is expected to generate minor temporary impacts from regulated waste. Solid waste and sanitary waste generated during construction activities would be limited to common construction-related waste streams. In-state or out-of-state landfills or recycling facilities would have the capability and capacity to accept these wastes. Therefore, there would be no impact associated with the disposal of these waste materials. It is anticipated that wastes from construction will be taken to the nearest facility in Moses Lake – Lakeside Disposal and Recycling. BMPs would be implemented to minimize the quantity of non-hazardous solid waste generated during construction and to ensure proper handling of materials.

Construction activities would involve using hazardous materials that could be released into the environment or result in exposure to workers if not properly managed. These materials, typical of building construction, include small volumes of fuels, paints, adhesives, lubricants, and solvents stored temporarily onsite. Exposure to releases would be minimized by ensuring the handling and usage of materials in a manner originally intended by the manufacturer, proper storage and handling, minimizing leaks and spills, and adhering to site-specific safety and emergency plans and BMPs. Construction waste

quantities are anticipated to be similar to other industrial construction projects in the region and are not expected to exceed landfill availability.

The proposed project does not anticipate dumping waste into surface waters or dumping waste into the ground from septic tanks or other sources. During construction, sanitary waste would be collected in portable toilets that would be maintained and emptied by a contractor on a regular basis.

Operations

Operations are expected to result in minor impacts from a generation of regulated wastes. Proper design and BACT would be used for the equipment and abatement systems to address project hazards and materials properly. A Process Safety Management Plan, Risk Management Plan, and emergency plans are under development to guide the facility process and employees in safe operating procedures. These would be prepared to meet federal, state, and local requirements and completed prior to the start of operation. There would be expected to be 1,350 metric tons per year of non-hazardous solid wastes (primarily consisting of silicon dioxide).

No discharge of waste materials to surface waters are anticipated as part of the proposed project. No waste material would be discharged into the ground from septic tanks or other sources. Site sanitary and wastewater streams would tie into the City sewer system during proposed project operations. Industrial wastewater would be combined with sanitary sewer connections along Wheeler Road. Sources of this industrial wastewater would primarily be from utility systems and would not contain process chemical contaminants. Wastewater is described in Section 3.2.1.2.1.2.

Small amounts of water from floor cleaning in the process module buildings would be collected and hauled off by a waste hauler due to the carbon powder and other chemical residue from raw materials handling during operations. No floor drains to sewers would be present in the process areas.

Waste and recyclable materials generated from the various activities would be managed under local, state, and federal regulations. The management of these activities would comply with regulations and local/state/federal requirements for the disposal of the different waste types. Group14 personnel conducting these activities are trained initially and annually to verify adherence to these programs.

3.2.8.3 Cumulative Impacts

Sila's proposed EV battery facility in Moses is located approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. Despite plans for additional industrial development in the vicinity of the proposed project, no reasonably foreseeable actions have been identified that would combine with the proposed project to generate cumulative adverse impacts on the environment due to regulated waste. Additional projects would likely be subject to similar regulatory requirements related to waste generation and disposal. No reasonably foreseeable actions have been identified that would interact with the proposed project to generate cumulative adverse impacts due to regulated waste.

3.2.8.4 Proposed Mitigation Measures

BMPs and other measures would be used to avoid or contain and control accidental spills or releases of hazardous materials during proposed project construction and operations. In addition to the Preliminary Hazard Assessment completed by Group14 (2022), a detailed Process Hazard Analysis will also be completed prior to operation. Both documents include procedural safety measures for storage, handling, disposal and safeguards and hazard scenarios for emergency response in the event of a spill or leak during operations. Proposed project plans and construction specifications include measures to safely store, handle, and dispose of hazardous waste and contaminated soil or water in the event contamination is encountered.

3.2.9 Utilities and Energy Use

3.2.9.1 Affected Environment

The proposed project would tie into existing electric, gas, water, and sewage infrastructure located outside of the proposed project site. The proposed project is located within the service area of Grant County Public Utilities District (PUD), which generates and delivers electricity to more than 40,000 customers in the County (Grant County PUD 2023). Grant County PUD operates a 13.8 kilovolt/40-megawatt substation approximately 0.7 mile north of the proposed project site. Natural gas is provided to customers in Grant County by Cascade Natural Gas, which serves over 314,500 customers in Washington and Oregon (Cascade 2023). An existing underground natural gas distribution is located parallel to Wheeler Road.

The City serves as the water and sewage utility for customers within the city limits. The City Water Division has an average water production of 4.1 to 17.1 million gpd and includes nine reservoirs (City 2023a). The City's wastewater system consists of two wastewater treatment plants (WWTP): Larson WWTP located approximately 5.6 miles northwest of the proposed project site, and Dunes WWTP located approximately 4.5 miles southwest of the proposed project site (City 2023b). Existing City water main distribution lines are located parallel to Wheeler Road.

3.2.9.2 Environmental Consequences

3.2.9.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this proposed project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the proposed project, for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.9.2.2 Proposed Project

Construction

Construction of the proposed project would have temporary negligible impacts on utilities, including electricity, natural gas, water, and sewers. The proposed project site would rely on portable generators, water tanks, and portable bathrooms during the construction of the proposed project to accommodate an increase in demand for water, electricity, and sewer from workers and equipment. Contractors would build utility lines and connect new structures to existing onsite services once grading is completed. New permanent utility connections would be constructed during the construction period but not relied on for services in new buildings until buildings are operational.

Operations

The proposed project operations would have minor adverse impacts on local utilities and energy use, as the industrial processes involved would increase the demand for electricity, water, and natural gas at the proposed project site. Demand for electricity, natural gas, potable water, sewer, and fire water would require infrastructure tie-ins to existing services as well as limited upgrades to existing utility infrastructure and services.

Electrical power would be supplied from Grant County PUD from an existing substation located on REC Silicon plant property approximately 0.7 miles north of the proposed project site. Grant County PUD provides power from hydroelectric and wind power sources in the region. The BAM Factory is anticipated to require a total power demand between 300-400 million kWh per year. The substation and power grid

have sufficient capacity to supply the proposed project. The PUD would bring power to the proposed property fence line, and the power would be distributed onsite to two transformers stationed at each process module building. The largest power users are the electric furnaces. A secondary distribution-level connection for the non-process buildings in the administration complex would be connected to the existing PUD distribution lines running along the north side of Wheeler Road.

Natural gas would be supplied from Cascade Natural Gas from the existing underground distribution parallel to Wheeler Road. Natural gas would be used for the thermal oxidizers and for heating, ventilation, and cooling of the buildings.

The proposed project is expected to require a total connected potable water demand of 170,000 gpd. The proposed project would require potable water at the administration building, operations building, maintenance building, warehouse, and CUB. Potable water would be purchased from the City and conveyed to various parts of the facility from new underground water lines with a City pipe interconnection along Wheeler Road. The City has confirmed it would have sufficient capacity to meet the potable water needs of the proposed project, and the City of Moses Lake Water Division notes an average overall production ranging from 4.1 to 17.1 million gallons per day, with an average total production of 3 billion gallons per year (https://www.cityofml.com/87/Water). Potable water would be used in the buildings listed above for domestic uses and for safety eyewashes and process use. Process uses include boiler feedwater makeup, cooling tower makeup, and general plant utility stations.

Wastewater discharge would be connected to the City sanitary sewer system on Wheeler Road. Wastewater discharge flow from the plant would be intermittent. The total wastewater flow from six process module buildings would average a continuous 60 gpm resulting in an average daily sanitary sewer load of approximately 100,000 gallons, including domestic sources. This is the largest source of wastewater discharge from the proposed project. Other sources of wastewater from the plant are from utility systems and would not contain process chemical contaminants, as described further in Section 3.2.8.2.2.

In the process module buildings, there would be small amounts of water from floor cleaning (e.g., mopping and wet floor scrubbing machines) that would be collected and hauled off by a waste hauler due to the carbon powder and other chemical residue from raw material handling operations. There would be no floor drains to sewer in the process areas. Sanitary wastewater would be generated from domestic uses, including toilets, kitchens, and showers from the administration building, operations building, maintenance building, warehouse, CUB, and process module buildings. Wastewater would be routed to the City's POTW and the City has confirmed the POTW has the capacity for the proposed wastewater discharge from the proposed project alternative.

The fire water system would be supplied from the City with an interconnection to the water main located parallel to Wheeler Road. Should the City water supply not be able to support direct connection and required fire flow, water would be supplied to an on-site water storage system.

3.2.9.3 Cumulative Impacts

Sila's proposed EV battery facility in Moses is located approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. The proposed project is anticipated to contribute incrementally to cumulative impacts affecting utility infrastructure and services. The proposed project would increase the demand for electricity and natural gas, the production of wastewater discharged to the City, and the demand for treated water from the City; however, future users would each need to coordinate with the City and other utility providers to negotiate resource procurement and discharge. Adherence to all permits for resource use, consumption, and waste management would be a condition of this project proceeding as planned and would be subject to permitting approval and oversight by local (e.g. City of Moses Lake), state (e.g. Washington State Department of Ecology), and federal (e.g. EPA) regulations. Adherence to these permits would also

ensure that significant cumulative impacts would not occur to other populations using the same resources (e.g. salmon populations, wildlife, vegetation, etc.).

3.2.9.4 Proposed Mitigation Measures

No mitigation measures are currently planned for utilities and energy use, but as noted above, adherence to all permits for resource use, consumption, and waste management would be a condition of this project proceeding as planned and would be subject to permitting approval and oversight by local (e.g. City of Moses Lake), state (e.g. Washington State Department of Ecology), and federal (e.g. EPA) regulations. Group14 will also make all efforts to minimize water consumption through cycling in certain processes (where the same in-process water is used until it is too off-specification to use further) rather than single pass-throughs and blowdowns.

3.2.10 Transportation and Traffic

3.2.10.1 Affected Environment

The proposed project site is a commercial-scale facility located on the south side of Wheeler Road between Road L NE and Road N NE and is approximately 2.5 miles north of Interstate 90 (I-90) and approximately 2 miles east of State Route 17 (SR 17). Wheeler Road between SR 17 and Road O NE is an undivided, four-lane roadway. The sidewalk is provided along the north side of the road from SR 17 to the point about 2,000 feet west of Road L NE and along the south side of the road from SR 17 to about 1,200 feet east. The rest of the roadway includes paved shoulders. The posted speed limit between SR 17 and Road L NE is 35 mph, and 50 mph between Road L NE and Road O NE. A traffic signal controls the SR 17 intersection with Wheeler Road whereas the rest of the intersections are controlled with north-south stop signs and Wheeler Road traffic flowing freely (HDR 2022d).

The Moses Lake Municipal Airport is located approximately 1.5 miles northwest of the proposed project site. Grant County International Airport (Port of Moses Lake) is located approximately seven miles northwest of the proposed project site.

The Grant County Transit Authority does not serve the area where the proposed project site is located; however, Grant County Transit Authority, Amtrak, and Greyhound bus stops are located within 3.5 to 4.3 miles of the proposed project site. There are no passenger rail transportation routes or water transportation routes in the vicinity of the proposed project site.

3.2.10.2 Environmental Consequences

3.2.10.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the proposed project, for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.10.2.2 Proposed Project

Construction

Temporary, minor impacts to traffic and transportation are expected during the construction of the proposed project. Construction is expected to last 30 months. The exact breakdown of workers and numbers of shifts could change, but most work is anticipated to occur during one shift per day, 10 hours per day, five days a week. Construction activities occurring at night are anticipated to occur inside the

modules to perform activities such as welding. Total full-time workers are not anticipated to exceed 270 at peak construction. Workers would access the construction site from Wheeler Road.

Operations

The proposed project would generate a minor increase in traffic and transportation from anticipated daily truck and personal vehicle traffic into and out of the proposed project site. The proposed project would employ approximately 254 full-time employees, with 170 employees onsite during the day shift (7 AM to 7 PM) and 84 employees onsite during the second shift. Additionally, five outbound trips are assumed for AM peak hours for miscellaneous purposes, and 20 haul truck trips per day are expected (including inbound and outbound). Approximately 90 percent of the site-generated commuter traffic is assumed to be from SR 17 and 10 percent from Road O. Approximately 67 percent of haul truck traffic is assumed to be from SR 17 and 33 percent from Road O (HDR 2022d).

The main access to the proposed project site for haul trucks and personnel would be from Wheeler Road. A new paved, two-lane access road from Wheeler Road to the administration building would be used for personnel traffic. A second existing gravel access from Wheeler Road would also be used. Both access points would be close to each other near the northeast corner of the proposed project site. Parking for employees' personal vehicles would be provided at the administration building outside the security fence. Employees would then use plant vehicles to travel around the facility within the secured area. No additional parking is proposed for the proposed project during operations.

Based on the traffic impact analysis conducted in October 2022, all but one of the study intersections near the proposed project site are expected to operate at or better than Moses Lake's standard of Level of Service (LOS) D with or without the proposed project during peak AM and PM hours. The Road L NE intersection at Wheeler Road is currently operating at LOS E during the PM peak hour. It is expected to continue at LOS E in 2027 with or without the proposed project due to the high volume of free-flowing east-west traffic that allows somewhat limited gap opportunities for the stop-controlled north-south traffic to turn left or cross (HDR 2022d).

3.2.10.3 Cumulative Impacts

Sila's proposed EV battery facility in Moses is located approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. The City has confirmed no specific road upgrades, and no new roads are proposed in the immediate vicinity of the proposed project. The proposed project, combined with future plans for additional industrial development in the vicinity of the proposed project, could incrementally add to the local and regional cumulative traffic and transportation impacts if future additional development would result in increased traffic.

3.2.10.4 Proposed Mitigation Measures

Mitigation measures would be required for transportation and traffic due to the increased traffic projects for the intersection of Wheeler Road at Road L NE transitioning from LOS E status with or without the proposed project. Group14 has agreed in coordination with the City to participate in a deferred and proportionate cost share for improving the Road L NE intersection. Potential improvements to this intersection could improve LOS from E to C.

3.2.11 Land Use

3.2.11.1 Affected Environment

The proposed project site is located on existing agricultural land that is generally flat and zoned for industrial use. An existing Central Terminals industrial park facility is adjacent to the proposed project site to the east. Other surrounding properties are existing agricultural land. Commercial and other industrial

facilities are located north of Wheeler Road within approximately a mile of the proposed project site. The proposed project site, part of an industrial park, is currently in agricultural production and planted in alfalfa for harvest. The proposed project site has been in agricultural use since at least the 1950s, with surrounding industrial development increasing particularly from 1996 to the present. Agricultural uses have included regular plowing, planting, center pivot irrigation, and harvesting using industrial mechanized farming equipment.

3.2.11.2 Environmental Consequences

3.2.11.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the proposed project, for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.11.2.2 Proposed Project

Construction and Operations

Construction and operations of the proposed project would result in negligible impacts on land use. The proposed project would be consistent with current zoning, which considers the site suitable for heavy industrial uses. The proposed project site is part of the Central Terminals industrial park, and development would be consistent with the Central Terminals buildout of the park.

3.2.11.3 Cumulative Impacts

Sila's proposed EV battery facility in Moses is located approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. Despite plans for additional industrial development near the proposed project, no reasonably foreseeable actions have been identified that would combine with the proposed project to generate cumulative adverse impacts on the environment due to land use. Construction and operations of the proposed project, along with past, present, and future development in the area, would continue a land use trend from agricultural to industrial. Additional projects would likely be subject to similar regulatory requirements related to land use. No reasonably foreseeable actions have been identified that would interact with the proposed project to generate cumulative adverse impacts due to land use.

3.2.11.4 Proposed Mitigation Measures

No mitigation measures would be required for land use.

3.2.12 Geology, Topography, and Soils

3.2.12.1 Affected Environment

The proposed project site is in the Columbia Basin province, which occupies the entire southcentral portion of the State of Washington. The province is a wide, arid lowland area that extends through much of eastern Oregon. Steep river canyons, extensive plateaus, and tall sinuous ridges characterize it. The geology within the proposed project site consists of Pleistocene outburst-flood deposits and alluvium

overlying Tertiary volcanic rocks from the Columbia River Basalt Group. Alluvium deposits are present as a northeast-southwest trending band through the property. The bedrock is made up of generally fine-grained flood basalt flows (WDNR 2022). Based on previous geotechnical borings, the depth of bedrock is approximately eight to 20 feet bgs at the site (AES 2004).

US Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) soil survey identifies soils near the surface of the proposed project site as 52 percent sand and 48 percent silt and clay (NRCS 2022a; WPES 2023) within eight different soil map units. Of these map units, NRCS has classified Ekrub fine sand, 0 to 25 percent slopes, and Scoon silt loam, 5 to 15 percent slopes, as "farmland of unique importance." However, as stated in the City code (Moses Lake Municipal Code 19.03.110(B)) and in accordance with Revised Code of Washington 36.70A.170, the City does not have agricultural lands of long-term commercial significance.

The fine texture of silty soils is erodible by wind and water. according to a geotechnical site investigation on October 13 and 14, 2022, soils at the proposed project site appeared to be native and generally undisturbed. The geotechnical investigations did not identify any geologic hazards such as steep slopes, liquefaction, or landslide zones. No soils unsuitable for construction were encountered at the proposed project site. Soils on the western portion of the proposed project site are considered "poor soils" as they are susceptible to liquefaction (WPES 2023).

3.2.12.2 Environmental Consequences

3.2.12.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this proposed project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the proposed project, for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.12.2.2 Proposed Project

Construction

Impacts on geology, soils, and topography are anticipated to be temporary and minor. The proposed construction is limited to surface and near-surface activity that is not anticipated to affect minerals and deeper geological strata. The subsurface conditions at the proposed project site are geotechnically suitable for construction. The proposed project would result in approximately 110,000 cubic yards of excavation and 34,000 cubic yards of fill, which represents approximately 76,000 cubic yards of export materials. The export material would be disposed of at an authorized facility determined by the contractor. Clearing and excavation during construction could result in temporary erosion hazards as bare soils become exposed to wind, rainfall, or vehicle activity within the proposed project site. These impacts would be avoided and minimized through the implementation of a SWPPP and BMPs as required under the CSWGP.

Operations

Proposed project operations would have negligible impacts on geology, soils, and topography, as soil conditions are conducive to the site's long-term operation and do not present concerns for erosion or liquefaction. The proposed project site is not considered unique farmland and the loss of agricultural soils is negligible as the site is in an industrial park zoned for industrial uses. The City's process to rezone agricultural land to industrial land considers the loss of these farmland soils.

3.2.12.3 Cumulative Impacts

Sila's proposed EV battery facility in Moses is located approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. Despite plans for additional industrial development in the vicinity of the proposed project, no reasonably foreseeable actions have been identified that would combine with the proposed project to generate cumulative adverse impacts on geology, topography, and soils. Additional projects would likely be subject to similar regulatory requirements.

3.2.12.4 Proposed Mitigation Measures

No mitigation measures specific to geology, topography, and soils are required.

3.2.13 Greenhouse Gases

Greenhouse gases (GHGs) are of concern for climate change and include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), and several hydro and per-chlorofluorocarbons. The CEQ issued interim guidance on January 9, 2023, relevant to the consideration of GHGs and climate change effects of proposed projects under NEPA (CEQ 2023). Guidance 26 advises federal agencies to consider "(1) the potential effects of a proposed project on climate change, including by assessing both GHG emissions and reductions from the proposed project and (2) the effects of climate change on a proposed project and its environmental impacts."

3.2.13.1 Affected Environment

Rising global temperatures are associated with weather and climate shifts driving environmental and human impacts across a range of spatiotemporal scales and intensities (IPCC 2013). The Climate Reality Project identified the following climate-related environmental and public health hazards for Washington and the Pacific Northwest: threatened water resources, increased sea level rise, and increased wildfires (CRP 2017). While Moses Lake is expected to experience GHG-driven climate change impacts generally consistent with Intergovernmental Panel on Climate Change (IPCC) forecasts, the type, frequency, and intensity of these impacts are not forecast for the county or the region specifically.

3.2.13.2 Environmental Consequences

3.2.13.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this proposed project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the proposed project, for purposes of this environmental analysis, DOE assumes that the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.13.2.2 Proposed Project

Construction

Construction of the proposed project would result in temporary GHG emissions from sources, including vehicle transportation of equipment and materials, use of construction machinery, and curing of concrete. The use of electricity during construction may indirectly increase GHG emissions depending on electric generation sources/methods employed by local utilities serving the site. The estimation of construction

emissions utilized the California Emissions Estimator Model (CalEEMod), which generates approximate emission projections by considering general assumptions regarding construction equipment usage. CalEEMod was applied using an Industrial-Manufacturing land use classification and the total combined square footage of the project area. When feasible, project-specific values were incorporated; otherwise, default values were utilized. CalEEMod assumed potential equipment based on its algorithms, supplemented by additional equipment specified in the Planning document. Furthermore, construction hours and time frames were assumed by CalEEMod. Emissions were projected over multiple years, resulting in a total estimated CO_2e of 2,100 metric tons associated with construction activities.

Operations

GHG emissions from facility operations would be minimal. Facility operations would include thermal oxidizers, production furnaces, carbon and silicon-containing gas, abatement dust collectors, diesel-fired emergency generators, fire pump engines, and miscellaneous air handling units. Combined, these stationary sources are estimated to emit 26,840 metric tons of CO_2e annually. The proposed project plans to purchase roughly 400,000-megawatt hours per year of electricity for operations. Group14 plans to purchase all hydroelectric power, which would result in zero emissions from operations due to electricity. Therefore, under this scenario, the total GHG emissions of the facility during operations is 26,840 metric tons CO2e annually.

However, to be conservative, a worst-case scenario is also estimated by calculating the emissions using factors based on the current (2022) utility grid mix of generation for the State of Washington. Maximum GHG emissions from purchased electricity for proposed project operations, presuming all electricity is generated from the current grid mix for the State of Washington, would be 33,715 metric tons of CO_2e per year. The total maximum GHG emissions from the project's operations are estimated to be 60,555 metric tons of CO_2e annually.

GHG emission reductions will be realized through the manufacturing of lithium-ion batteries to be used in EVs within the United States rather than importing them from another country. Group14 estimates that production levels at the proposed project site would be sufficient to produce lithium-ion batteries for 600,000 EVs annually (approximately 100,000 EVs per module). It is expected that these EVs would primarily replace conventional gasoline and diesel-fueled vehicles, resulting in a proportional reduction in GHG emissions (primarily carbon dioxide [CO_2]).

The EPA estimates that a typical passenger vehicle emits approximately 4.6 metric tons of CO_2 annually, while EV operation produces no emissions (EPA 2018). Replacing 100,000 conventionally fueled vehicles with EVs would eliminate an estimated 460,000 metric tons of CO_2 annually for every year that an EV displaced a comparable fossil fuel vehicle, and this number would increase if calculated using the full estimated production capacity of 600,000 vehicles. Over the course of the first five years of operation, and using the conservative 100,000 production figure, batteries produced using materials produced at the proposed project would be expected to contribute to the elimination of 2,300,000 metric tons of CO_2 emissions. Over the 25-year operating life of the facility, the proposed project would be expected to contribute to the elimination of a total of 11,500,000 metric tons of CO_2 emissions. These figures above assume a one-to-one replacement of conventional gasoline and diesel-fueled vehicles with EVs and do not account for difference in the emissions generated during the production of vehicles. The figures also assume an EV will be on the road for at least one year and driven an equivalent number of miles as a conventionally fueled vehicle. The emissions reduction contributed by the proposed project would be expected to far exceed the emissions anticipated from the construction and operations of the proposed project during its operational lifetime; therefore, GHG emissions and associated impacts deriving from operations would be considered minor.

Social Cost of Carbon

The social cost of carbon (SCC) is an economic metric used to quantify the long-term damage done by one ton of carbon dioxide emissions. These values reflect the economic impact of carbon emissions and can be used to assess the costs and benefits of regulations and policies related to GHG emissions. The United States Government, under Executive Order 13990, created the Interagency Working Group (IWG) on the Social Cost of Greenhouse Gases to address the costs and benefits of regulations and policies

related to greenhouse gas emissions. According to the IWG's 2021 Technical Support Document, the average 3% estimate for CO_2 emissions occurring in 2025 is $56 per metric ton. The SCC encompasses major GHGs such as CO_2, CH_4, and N_2O. To evaluate the project's SCC, the project was segmented into three phases: construction (Phase 1), operations (Phase 2), and decommissioning (Phase 3). As detailed in the construction discussion, the construction emissions were estimated using CalEEmod. Operational emissions, expected yearly, include onsite stationary combustion and indirect GHG emissions linked to purchased electricity, as detailed in the discussion of the operation. As a note, possible ongoing changes in the electricity grid's decarbonization that may reduce the emissions associated with future electricity purchases were not considered in the worst-case scenario. The facility decommissioning procedures are uncertain and technological advancements may alter both decommissioning methods and the proposed project's overall lifetime. For analytical purposes, decommissioning emissions are conservatively estimated to be equal to construction GHG emissions and are expected to be completed in one year following the proposed project's lifetime.

The annual emissions for each phase were input into the DOE's Social Cost of Carbon Estimating Tool (DRAFT Version) to estimate the total cost of carbon for the proposed project's lifetime. Tables 5, 6, and 7 show the total social cost of each GHG for the three phases of the project. The ranges shown for Phase 2 represent the SCC for the planned purchase of hydroelectric power versus the SCC for the worst-case scenario, which assumes all electricity purchased is from the current grid mix of generation for the State of Washington during the entirety of the project's life.

Table 5. Social Cost of Carbon Dioxide

Present Value (in Base Year) of Estimated SC-CO2 for all CO2 emissions (2020$)				
	5% Average	3% Average	2.5% Average	3% 95th Percentile
Phase 1	$32,481	$111,780	$165,737	$334,613
Phase 2	$6,941,602 – $17,147,466	$26,595,385 - $65,697,152	$40,316,137 - $99,590,789	$80,945,458 - $199,955,219
Phase 3	$18,185	$80,737	$126,315	$247,911
Total	$6,992,267 - $17,198,132	$26,787,902- $65,889,668	$40,608,190 - $99,882,842	$81,527,982 - $200,537,743

Table 6. Social Cost of Methane

Present Value (in Base Year) of Estimated SC-CH4 for all CH4 emissions (2020$)				
	5% Average	3% Average	2.5% Average	3% 95th Percentile
Phase 1	$55	$122	$159	$322
Phase 2	$160,335 - $206,900	$409,145 - $527,968	$551,319 - $711,432	$1,090,686 - $1,407,440
Phase 3	$34	$105	$147	$279
Total	$160,425 - $206,989	$409,372 - $528,194	$551,625 - $711,737	$1,091,287- $1,408,041

Table 7. Social Cost of Nitrous Oxide

Present Value (in Base Year) of Estimated SC-N2O for all N2O emissions (2020$)				
	5% Average	3% Average	2.5% Average	3% 95th Percentile
Phase 1	$441	$1,372	$2,008	$3,613
Phase 2	$1,563,032 - $1,607,875	$5,523,542 - $5,682,011	$8,314,986 - $8,553,541	$14,680,487 - $15,101,665
Phase 3	$254	$1,054	$1,643	$2,816
Total	$1,563,727 - $1,608,570	$5,525,968- $5,684,436	$8,318,637 - $8,557,191	$14,686,915 - $15,108,094

The analysis indicates that Phase 2, the operational phase, incurs the highest SSC. In the worst-case scenario, electricity purchases account for 81% of the annual emissions during operations. The peak year for the social cost of CO_2 emissions occurred in 2024, totaling $37,756 - $3,027,577 when considering both construction and operational phases at the average 3% rate. The planned purchase of hydroelectric power will significantly reduce emissions and total SCC. In the worst-case scenario, as technology continues to advance in grid energy generation, future emissions are expected to decline, potentially reducing the overall operational social cost of carbon. The proposed project's lifespan significantly influences the total estimated cost for Phase 2, currently proposed at 25 years. Phases 1 and 3 collectively contribute less than 1% to the proposed project's total social cost in both scenarios.

The indirect impacts of the proposed project were not included in the SCC estimating tool. These impacts include the proposed project's contribution to displaced emissions that the use of lithium-ion batteries manufactured at the facility for EVs over comparable fossil fuel vehicles. An estimated replacement of 100,000 conventionally fueled vehicles with EVs (based on the assumption that most, if not all, battery components produced from Group14's facility will be used for EVs) results in a reduction of an estimated 460,000 metric tons of CO_2 annually, which would subsequently increase if using the 600,000 annual production capacity. The projected greenhouse gas offsets resulting from the proposed facility's contribution to the emissions reduction of EVs would exceed the greenhouse gas emissions from construction, operations and decommissioning of the proposed project over its operational lifetime. A summary of the methodology and calculations is in Appendix F.

1.1.1.1 Cumulative Impacts

Sila's proposed EV battery facility in Moses is located approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. The proposed project would incur a net-positive, long-term impact on global climate and GHG emissions through its contributions to decarbonizing US transportation which would markedly outweigh its GHG emissions. As noted above, within the first 25 years of operation, the proposed project is expected to contribute to a reduction in carbon dioxide emissions totaling 11,500,000 metric tons (based on the 100,000 EV production estimates, which would increase if one uses the 600,000 total production estimates). In general, the potential benefits associated with reducing CO_2 emissions would support a reduction in GHG concentrations and reduce the associated 28 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).

1.1.1.2 Proposed Mitigation Measures

Market displacement of gasoline and diesel-powered vehicles through battery production for US EV manufacture is expected to realize GHG emissions reductions greater than GHG emissions from facility

operations. Therefore, the impact on GHG emissions from this proposed project is net-positive, and no mitigation measures are proposed.

3.2.14 Socioeconomics

3.2.14.1 Affected Environment

The city of Moses Lake, Washington, is the largest in Grant County, with a population of 25,146 residents (USCB 2020a) within approximately 17.95 square miles (USCB 2020b). Moses Lake is in the middle of the state, intersected by both I-90 and SR-17. Grant County is currently home to an estimated 101,311 residents, reflecting a 13.7% increase in population since the 2010 US Census (USCB 2022). The total county labor force is currently estimated at 48,776 (WSESD 2023a). The county's estimated unemployment rate at the end of 2022 (8.4%) and in June 2023 (3.4%) were both higher than the state of Washington's at the same time periods (4.6% and 3.3%, respectively) (WSESD 2023b). By number of jobs, the largest economic sectors in the county are agriculture, forestry, and fishing (23.1%), local government (17.2%), manufacturing (10.8%), retail (9%), and health services (7.3%) with the remaining 32.8% in all other industries (WSESD 2021). The most common job types are estimated to be farming, fishing, and forestry occupations (16.7%), management occupations (11.8%), office and administrative support occupations (7.73%), production occupations (7.31%), and sales (6.61%) (DataUSA 2021).

3.2.14.2 Environmental Consequences

3.2.14.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this proposed project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would essentially be identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the proposed project, for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.14.2.2 Proposed Project

Construction

The proposed project would result in a minor, beneficial impact on socioeconomics during construction. Under the proposed project, local construction workers would be employed full-time, and taxes would continue to be paid on the property. Therefore, minor beneficial impacts would occur. Construction workers employed for the construction period (approximately 270 individuals) would be hired from the local population, who may be currently unemployed or underemployed and residing and paying taxes in Grant County or the surrounding area, with a preference for contracting local companies for the work.

Increased sales transactions for the purchase of materials and supplies would generate additional tax revenues for local and state governments, which would have a minor beneficial impact in Grant County. Secondary jobs related to increased economic activity stimulated by the proposed project may be created, including additional retail and business employment, which may, through a multiplier effect, yield additional sales and income tax revenues for local and state governments, also generating a minor beneficial impact.

Operations

The proposed project would have a minor beneficial impact on socioeconomic conditions in Moses Lake and Grant County. The proposed project would create approximately 254 new full-time jobs, resulting in a minor, beneficial impact. Labor requirements for the proposed project are not expected to change drastically, as most jobs would be in manufacturing, which is already represented in this region. No

substantial influx in population is expected, so the impact on housing demand is expected to be negligible.

Group14 has developed and implemented a Community Benefits Plan (CBP) as a part of this project. The CBP supports the goal of ensuring broadly shared prosperity in the clean energy transition. Group14's plan has 11 key goals identified over the course of the project. All these goals align with at least one of the overarching policy priorities set forth by the White House; Implementing the Justice 40 Initiative, Investing in America's Workforce through Good Jobs, Advancing Diversity, Equity, Inclusion, Accessibility, and Engaging Communities and Labor. Group14 has set aside funding to support workforce development, scholarships, internships, and apprenticeship programs with a focus on supporting Disadvantaged Communities (DACs) as identified by the Climate and Economic Justice Screening tool. Community partnerships have been established between Group14 and young professionals, families, youth, tribal nations, and underserved populations to gather qualitative input regarding community vision, needs, opportunities, and priorities.

3.2.14.3 Cumulative Impacts

Sila's proposed EV battery facility in Moses is located approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. There is currently no forecast for a population influx to Moses Lake or Grant County from the proposed project or from future industrial expansion within the industrial district. However, the expansion of neighboring industrial facilities could theoretically result in a local population shift. Despite the potential for additional industrial development in the vicinity of the site, no reasonably foreseeable actions have been identified that would interact with the proposed project to generate cumulative adverse impacts on socioeconomic conditions in Moses Lake or Grant County.

3.2.14.4 Proposed Mitigation Measures

No mitigation measures for socioeconomic factors are required.

3.2.15 Environmental Justice

President Biden established the Justice40 Initiative in Executive Order 14008, Tackling the Climate Crisis at Home and Abroad. Building on Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, the Justice40 Initiative established a goal that at least 40% of the benefits of certain federal investments, including investments in clean energy, energy efficiency, and clean transit, flow to disadvantaged communities (DACs). To assist agencies with identifying DACs, the White House CEQ developed the Climate and Economic Justice Screening Tool (CEJST) (CEQ 2022), which identifies census tracts as disadvantaged based on consideration of environmental and socioeconomic burdens.

Secretary Granholm published a letter to DOE stakeholders on July 25, 2022, to inform them that "DOE intends to implement the Justice40 Initiative throughout all its BIL efforts, wherever authorized by law, and within well-established DOE programs that fall within the climate and clean energy investment categories covered by Justice40." (DOE 2022a). In follow-up documents, DOE has adopted eight policy priorities that govern the Department's implementation of the Justice40 Initiative.

1. Decrease energy burden in DACs.
2. Decrease environmental exposure and burdens for DACs.
3. Increase parity in clean energy technology (e.g., solar, storage) access and adoption in DACs.
4. Increase access to low-cost capital in DACs.
5. Increase clean energy enterprise creation and contracting (Minority-Owned Business/Disadvantaged Business Enterprise) in DACs.
6. Increase clean energy jobs, job pipeline, and job training for individuals from DACs.
7. Increase energy resiliency in DACs.

8. Increase energy democracy in DACs.

DOE concurrently published a list of the Department's programs covered by the Justice40 Initiative because the programs incorporate investments that can benefit DACs (Office of Management and Budget Memorandum 21-28 [M-21-28]). Within the Manufacturing and Energy Supply Chains Office, DOE identified the Battery Manufacturing and Recycling Grants and the Battery Material Processing Grants programs as Justice40 covered programs (Section II.A.ii Clean Energy and Energy Efficiency within Office of Management and Budget M-21-28).

Additionally, DOE developed a DAC Reporter to define and identify DACs for the purposes of Department programs. The DAC Reporter identifies DACs based on the cumulative burden the community faces from 36 burden indicators. The top 20% of communities within a state are designated as disadvantaged and interested parties can use the DAC Reporter to generate community-specific reports that include the results for each of the 36 burden indicators. Nationwide, 13,581 communities have been identified as disadvantaged by the DAC Reporter.

3.2.15.2 Affected Environment

The proposed project is located within a census tract that was not designated as disadvantaged in either the DAC Reporter or the CEJST. The DAC Reporter ranked the cumulative burden faced by the census tract as being in the top 63% of communities in the State of Washington (DOE 2022b), well below the 80% threshold required for a community to be designated as disadvantaged. There is one nearby census tract, in Moses Lake North (outside the city limits), that is designated as disadvantaged by the DAC Reporter (DOE 2022b).

The CEJST identified three adjacent census tracts to the census tract occupied by the proposed project site as disadvantaged because they meet more than one burden threshold as well as the associated socioeconomic threshold (CEQ 2022). The burden thresholds currently met by the adjacent tracts include those related to climate change, legacy pollution, and workforce development.

3.2.15.3 Environmental Consequences

3.2.15.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this proposed project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would essentially be identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.15.2.2 Proposed Project

Construction and Operations

The proposed project is anticipated to provide positive short- and long-term benefits to DACs in the local area and, therefore, have a minor beneficial impact on environmental justice and equity.

DOE's selection of the proposed project is consistent with the provisions of Executive Orders 12898 and 14008, aligns with DOE's eight policy priorities, and advances the DOE's progress toward the goal established by the Justice40 Initiative that at least 40% of the benefits of certain types of federal investment flow to DACs.

The proposed project supports DOE's stated environmental justice policy priority to increase clean energy jobs, the job pipeline, and job training for individuals from DACs. As discussed in Section 3.2.14 Socioeconomics, Group14 expects to employ approximately 270 individuals during the construction stage

and create approximately 254 new FTE jobs. Group14 has set aside funding to support workforce development, scholarships, internships, and apprenticeship programs with a focus on supporting Disadvantaged Communities (DACs) as identified by the Climate and Economic Justice Screening tool. Community partnerships have been established between Group14 and young professionals, families, youth, tribal nations, and underserved populations to gather qualitative input regarding community vision, needs, opportunities, and priorities.

3.2.15.4 Cumulative Impacts

Sila's proposed EV battery facility in Moses is located approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. Although Group14's proposed project is in an industrial park with adjacent industrial neighbors that may potentially expand their individual operations, there are no known plans for additional industrial development in the vicinity of the proposed project. No reasonably foreseeable actions have been identified that would interact with the proposed project to generate cumulative adverse impacts to environmental justice.

3.2.15.5 Proposed Mitigation Measures

No mitigation measures would be required for environmental justice.

3.2.16 Cultural Resources

3.2.16.1 Affected Environment

Located within the Columbia Basin, human occupation of the proposed project site likely began circa 12,000 years before the present. Much of what is known of pre-contact human populations (before contact with Euro-Americans) in this region is based on extensive archaeological investigations during the 1950s and 1960s in advance of large-scale hydroelectric and irrigation network developments. Additional information is held by the Indian tribes whose traditional territories include the proposed project site. The earliest arrival of Euro-Americans to the Columbia Basin was likely by travel along the Columbia River in the early nineteenth century.

The Proposed Project site lies within the traditional territories of the Sinkayuse Tribe, currently represented only by the Confederated Tribes of the Colville Reservation. According to the Tribal Historic Preservation Officer (THPO) of the Confederated Tribes of the Colville Reservation, the precontact and ethnohistoric Sinkayuse group later came to be referred to as the Moses-Columbia, based on the following events:

1) Several bands/tribes are referred to as the Middle Columbia Salish, which includes the Sinkayuse;

2) Through the family of leaders for this group, Chief Moses rose to prominence during the 1856-1858 war between the United States and several tribal groups as a consequence of events related to the 1855 Treaty with the Yakama Nation;

3) Not all tribal groups involved in the war were signatory to the Yakama Treaty nor part of the Yakama Nation; and

4) During and after the wars, some people from several of the Middle Columbia Salish bands became affiliated with Moses and were located at the Moses Reserve in 1879. When that reservation returned to the public domain, Moses and other chiefs signed the Moses Agreement, relocating Moses and his people to the Colville Reservation.

The Moses-Columbia are a member tribe of the Colville Confederacy. No Sinkayuse or Moses-Columbia signed the Yakama Treaty; they are not members of the Yakama Nation, and the Moses-Columbia never ceded any territory or rights.

No previously recorded archaeological resources are within one mile of the proposed project site. The nearest site is the Clover Drive Debris Scatter, which is a historical refuse scatter located 2.2 miles northwest of the proposed project site. Seven previously recorded historical resources are within one mile of the proposed project site. These resources include railroad and irrigation-related structures and features. One of these resources is the Columbia Basin East Canal Feeder Canal RCD 180+182, a historical irrigation canal located 0.3 miles southwest of the proposed project site that was determined eligible for listing in the National Register of Historic Places (NRHP) by the Washington SHPO in 2019. Another resource is the Columbia Basin East Low Canal Feeder EL20U1 which was built in 1946 and recorded in 2007 and is currently unevaluated for listing in the NRHP by SHPO. One previously recorded cemetery, the Guardian Angels Cemetery, is a modern cemetery that opened in 2009 and is located 0.95 miles west of the proposed project site. There are no known records of existing or potential Traditional Cultural Properties located within one mile of the proposed project site based on a records review of the Washington Information System for Architectural and Archeological Records Data. No historical cultural resources were observed during pedestrian and subsurface surveys of the proposed project site in October 2022 (HDR 2022e).

3.2.16.2 Environmental Consequences

3.2.16.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this proposed project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the proposed project, for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.16.2.2 Proposed Project

Construction and Operations

DOE initiated consultation with the Washington State Department of Archaeology and Historic Preservation (DAHP) on December 19, 2023, and initiated tribal consultation with the Confederated Tribes of the Colville Reservation, Spokane Tribe of Indians, Confederated Tribes of Warm Springs, and Yakama Nation by phone and by formal letter throughout December 2023. Responses from DAHP and Tribal Nations, if received, are included in Appendix B. DAHP concurred with the results and recommendations of the November 2022 cultural resources survey report and did not recommend direct archaeological supervision of the proposed project as no cultural resources were found during the survey. In a letter dated December 18, 2023, DAHP also concurred with DOE's determination of no historic properties affected, with the stipulation for an Inadvertent Discovery Plan (IDP), which has been developed for the proposed project and is available in Appendix G. In a letter dated on January 31, 2024, the Spokane Tribe of Indians deferred to the Colville Reservation and noted no further concerns on the project. In response to the consultation letter sent by DOE to the Confederated Tribes of the Colville Reservation, DOE was invited to participate in a government-to-government consultation with the Colville Business Council, which occurred on March 4, 2024. Comments and questions received by DOE from the Colville Business Council were used to inform the content of this Draft EA, and this Draft EA will be sent to the Colville Business Council to provide the opportunity to review and provide additional comments as part of the 30-day public comment period.

3.2.16.3 Cumulative Impacts

Sila's proposed EV battery facility in Moses Lake is located approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as

demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. Despite plans for additional industrial development in the vicinity of the proposed project, no reasonably foreseeable actions have been identified that would combine with the proposed project to generate cumulative adverse impacts on cultural resources. Additional projects would likely be subject to similar regulatory requirements.

3.2.16.4 Proposed Mitigation Measures

An IDP has been developed for implementation during proposed project construction as the proposed project is within an area that ranges from very high to moderately low risk for containing cultural resources. DAHP concurred with the IDP on March 16, 2023. The IDP details the following: construction crew responsibilities for reporting in the event of a discovery of cultural material during construction, requirements to stop work, documentation procedures, and directions for notification of local law enforcement officials (as required), appropriate client officials, DAHP, and affected Indian tribes. The IDP has been included in Appendix G.

3.2.17 Public and Occupational Health and Safety

3.2.17.1 Affected Environment

The proposed project site has been used for agricultural purposes since at least the 1950s, with no known historical releases resulting in soil or groundwater contamination and no known current sources of emissions or effluents. However, bulk storage of unknown chemicals and petroleum products in drums, totes, and other containers is present along and near the eastern property line, and there are known indications of releases on the adjacent property. Additionally, the County Firefighting Training Ground has been located on an adjacent property to the southwest since at least 2006, where AFFF is frequently used (HDR 2022a).

3.2.17.2 Environmental Consequences

3.2.17.2.1 No Action Alternative

It is Group14's intent to proceed in the absence of DOE funding, and, as detailed elsewhere in this EA, Group14 initiated site preparation and construction work. DOE recognizes that this proposed project might continue if DOE decides not to provide financial assistance. If the proposed project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the proposed project and the impacts of not proceeding with the proposed project, for purposes of this environmental analysis, DOE assumes the proposed project would likely not proceed without DOE assistance. As a result, no impacts are anticipated, and existing conditions would persist under the No Action Alternative.

3.2.17.2.2 Proposed Project

Construction

Risks to public and occupational health and safety during the construction of the proposed project are expected to be temporary and minor. Occupational hazards present during the construction of the proposed facility would be typical of a construction site and include work around heavy, mobile equipment; seasonal weather conditions; exposure to electrical, mechanical, fall, and noise hazards; and hazardous materials. These safety risks to construction workers would be managed and reduced through the implementation of safety and emergency plans.

Construction activities would involve the use of hazardous materials that could be released into the environment or result in exposure to workers if not properly managed. These materials are typical of building construction and include small volumes of fuels, paints, adhesives, lubricants, and solvents stored temporarily on site. Exposure or releases could occur if materials are used in a manner not

originally intended by the manufacturer, if wastes are not stored or handled properly, if materials leak from mobile construction equipment, or if fuel is spilled during refueling. The risk of these releases to the environment would be reduced by adherence to site-specific plans and BMPs.

Operations

Operations of the proposed project would result in minor impacts to public and occupational health and safety. In the design of the facility process, industry guidelines have been followed to reduce the possibility and extent of issues with these hazards to decrease risks of fire and explosion. A Process Safety Management Plan, Risk Management Plan, and emergency plans would be prepared to guide the facility process and employees in safe operating procedures. The proposed project facilities would also be secured by security fencing and surveillance cameras.

Safety practices would be equal to or exceed industry operating standards. Company personnel and contract employees would undergo safety and process operations training on a routine basis, including training in emergency response.

Six safety showers would be required on each floor of a process module building, totaling six per building. The utility building would also require a safety shower. A tepid water system would serve as safety showers for each structure.

The process would also adhere to strict industry safety standards for the safe handling of carbon and silicon-containing gases and other hazardous gases, including inert-gas purging systems, trickle-purged vents for overpressure devices, backflow prevention and isolation devices, use of Diameter Index Safety System fittings, blast containment walls, double-walled piping, cathodic protection for sub-grade piping, and ventilated gas distribution cabinets. Continuous instrumentation-based hazardous gas monitoring would be required around the furnaces to detect hydrogen, carbon, and silicon-containing gases, and other gases used in production. Contained areas that use nitrogen for inerting or processing would also have continuous instrumentation-based monitoring for oxygen levels.

The fire water system would be served by water supplied by the City with an interconnection to the water main at Wheeler Road. Water would be supplied to an onsite water storage system. A sprinkler system throughout each module is required. Occupied spaces such as the operations and administration buildings would also require sprinkler and fire detection systems. Due to the square footage and type of material stored, the warehouse would also require a sprinkler system.

The site would require a fire water loop with hydrants at code-defined locations. A branch from the fire main would feed each building requiring a sprinkler system (i.e., process module buildings, operations buildings, and administration building). A fire water riser would supply the sprinkler piping and would include an external fire department connection.

Process equipment storing and handling granular phenolic monomer, granular nitrogenous crosslinker, carbon, and silicon-carbon composite material is supplied with nitrogen gas to inert the environment. This would reduce the ignition potential. Electrical rooms and power distribution centers would also require FM200-style fire suppression systems.

3.2.17.3 Cumulative Impacts

Sila's proposed EV battery facility in Moses is approximately 6,500 feet northeast of the proposed project site. The Sila facility utilizes an existing 613,000-square-foot building on a 162-acre site. The facility would be similar in nature to the proposed project and would result in similar impacts as demonstrated in the State Environmental Policy Act Checklist for the Sila facility (Sila 2023). The Sila facility would be subject to the same permitting processes to evaluate impacts and provide mitigation if necessary. Despite plans for additional industrial development near the proposed project, no reasonably foreseeable actions have been identified that would combine with the proposed project to generate cumulative adverse impacts to public and occupational health and safety. Additional projects would likely be subject to similar regulatory requirements.

3.2.17.4 Proposed Mitigation Measures

Risk mitigation for handling hazardous materials would be established through defined operational procedures (e.g., hazardous materials communication, personal protective equipment, and chemical management), including maintenance of equipment in compliance with federal, state, and local occupational health and safety requirements, environmental regulations, and manufacturer recommendations.

BMPs and other measures would be used to avoid or contain and control accidental spills or releases of hazardous materials during proposed project construction. Proposed project plans and construction specifications include measures to safely handle and dispose of contaminated soil or water in the event contamination is encountered during construction. Construction contractors would be required to comply with applicable provisions of the Occupational Safety and Health Administration and Washington Industrial Safety and Health Act for construction activities. The contractor would also prepare a health and safety plan for the proposed project before the start of construction. This plan would comply with applicable health and safety regulations and provide measures to control environmental health and occupational safety hazards.

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APPENDIX A

Environmental Synopsis

ENVIRONMENTAL SYNOPSIS
Bipartisan Infrastructure Law Battery (BIL) Materials Processing and Battery Manufacturing
DE-FOA-0002678

April 2023

National Energy Technology Laboratory
U.S. Department of Energy
Pittsburgh, PA
Morgantown, WV
Albany, OR

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CONTENTS

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INTRODUCTION

The United States Department of Energy (DOE or the Department) prepared this Environmental Synopsis pursuant to the Department's responsibilities under Section 216 of the DOE's National Environmental Policy Act (NEPA) Implementing Procedures set forth in 10 CFR Part 1021. This synopsis summarizes the consideration given to environmental factors and records that the relevant environmental consequences of reasonable alternatives were evaluated in the process of selecting awardees seeking financial assistance under The Office of Manufacturing and Energy Supply Chains and the Office of Energy Efficiency and Renewable Energy, which jointly issued the Funding Opportunity Announcement (FOA) DE-FOA-0002678 Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing. Projects awarded under FOA-0002678 to be funded, in whole or in part, with funds appropriated by the Infrastructure Investment and Jobs Act[1], also more commonly known as the BIL. The BIL is a once-in-a-generation investment in infrastructure, which will grow a more sustainable, resilient, and equitable economy through enhancing U.S. competitiveness in the world, creating good jobs, and ensuring stronger access to these economic benefits for disadvantaged communities (DACs). The BIL appropriates more than $62 billion to the DOE[2] to deliver a more equitable clean energy future for the American people by investing in American manufacturing and workers; expanding access to energy efficiency and clean energy for families, communities, and businesses; delivering reliable, clean, and affordable power to more Americans; and building the technologies of tomorrow through clean energy demonstrations.

The BIL will invest more than $7 billion in the batteries supply chain over the five-year period encompassing fiscal years (FYs) 2022 through 2026. This includes sustainable sourcing of critical minerals from secondary and unconventional sources, reducing the need for new extraction and mining; sustainable processing of critical minerals; and end-of-life battery collection and recycling. The activities to be funded under this FOA support BIL Sections 40207 (b) & (c) and the broader government-wide approach to upgrading and modernizing infrastructure, including by strengthening critical domestic manufacturing and supply chains to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis and advance environmental justice. These BIL Sections are focused on:

- Creating and retaining good-paying jobs, where workers are properly classified as employees, free from discrimination and harassment, with a free and fair choice to join, form, or assist a union;
- Supporting inclusive and supportive workforce development efforts to strengthen America's competitive advantage based on innovation, efficiency, and a skilled and diverse workforce up and down the supply chain;
- Ensuring that the U.S. has a viable battery materials processing industry to supply the North American battery supply chain;

1. Infrastructure Investment and Jobs Act, Public Law 117-58 (November 15, 2021).

2. U.S. Department of Energy. November 2021. "DOE Fact Sheet: The Bipartisan Infrastructure Deal Will Deliver For American Workers, Families and Usher in the Clean Energy Future." https://www.energy.gov/articles/doe-fact-sheet-bipartisan-infrastructure-deal-will-deliver-american-workers-families-and-0

- Expanding the capabilities of the U.S. in advanced battery manufacturing;
- Enhancing national security by reducing the reliance of the U.S. on foreign competitors for critical materials and technologies;
- Enhancing the domestic processing capacity of minerals necessary for battery materials and advanced batteries; and
- Ensuring that the U.S. has a viable domestic manufacturing and recycling capability to support and sustain a North American battery supply chain.

The DOE initially selected 21 projects under twelve topic areas of interest (AOIs) and provided cost-shared funding for project definition activities; all of the projects are subject to the completion of project-specific NEPA reviews. FOA-0002678 supports new, retrofitted, and expanded commercial-scale domestic facilities to produce battery materials, processing, and battery recycling and manufacturing demonstrations. As required by section 216, this synopsis does not contain business sensitive, confidential, trade secret or other information that statues or regulations would prohibit the DOE from disclosing. It also does not contain data or other information that may reveal the identity of the offerors.

BACKGROUND

The projects that will result from this FOA are cost-shared collaborations between the government and industry to increase investment in battery materials processing and battery manufacturing projects. In contrast to other federally funded activities, these projects are not federal projects; instead, they are private projects seeking federal financial assistance. Under the FOA, industry proposes projects that meet their needs and those of their customers while furthering the national goals and objectives of DOE. The successful development of battery materials processing and battery manufacturing projects is a key objective of the nation's effort to help mitigate the effects of climate change, gain energy independence, and bolster the domestic supply chain.

Awardees under this FOA would receive assistance using funds appropriated by the Infrastructure Investment and Jobs Act, Public Law 117-58 (November 15, 2021) also known as the Bipartisan Infrastructure Law (BIL). The activities to be funded under this FOA support BIL Sections 40207(b) & (c) and the broader government-wide approach to upgrading and modernizing infrastructure, including by strengthening critical domestic manufacturing and supply chains to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis and advance environmental justice.

The applications reviewed under this FOA were selected for negotiations in October 2022. Twelve topic areas of interest (AOIs) were included in the FOA and each AOI outlined project objectives that were specific to that AOI. The twelve AOIs were separated according to the BIL sections 40207(b)(3)(A) and 40207(c)(3)(A):

Areas of Interest	Title
Battery Material Processing Grants pursuant to Section 40207(b)(3)(A)	
1	Commercial-scale Production Plants for Domestic Separation of Critical Cathode Battery Materials from Domestic Feedstocks
2	Commercial-scale Domestic Production of Battery-Grade Graphite from Synthetic and Natural Feedstocks
3	Commercial-scale Domestic Separation and Production of Battery-grade Precursor Materials (Open Topic)
4	Demonstrations of Domestic Separation and Production of Battery-grade Materials from Unconventional Domestic Sources
5	Demonstrations of Innovative Separation Processing of Battery Materials Open Topic
Battery Component Manufacturing and Recycling Grants pursuant to Section 40207(c)(3)(A)	
6	Commercial-scale Domestic Battery Cell Manufacturing
7	Commercial-scale Domestic Battery Cathode Manufacturing
8	Commercial-scale Domestic Battery Separator Manufacturing
9	Commercial-scale Domestic Next Generation Silicon Anode Active Materials and Electrodes
10	Commercial-scale Domestic Battery Component Manufacturing Open Topic
11	Commercial-scale Domestic Battery Recycling and End-of Life Infrastructure
12	Domestic Battery Cell and Component Manufacturing Demonstration Topic

AOIs 1–3 and 6–11 were directed to commercial level projects. AOIs 4, 5, and 12 were directed to demonstration level projects. Each level had different evaluation criteria and each application was evaluated against the criteria as outlined below:

A. Technical Review Criteria AOIs 1–3, 6–11 (commercial)

Criterion 1: Technical Merit, Project Management, and Impact (30%)

Criterion 2: Commercialization and Market Acceptance (30%)

Criterion 3: Cost Share (10%)

Criterion 4: Qualifications and Resources (10%)

Criterion 5: Equity Plan: Quality Jobs & Community Benefits (20%)

B. Technical Review Criteria AOIs 4, 5, and 12 (demonstration)

Criterion 1: Technical Merit, Project Management, and Impact (40%)

Criterion 2: Commercialization and Market Acceptance (20%)

Criterion 3: Cost Share (10%)

Criterion 4: Qualifications and Resources (10%)

Criterion 5: Equity Plan: Quality Jobs & Community Benefits (20%)

These criteria represented the total evaluation scoring. However, the selection official also considered program policy factors, in making final selections.

As a federal agency, DOE must comply with NEPA (42 U.S.C. §§ 4321 *et seq.)* by considering potential environmental issues associated with its actions prior to deciding whether to undertake these actions. The environmental review of applications received in response to FOA-0002678 was conducted pursuant to Council on Environmental Quality Regulations (40 Code of Federal Regulations (CFR) Parts 1500–1508) and DOE's NEPA Implementing Procedures (10 CFR Part 1021), which provide directions specific to NEPA in the context of procurement and financial assistance actions.

PURPOSE AND NEED

The overall purpose and need for DOE action pursuant to the Office of Manufacturing and Energy Supply Chains in collaboration with the Office of Energy Efficiency and Renewable Energy program and the funding opportunity under the BIL is to accelerate the development of a resilient supply chain for high-capacity batteries by increasing investments in battery materials processing and battery manufacturing projects. The BIL investments in the battery supply chain will include five main steps including: (1) raw material production, (2) materials processing including material refinement and processing, (3) battery material /component manufacturing and cell fabrication, (4) battery pack and end use product manufacturing, and (5) battery end-of-life and recycling. Projects selected are needed to meet the focus of the BIL sections: a) creating and retaining good-paying jobs; b) supporting inclusive and supportive workforce development efforts to strengthen America's competitive advantage; c) ensuring that the United States has a viable battery materials processing industry to supply the North American battery supply chain; d) expanding the capabilities of the United States in advanced battery manufacturing; e) enhancing national security by reducing the reliance of the United States on foreign competitors for critical materials and technologies; f) enhancing the domestic processing capacity of minerals necessary for battery materials and advanced batteries; and g) ensuring that the United States has a viable domestic manufacturing and recycling capability to support and sustain a North American battery supply chain.

DOE intends to further this purpose and satisfy this need by providing financial assistance under cost-sharing arrangements to this project and the other 20 projects selected under this FOA. This project and the other selected projects are needed to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis. These projects would meet the objective.

ALTERNATIVES

The DOE received numerous eligible applications in twelve AOIs. AOIs 1 through 5 are under Battery Material Processing Grants pursuant to Section 40207(b)(3)(A); AOIs 6 through 12 are under Battery Component Manufacturing and Recycling Grants pursuant to Section 40207(c)(3)(A).

Detailed requirements for each AOI are listed in the FOA. Applications were accepted, reviewed, and initial selections were made; all of the projects are subject to the completion of project specific NEPA reviews. AOIs and number of initial selections are listed in the table below:

AOI	AOI Title	Number of Initial Selections
1	Commercial-scale Production Plants for Domestic Separation of Critical Cathode Battery Materials from Domestic Feedstocks	4
2	Commercial-scale Domestic Production of Battery-Grade Graphite from Synthetic and Natural Feedstocks	3
3	Commercial-scale Domestic Separation and Production of Battery-grade Precursor Materials (Open Topic)	2
4	Demonstrations of Domestic Separation and Production of Battery-grade Materials from Unconventional Domestic Sources	1
5	Demonstrations of Innovative Separation Processing of Battery Materials Open Topic	1
6	Commercial-scale Domestic Battery Cell Manufacturing	0
7	Commercial-scale Domestic Battery Cathode Manufacturing	2
8	Commercial-scale Domestic Battery Separator Manufacturing	2
9	Commercial-scale Domestic Next Generation Silicon Anode Active Materials and Electrodes	2
10	Commercial-scale Domestic Battery Component Manufacturing Open Topic	1
11	Commercial-scale Domestic Battery Recycling and End-of Life Infrastructure	1
12	Domestic Battery Cell and Component Manufacturing Demonstration Topic	2

ENVIRONMENTAL REVIEW

DOE assembled environmental review teams to assess all applications that met the mandatory requirements. The review teams considered 20 resource areas that could potentially be impacted by the technologies and sites proposed for each project that was selected for negotiations. These resource areas consisted of:

- Aesthetics
- Air Quality
- Biological Resources
- Climate
- Community Services
- Cultural Resources
- Environmental Justice
- Floodplains
- Geology
- Ground Water
- Human Health and Safety
- Land Use
- Noise
- Socioeconomics
- Soils
- Surface Water
- Transportation and Traffic
- Utilities
- Wastes and Materials
- Wetlands

The review teams were composed of environmental professionals having expertise in the resource areas considered by the DOE and with experience evaluating the impacts of industrial facilities and energy-related projects. The review teams considered the information provided as part of each application, which included narrative text, worksheets, and the environmental information volumes for the sites proposed by the applicant. Reviewers conducted preliminary analyses to identify the potential range of impacts that would be associated with each application. In addition, reviewers identified both direct and indirect potential impacts to the resource areas mentioned above, as well as short-term impacts that might occur during construction and start-up, and long-term impacts that might occur over the expected operational life of the proposed project and beyond. The reviewers also considered any mitigation measures proposed by the applicant, and any reasonably available mitigation measures that may not have been proposed.

Reviewers assessed the potential for environmental issues and impacts using the following characterizations:

- **Beneficial** – Expected to have a net beneficial effect on the resource in comparison to baseline conditions.
- **None (negligible)** – Immeasurable or negligible in consequence (not expected to change baseline conditions).
- **Low** – Measurable or noticeable but of minimal consequence (barely discernable change in baseline conditions).
- **Moderate** – Adverse and considerable in consequence but moderate and not expected to reach a level of significance (discernable, but not drastic, alteration of baseline conditions).
- **High** – Adverse and potentially significant in severity (anticipated substantial changes or effects on baseline conditions that might not be mitigable).

For cases in which an application failed to provide sufficient information to support a determination among the above characterizations, the reviewers assigned one of the following characterizations:

- **Limited Concern** – The potential for substantial adverse impacts would be negligible to low based on background information about the resource area with respect to the geographic location of the project.
- **Elevated Concern** – The potential for substantial adverse impacts would be moderate to high based on background information about the resource area with respect to the geographic location of the project.

Applications in Response to the FOA

Based on the technologies and sites proposed, the applications for the FOA were preliminarily evaluated and reviewed by the NEPA compliance team. There were several applications that were deemed to not have sufficient information for assessment, and also site selections for some projects have not been finalized. Therefore, the summary in the below section is based on the information that was available. The following impacts by resource area were considered in the selection of candidates for award:

Aesthetics – Low to moderate impact would be expected as construction would primarily be conducted on existing industrial sites. Five projects were assessed to have a visual resource impact. Visual viewpoint changes are expected to occur at the sites as a result of project implementation and construction of the facilities. One project has overhead transmission lines.

Air Quality – Moderate impact would be expected as many facilities would have air controls and permitting in place, and new facilities will be putting controls in place as required by any obtained air permits. Fifteen projects had impacts, with several pollutants listed including: greenhouse gases (GHGs), particulate matter (PM), hazardous air pollutants (HAPs), volatile organic compounds (VOCs), nitrogen oxides (NOx), cadmium, nickel, lead, and combustion products. One project mentioned that BACT (best available control technology) would be installed, and one project mentioned MACT (maximum achievable control technology) to be installed (an iron-pellet gas purification and polishing system). One project stated that a Synthetic Minor Construction and Operations Air Permit would be required. Other impacts may be expected from transportation-related emissions or fugitive dust from construction activities.

Biological Resources – Low to moderate impact would be expected for three projects, with one project being located on the eastern edge of Great Salt Lake, and two projects being sited on greenfield sites. An additional three projects mention sites that were previously used for agriculture or grazing lands. The project located on one of the greenfield sites mentions that the site is pastureland, strands of forest, and wetlands/streams. The other greenfield site is located on farmland. Projects will be assessed for agricultural or natural habitat concerns, if any are identified.

Climate – Beneficial impacts would occur for all projects as batteries are critical to decarbonizing the economy through grid storage, resilience for powering homes and businesses, and electrification of the transportation sector, as noted in the FOA. GHG emissions from the projects would be minimal compared to these decarbonization efforts.

Community Services – Low impacts would be expected for the projects, though no impacts were specified in the review. Generally, projects anticipating a larger temporary workforce during construction would be expected to place a higher demand on community services – particularly in smaller, more rural communities where currently existing community services are more limited.

Cultural Resources – Moderate impacts would be expected for five projects, with several being sited next to railways or on greenfield sites. One project noted that Tribal Nations, U.S. Fish and Wildlife Service, and U.S. Army Corps of Engineers consultations will all be needed. It is expected that Section 106 regulations will be followed on all projects. Bureau of Land Management (BLM) and Department of Defense (DOD) cooperating agencies will be needed for one other project. One project is in proximity to an airport, and another project is located near a major railyard. BLM permitting is expected for two projects.

Environmental Justice (EJ) – The EJ impacts should be beneficial for the projects. Through the Administration's Justice40 Initiative, 40 percent of the overall benefits of this FOA should flow to DACs, as listed in the Justice40 guidance document and the FOA[3]. EJ impacts were expected for four of the projects, yet EJ benefits will be considered for all projects under the Juctice40 initiative. Under Justice40 the benefits include (but are not limited to) measurable direct or indirect investments or positive project outcomes that achieve or contribute to the following in DACs: (1) a decrease in energy burden; (2) a decrease in environmental exposure and burdens; (3) an increase in access to low-cost capital; (4) an increase in job creation, the clean energy job pipeline, and job training for individuals; (5) increases in clean energy enterprise creation and contracting (e.g., minority-owned or diverse business enterprises); (6) increases in energy democracy, including community ownership; (7) increased parity in clean energy technology access and adoption; and (8) an increase in energy resilience. Environmental and human health of the DACs will be considered under Executive Order 12898 — Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, as required for projects.

Floodplains – Floodplains impact for the projects are low. There are four projects with Floodplains concerns, with one of the projects below the 500 Year Flood Plain (0.2-percent-annual-chance).

Geology – Geology impacts would be low to moderate for the projects. The possibility of extraction of economic minerals for battery manufacturer should be considered for relevant projects. One project has backfilled coal mine pits and spoil piles. One project is located on an old mine site. If geology is undisturbed, no additional impacts would be expected.

Ground Water – Ground Water impacts for the projects would be low. One project has a groundwater concern. Ground water impact from metals/chemicals or wastes could be of note for the projects, though containment measures would be in place as required for permitting. It is unknown if projects own any groundwater supply wells. Stormwater runoff will be managed in accordance with all relevant requirements, if required by projects.

Human Health and Safety – Impacts will be moderate. Five projects cited a concern. One project has a sensitive receptor (daycare) 2,500 feet from the corner of the lot. One project is upgrading its fire safety equipment, and fire safety and coordination with local fire departments is likely to be considered for all projects. Low to moderate impacts may also be considered during both construction and operations of the facilities. The level of risk is generally related to the size and

[3] The Justice40 initiative, created by E.O. 14008, establishes a goal that 40percent of the overall benefits of certain federal investments flow to (DACs). The Justice40 Interim Guidance provides a broad definition of DACs (Page 2): https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf. The DOE, Office of Management and Budget (OMB), and/or the Federal Council for Environmental Quality (CEQ) may issue additional and subsequent guidance regarding the designation of DACs and recognized benefits under the Justice40 Initiative.

complexity of the planned construction. Of note would be any concerns for handling of chemicals and metals, including minimizing exposure and prevention of spills. Safe operating practices will be implemented for all projects, and compliance with federal, state, and local regulations and standards as well.

Land Use – Low to moderate impacts would be expected for all projects due to construction within existing facilities or on a compatible nearby site. Two sites are greenfield sites, but many are already existing industrial sites. Three sites have not yet been selected. BLM permits are needed for two projects (three sites), with one BLM site also consulting with the DOD. One project is consulting with Tribal Nations, U.S. Fish and Wildlife Service, and U.S. Army Corps of Engineers. Clearance of land, stormwater runoff best management practices, utility line installations, and rail lines will be considered as needed.

Noise – Noise impacts would be low to moderate. One project specifically cited noise impact. During the project construction phases, noise levels will increase, but would be temporary and ending after construction. All project facilities conducting manufacturing and/or recycling activities may have noise, but much will occur within closed buildings. Any projects located near neighboring buildings may have noise impacts to consider for those near the site if outdoor noise continues past construction phases.

Socioeconomics – Beneficial impacts would be expected for all projects. Seven projects cited socioeconomic and/or EJ concerns. All projects would provide some additional employment during construction and operations, with most opportunities occurring within the local area DACs. Tax revenue generation and direct and indirect spending in the local economy is expected for the projects.

Soils – Low impacts would be expected for projects requiring land disturbance, including two greenfield sites. Five projects have sites that are adjacent to agricultural activity, with one converting existing pastureland, and one possibly converting farmland. Construction activities could result in a potential for soil erosion, but appropriate mitigation would be implemented as necessary, such as run-off control, silt fences, and stormwater detention facilities.

Surface Water – Impacts would be low to moderate. Battery Manufacturing and recycling facilities would potentially have water influent and wastewater effluent requirements to minimize the impacts with municipalities treating water. One project noted an effluent line along an existing roadway with a connect to the Mississippi River levee and River. Stormwater controls could be used during construction and operation. Controls could be used on hazardous liquids, if any, to minimize impacts.

Transportation and Traffic – Moderate impacts are expected with eight projects citing impacts. Five projects noted that they are cited near railways, railway right of way, or may need to recommission/use railway. Transportation of construction workforce to the site would be temporary. Construction access roads may be considered for projects. Transportation of operations workforce would be considered. Recycling and manufacturing facilities would also require trucking or railcar transport of materials and wastes in and out of the facility.

Utilities – Moderate impacts would be expected for greenfield sited projects resulting from the need for new energy infrastructure for manufacturing and recycling. Recycling and manufacturing facilities may have need for water, electricity, steam, wastewater, industrial gases and/or natural

gas, or other for the processes and facilities. Availability and capacity of utilities and anticipated infrastructure needs will be evaluated for projects.

Wastes and Materials – Impacts would be moderate to high. Sixteen projects have waste streams impact and hazardous material storage and use impacts. Three projects have a Resource Conservation and Recovery Act (RCRA) designation, and several others have hazardous chemicals. One project is a large quantity generator (LQG). The nature of the manufacturing and/or recycling for Batteries Materials and Processing Manufacturing and Recycling will require diligence in hazardous/non-hazardous waste management practices and applicable permitting. Transportation of waste to landfills to be considered, if applicable, to projects.

Wetlands – Wetlands impacts would be low to moderate. Four projects noted wetlands concerns, which could be avoided, or controls used to minimize impacts resulting from project construction. The extent and the conditions of the wetlands on each site will be addressed during construction and/or operations as required. One project noted that wetlands will be avoided. One project has wetlands and streams on site. Appropriate wetland mitigation measures will be implemented for unavoidable impacts.

CONCLUSION

The alternatives available to DOE from applications received in response to the FOA provided reasonable alternatives for accomplishing the Department's purpose and need to satisfy the responsibility imposed on the Department to carry out a program to bolster the nation's battery material production and battery production.

An environmental review was part of the evaluation process of these applications. DOE prepared a critique containing information from this environmental review. That critique, summarized here, contained summary as well as project-specific environmental information. The critique was made available to, and considered by, the selection official before selections for financial assistance were made.

DOE determined that selecting twenty-one applications in response to the FOA would meet the Department’s purpose and need. DOE selected twenty-one projects for awards of financial assistance:

- Project Recipient (City, State) project located in City, State. Construct a new, commercial-scale U.S.-based lithium materials processing plant, sited next to existing facility, that uses sustainably extracted spodumene minerals from the site’s lithium mine to produce battery grade lithium hydroxide for domestic manufacturing of lithium-ion batteries for 750,000 vehicles in the U.S. market. The DOE has determined that an environmental assessment (EA) is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Construct a battery minerals processing facility to process nickel ore in concentrate (nickel/iron and copper) from economically viable sources in support of a new domestic cathode supply chain. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;

- Project Recipient (City, State) project located in City, State. Plan, design, and construct a cathode active materials (CAM) plant including a manufacturing building and the processing equipment necessary to convert precursor materials into CAM, the highest value component in a lithium-ion battery. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Design a sustainable lithium hydroxide facility to produce 30,000 metric tons per year of lithium hydroxide for the domestic battery and electric vehicle (EV) market, doubling the lithium hydroxide production capacity currently available in the U.S. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Design, construct and commission a graphite anode powder plant over a five-year period. Testing of a pilot manufacturing plant will occur site I in City, State, and graphitization at site II City, State, during the first 3 years of the project. Approximately 35,000 tons per annum of new synthetic graphite anode material capacity for lithium-ion batteries will be used in electric vehicles and critical energy storage applications. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Expand the production capacity of the integrated milling, purification, coating, and surface treatment operation producing on-specification active anode material (AAM), using natural graphite from an overseas graphite operation. Construction of a new 11,250 metric tons per annum (tpa) AAM facility is underway to serve as the only vertically integrated and large-scale natural graphite AAM producer outside China and the first large-scale natural graphite AAM producer in the U.S. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Building its first mass production site in the U.S., which will produce 10,000 metric tons per year of battery grade synthetic graphite. The project will build a new plant near City to produce 30,000 metric tons per year of graphite targeted at the EV industry. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Will build a new battery-grade polyvinylidene fluoride (PVDF) facility in City, State, to supply the needs of the North American EV and stationary energy storage market. Potential to provide enough PVDF to supply more than 5 million EV batteries per year at full capacity. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to build the first U.S. manufacturing plant for lithium hexafluorophosphate (LiPF6) on the grounds of the company's existing fluorochemical production site and produce up to 10,000 metric tonnes (MT) of LiPF6 per year, which is sufficient to support domestic production of more than a million full EVs. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to build and operate a commercial-scale facility to implement its novel process for manufacturing battery

cathode grade lithium hydroxide (LiOH) (5,000 MT (metric tonnes) LiOH/year, with capacity for 30,000 MT LiOH/year) commercial processing plant from unconventional Nevada-based lithium-bearing sedimentary resources (10,000 acres). The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;

- Project Recipient (City, State) project located in City, State. Proposes to demonstrate production of lithium at commercially relevant scales using a proprietary technology (using ion-exchange beads) for lithium extraction from domestic brine resources at commercially relevant scales. The project would include 4 pilot units in State and State. Each site would require 5–7 acres for demonstrations lasting 10 months to 3 years before demobilization. Additional work would be manufacturing ceramic beads at 2 existing facilities, one of which will require modification and equipment to support the new production. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to establish industrial scale U.S. production capacity of sustainable, low-cost precursor cathode materials by integrating the separation of critical cathode materials from spent lithium-ion batteries (LIBs) with the production of both precursor cathode active materials (pCAM) and metal salts to support domestic production of cathode active material (CAM). CAM can then be used in new LIBs for EVs and energy storage systems (ESS). It will produce enough material to supply over 250,000 EVs annually. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to build a plant to produce high quality lithium iron phosphate (LFP) cathode powder for the global lithium battery industry using primarily a domestic supply chain. Using its own process technology and by acquiring licenses for certain other commercially proven processes, the plant will have two production lines built in dual phases, with each line capable of producing 15,000 tonnes per year of LFP powder. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project
- Project Recipient (City, State) project located in City, State. Proposes to build a separator facility capable of supplying 19 gigawatt-hour (GWh) of electrovoltaic batteries, including their existing 2 GWh battery plant. The project would construct new buildings, tanks, and associated equipment. The area is a greenfield site that was previously used for agriculture and is currently being developed as an industrial park. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. The proposed project would construct new separator plants with capacity of 1-1.8 billion m^2 per year, enough material for ~1.4 million EVs. The separator plants would include the installation of high-capacity battery separator lines. Finalized site selection is still underway. The DOE has not determined the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Build-out of a 600,000-square-foot factory that will produce breakthrough lithium-ion anode materials. The project is expected to begin production of Recipient's proprietary silicon anode material in

2025, with full production of 20 GWh equivalent of material at the project's conclusion in 2026. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;

- Project Recipient (City, State) project located in City, State. Proposes to design and construct two 2,000 tonnes/year silicon-carbon anode material factories, also known as "modules." The proposed project plans to construct these modules as part of an expansion of a previously planned project. The proposed project will involve design and construction of two modules. The proposed project will also involve the construction of support facilities for all modules. These two modules and support facilities will be constructed on a planned, but undeveloped portion of the proposed project site. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to set up an advanced prelithiation and lithium anode manufacturing facility to accelerate the transition to next-generation lithium-ion (Li-ion) batteries and enable the development of a robust U.S. battery component supply chain. The proposed facility will support industrial-scale production of advanced lithiated anodes for multiple battery cell makers and automobile manufacturers. Finalized site selection is still underway. The DOE has not determined the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to expand and upgrade recipient's existing lithium-ion recycling facility. Collect, disassemble, shred, and upgrade the critical minerals present from tens-of-thousands of tons of lithium-ion batteries for reuse in new lithium-ion batteries. The project requires the physical modification of existing buildings, new construction, and ground-disturbing activities on a portion of the project site. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to demonstrate the manufacturing of silicon nanowire anode technology at the component and cell level on multi-megawatt-hour-scale manufacturing lines that are comparable to those used in multi-GWh factories. Plans are to construct a new facility of about 120,000 square feet. Finalized site selection is still underway. The DOE has not determined the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to demonstrate the ability to domestically produce multiple battery chemistries namely NMC811 and LFP in a plant with the capacity of 3,000 tpa ready for production in 2025 scaling to 10,000 tpa in 2026. The demonstration plant will produce NMC811 generating zero waste and 70 percent less GHGs by using only 10 percent of the water and 30 percent of the energy versus traditional battery material production methods. The proposed new facility will be approximately 120,000 square feet in a zoned industrial park. Finalized site selection is still underway. The DOE has not determined the appropriate level of environmental review for the proposed project.

APPENDIX B

Consultation with Agencies and Tribal Nations

December 18, 2023

Allyson Brooks, Ph.D.
State Historic Preservation Officer
Department of Archaeology and Historic Preservation
Post Office Box 48343
Olympia, WA 98504-8343

Subject: National Historic Preservation Act Compliance for the Group14 – Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain Project (DOE/EA-2220D)

Dear Dr. Brooks,

This letter is to inform you of a project being planned in the State of Washington, utilizing federal funding from the U.S. Department of Energy (DOE). Because DOE must take into account the effect of any federally funded or assisted project on historic properties, DOE is requesting your assistance in its compliance with the National Historic Preservation Act (NHPA). (See 54 U.S.C. §§ 306101 et seq.).

Background

The Office of Manufacturing and Energy Supply Chains (MESC) and Office of Energy Efficiency and Renewable Energy (EERE) within the U.S. Department of Energy (DOE) issued Funding Opportunity Announcement (FOA) DE-FOA-0002678, Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing, pursuant to the BIL, Public Law 111-58 Sections 40207 (b) & (c). These sections support the U.S. government's goal of upgrading and modernizing infrastructure by strengthening critical domestic manufacturing and supply chains to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis and advance environmental justice.

Group14 Technologies, Inc. (Group14) applied for DOE's competitive financial assistance award with its project entitled "Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain" and indicated that the project would be located in the State of Washington. After an extensive evaluation process, DOE awarded Group14 a financial assistance award for its proposed project.

Project Details and Location

Group14 is proposing to construct a commercial-scale facility, referred to as a "battery active materials" (BAM-2) factory that would produce a lithium-ion battery anode material with the goal of meeting the demands of the growing electric vehicle market. Group14's product is a silicon-carbon composite material that improves the energy density and reduces the cost of lithium-ion batteries.

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The overall project includes the following elements: construction of internal roads, egress and ingress from an adjacent road, process module buildings, air emission control systems, administrative building, warehouse, operations building, maintenance building, central utility building, solid waste storage building, parking, stormwater facility, wastewater conveyance, various utilities, and associated facilities to support operations. Underground utilities will also be updated or newly constructed throughout the project area, which will involve horizontal directional drilling and opencut trenching.

The proposed project area is located at 13431 Wheeler Road NE in the city of Moses Lake, Washington. It is in Sections 19 and 20 of Township 19 North, Range 29 East of the Willamette Meridian totaling approximately 46 acres (See Attachments 1 and 2). The proposed project site is zoned Heavy Industrial. Previous site use was agricultural, consistent with the surrounding area over the last several decades.

National Historic Preservation Act and National Environmental Policy Act Compliance

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties. See 36 CFR 800.1(a). To begin this analysis, DOE identified the Area of Potential Effect (APE) of this project (the Undertaking) as the 46 acres referenced in Attachments 1 and 2.[1] Group14 has also previously completed a Cultural Resource Survey and Inadvertent Discovery Plan, which are provided as Attachments 3 and 4.

Now, DOE is attempting to identify any historic properties within the APE. **Please review the attachments, including the project site plan and HDR Inc.'s cultural resource survey of the APE, and provide DOE with your written determination of whether any historic properties[2] are present in the APE and if so, whether any would be adversely affected by the Undertaking.**

DOE is also consulting with Native American tribal nations with possible interests in the project area to assist DOE in identifying the presence of any historic properties. Specifically, DOE is consulting with the Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Colville Reservation, Confederated Tribes of the Warm Springs Reservation of Oregon, and the Spokane Tribe of Indians. DOE is providing details of this proposed project to tribal representatives and Tribal Historic Preservation Officers of these tribes for review.

Based on the scope of the proposed Group14 project, DOE is preparing an Environmental Assessment (EA) (DOE/EA-2220D) in accordance with requirements of the National Environmental Policy Act (NEPA) to analyze, document, and disseminate information on the potential environmental and cultural consequences of the project. Information that you and the tribes provide will be incorporated and appropriately addressed in the

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EA. Moreover, when the Draft EA is circulated for public comment, you will be sent the website containing the draft where you may provide additional comments and confirm your historic properties determination.

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In April 2023, DOE sent Group14 an Interim Action Memo as a reminder that only administrative work, paper studies, analysis, permitting, and planning were approved, and construction, groundbreaking, land disturbances, and other related activities were prohibited. However, it was reported to DOE's NEPA Compliance Officers that Group14 has initiated project activities, including groundbreaking and initial construction of this facility, prior to the completion of DOE's NEPA process. Mobilization to the site by the construction contractor began in April 2023. Initial construction started with clearing and grading activities across approximately 35 acres of the 46-acre site in April 2023. Following grading, the installation of footings and foundations for Modules 1 and 2 as well as the Central Utility Building (CUB) was completed. Excavation of foundations for the pipe rack, underground utility installation and steel erection for Modules 1 and 2 as well as installation of the pre-cast concrete wall panels for the CUB are ongoing. No other work as yet begun as of early November 2023. DOE has notified Group14 that it is proceeding at risk of losing federal funding if it continues land-disturbing work at the site before DOE can complete its NEPA process.

It is DOE's understanding that Group14 and its environmental contractor (HDR, Inc.) have communicated with the Washington Department of Archaeology and Historic Preservation (Sydney Hanson) regarding this project from late 2022 to early 2023 as part of its Washington State Environmental Policy Act (SEPA) application process. These communications were not made under the direction of DOE. Thus, DOE would like to engage with your Department to ensure that you have the opportunity to provide DOE with your written determination of whether historic properties are present in the APE and to review any proposed mitigation measures and the Inadvertent Discovery Plan.

Despite Group14's decision to proceed "at-risk," DOE will continue to complete the NEPA process for this project and appreciates any information and input from you throughout this process.

DOE will be following up with a phone call to your representatives to discuss this project and Group14's at-risk activities. In the meantime, if you have any questions or concerns, please contact DOE at the following address, phone, or email below:

U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

Thank you for your attention to this request, and I look forward to working with your Department.

Sincerely,

Stephen Witmer
NEPA Compliance Officer

Attachments:

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2. Attachment 2 – Site Plan Maps
3. Attachment 3 – Cultural Resources Survey_11-16-2022
4. Attachment 4 – Inadvertent Discovery Plan_01-19-2023

cc:
Jesse Garcia, NETL NEPA Compliance Officer
Sydney Hanson, Washington Department of Archaeology & Historic Preservation
Robert Whitlam, Washington Department of Archaeology & Historic Preservation

Figure 2. Project Location Map

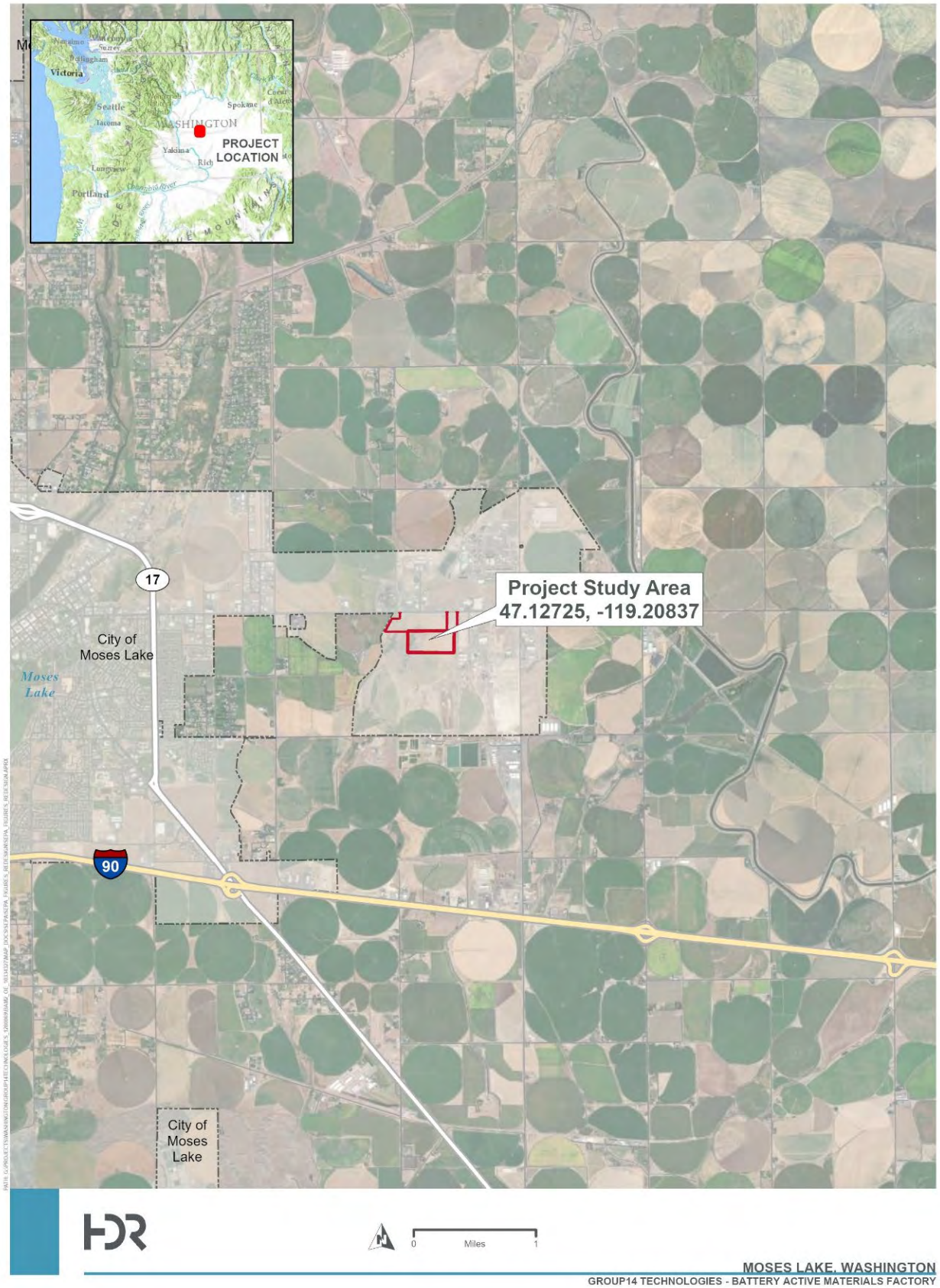


Figure 1A. Overall Site Plan

GROUP14 BATTERY ACTIVE MATERIALS FACTORY
MOSES LAKE, WASHINGTON

HDR

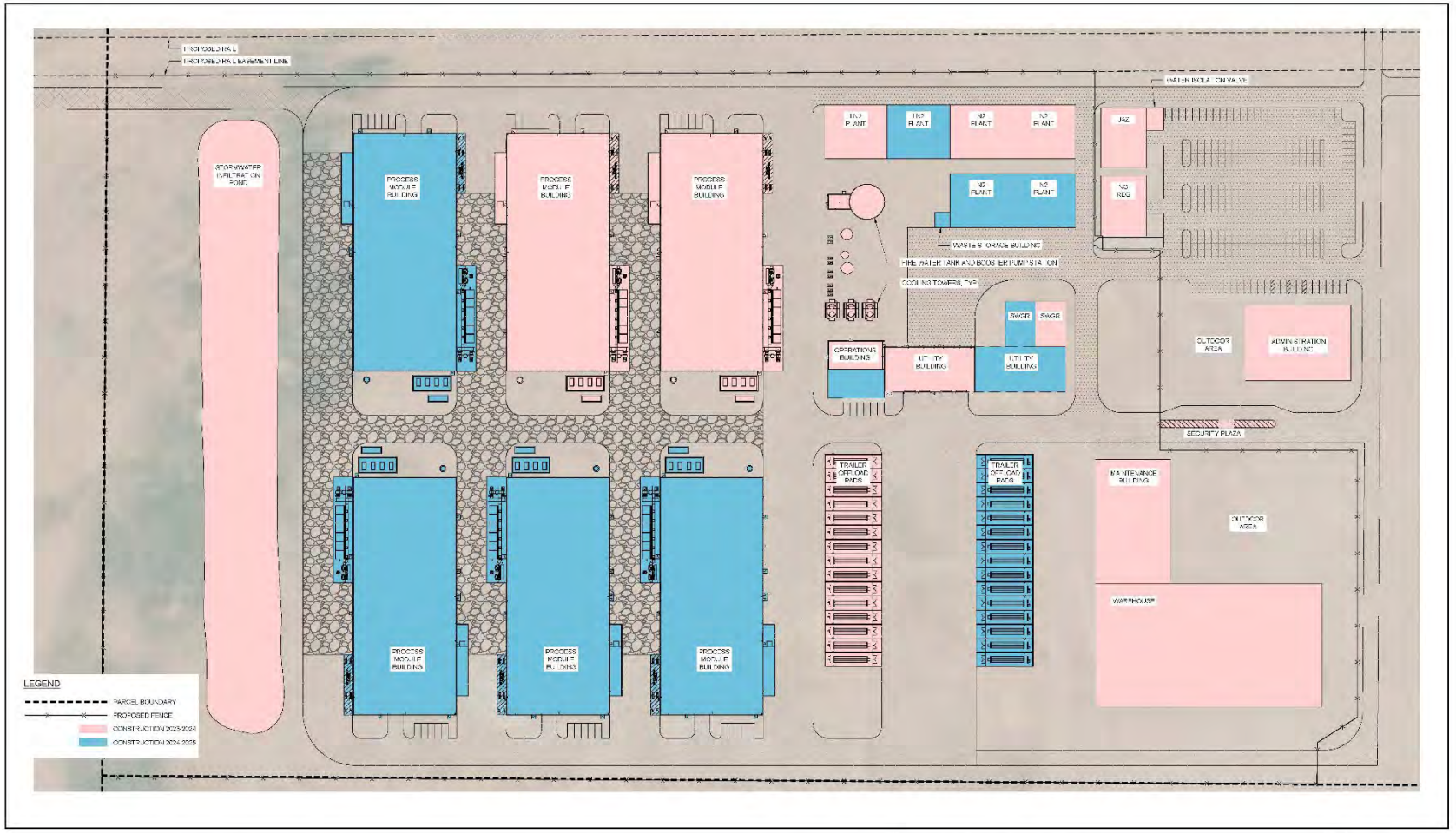
OVERALL SITE PLAN

PERMITTING

DATE 10/31/2022

FIGURE 000

Figure 1B. Enlarged Site Plan



GROUP14 BATTERY ACTIVE MATERIALS FACTORY
MOSES LAKE, WASHINGTON

HDR

ENLARGED SITE PLAN

PERMITTING

DATE 10/31/2022

FIGURE 001

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

December 18, 2023

Stephen Witmer
U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236

RE: Group14 – Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain Project
Log No: 2022-11-07665

Dear Stephen Witmer:

Thank you for contacting our department. We have reviewed the information and professional cultural resources report you provided for the *Group14 – Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain Project* in Moses Lake, Grant County, Washington.

We concur with your Determination of No Historic Properties Affected with the stipulations for an unanticipated find plan.

We would also request receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

In the event archaeological or historic materials are encountered during project activities, work in the immediate vicinity must stop, the area secured, and the concerned tribe's cultural staff and cultural committee and this department notified.

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in compliance with the Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations 36CFR800.4. Should additional information become available, our assessment may be revised. Thank you for the opportunity to comment.

Sincerely,

Robert G. Whitlam, Ph.D.
State Archaeologist
(360) 890-2615
email: *rob.whitlam@dahp.wa.gov*

Spokane Tribe of Indians
Tribal Historic Preservation Officer
PO Box 100 Wellpinit WA 99040

January 8, 2024

To: Stephen Witmer, Dept. of Energy

RE: Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain project

Mr. Witmer,

Thank you for contacting the Spokane Tribe's Historic Preservation Office. We appreciate the opportunity to provide a cultural consult for your project.

Pursuant to compliance with 54 U.S.C. we are hereby in consultation for this project.

This project has been determined to be in the Colville Tribe area, therefore I will defer this project to Colville Tribe, and have no further concerns on the project.

Again, thank you for the opportunity to comment, if questions arise contact me at 509-258-4222.

Sincerely,

Randy Abrahamson
THPO for the Spokane Tribe

December 28, 2023

Chairman Jarred-Michael Erickson
Chairman of the Colville Business Council
Confederated Tribes of the Colville Reservation
21 Colville Street
Nespelem, WA 99155-0150

Subject: National Historic Preservation Act Compliance for the Group14 – Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain Project (DOE/EA-2220D)

Dear Chairman Erickson,

This letter is to inform you of a project being planned in the State of Washington, utilizing federal funding from the U.S. Department of Energy (DOE). Because DOE must take into account the effect of any federally funded or assisted project on historic properties, DOE is requesting your assistance in its compliance with the National Historic Preservation Act (NHPA). (See 54 U.S.C. §§ 306101 et seq.).

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The Office of Manufacturing and Energy Supply Chains (MESC) and Office of Energy Efficiency and Renewable Energy (EERE) within the U.S. Department of Energy (DOE) issued Funding Opportunity Announcement (FOA) DE-FOA-0002678, Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing, pursuant to the BIL, Public Law 111-58 Sections 40207 (b) & (c). These sections support the U.S. government's goal of upgrading and modernizing infrastructure by strengthening critical domestic manufacturing and supply chains to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis and advance environmental justice.

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Group14 is proposing to construct a commercial-scale facility, referred to as a "battery active materials" (BAM-2) factory that would produce a lithium-ion battery anode material with the goal of meeting the demands of the growing electric vehicle market. Group 14's product is a silicon-carbon composite material that improves the energy density and reduces the cost of lithium-ion batteries.

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If you have any questions or concerns regarding this project, please contact me at the following address, phone, or email below:

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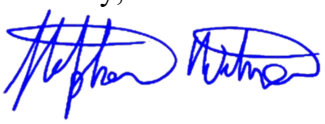
Sincerely,



Stephen Witmer
NEPA Compliance Officer

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cc:
Guy Moura
Robert Sloma

December 28, 2023

Guy Moura
Tribal Historic Preservation Officer
Confederated Tribes of the Colville Reservation
Post Office Box 150
Nespelem, WA 99155-0150

Subject: National Historic Preservation Act Compliance for the Group14 – Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain Project (DOE/EA-2220D)

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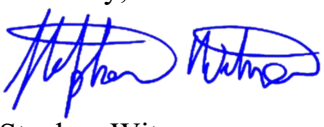

Stephen Witmer
NEPA Compliance Officer

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Robert Sloma

December 28, 2023

Robert Sloma
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21 Colville Street
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It is DOE's understanding that Group14 and its environmental contractor (HDR, Inc.) reached out to the Confederated Tribes of the Colville Reservation (Guy Moura and Robert Sloma) from late 2022 to early 2023 regarding this project as part of its Washington State Environmental Policy Act application process. These communications were not made under the direction of DOE. Thus, DOE would like to engage with you to ensure that your tribal nation has an opportunity to provide DOE with your written determination of whether historic properties are present in the APE and to review any proposed mitigation measures and the Inadvertent Discovery Plan.

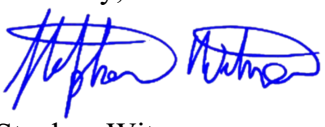
Despite Group14's decision to proceed "at-risk," DOE will continue to complete the NEPA process for this project and appreciates any information and input from the Confederated Tribes of the Colville Reservation regarding this project throughout the NEPA process.

If you have any questions or concerns regarding this project, please contact me at the following address, phone, or email below:

U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

Thank you for your attention to this request, and I look forward to working with your Tribal Nation.

Sincerely,



Stephen Witmer
NEPA Compliance Officer

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cc:
Jarred-Michael Erickson
Guy Moura

December 28, 2023

Mr. Randy Abrahamson
Tribal Historic Preservation Officer
6195 Ford-Wellpinit Road
Spokane Tribe of Indians
Post Office Box 100
Wellpinit, WA 99040

Subject: National Historic Preservation Act Compliance for the Group14 – Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain Project (DOE/EA-2220D)

Dear Mr. Abrahamson,

This letter is to inform you of a project being planned in the State of Washington, utilizing federal funding from the U.S. Department of Energy (DOE). Because DOE must take into account the effect of any federally funded or assisted project on historic properties, DOE is requesting your assistance in its compliance with the National Historic Preservation Act (NHPA). (See 54 U.S.C. §§ 306101 et seq.).

Background

The Office of Manufacturing and Energy Supply Chains (MESC) and Office of Energy Efficiency and Renewable Energy (EERE) within the U.S. Department of Energy (DOE) issued Funding Opportunity Announcement (FOA) DE-FOA-0002678, Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing, pursuant to the BIL, Public Law 111-58 Sections 40207 (b) & (c). These sections support the U.S. government's goal of upgrading and modernizing infrastructure by strengthening critical domestic manufacturing and supply chains to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis and advance environmental justice.

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Project Details and Location

Group14 is proposing to construct a commercial-scale facility, referred to as a "battery active materials" (BAM-2) factory that would produce a lithium-ion battery anode material with the goal of meeting the demands of the growing electric vehicle market. Group 14's product is a silicon-carbon composite material that improves the energy density and reduces the cost of lithium-ion batteries.

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The overall project includes the following elements: construction of internal roads, egress and ingress from an adjacent road, process module buildings, air emission control systems, administrative building, warehouse, operations building, maintenance building, central utility building, solid waste storage building, parking, stormwater facility, wastewater conveyance, various utilities, and associated facilities to support operations. Underground utilities will also be updated or newly constructed throughout the project area, which will involve horizontal directional drilling and opencut trenching.

The proposed project area is located at 13431 Wheeler Road NE in the city of Moses Lake, Washington. It is in Sections 19 and 20 of Township 19 North, Range 29 East of the Willamette Meridian totaling approximately 46 acres (See Attachments 1 and 2). The proposed project site is zoned Heavy Industrial. Previous site use was agricultural, consistent with the surrounding area over the last several decades.

National Historic Preservation Act and National Environmental Policy Act Compliance
Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties. See 36 CFR 800.1(a). To begin this analysis, DOE identified the Area of Potential Effect (APE) of this project (the Undertaking) as the 46 acres referenced in Attachments 1 and 2.[1] Group14 has also previously completed a Cultural Resource Survey and Inadvertent Discovery Plan, which are provided as Attachments 3 and 4.

Now, DOE is attempting to identify any historic properties within the APE. **Please review the attachments, including the project site plan and HDR Inc.'s cultural resource survey of the APE, and provide DOE with your written determination of whether any historic properties[2] are present in the APE and if so, whether any would be adversely affected by the Undertaking.** DOE is also consulting with the Washington Department of Archaeology and Historical Preservation regarding this proposed project, and their response is provided as Attachment 5. DOE is also consulting with the Confederated Tribes of the Warm Springs Reservation of Oregon, the Confederated Tribes and Bands of the Yakama Nation, and the Confederated Tribes of the Colville Reservation. DOE is providing details of this proposed project to tribal representatives and Tribal Historic Preservation Officers of these tribes for review.

Based on the scope of the proposed Group14 project, DOE is preparing an Environmental Assessment (EA) (DOE/EA-2220D) in accordance with requirements of the National Environmental Policy Act to analyze, document, and disseminate information on the potential environmental and cultural consequences of the project. Information that you provide will be incorporated and appropriately addressed in the EA. Moreover, when the Draft EA is circulated for public comment, you will be sent a hard copy of the Draft EA

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Despite Group14's decision to proceed "at-risk," DOE will continue to complete the NEPA process for this project and appreciates any information and input from the Spokane Tribe of Indians regarding this project throughout the NEPA process.

If you have any questions or concerns regarding this project, please contact me at the following address, phone, or email below:

U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
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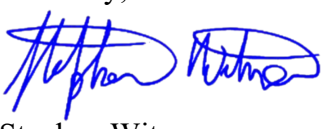
Sincerely,



Stephen Witmer
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December 28, 2023

Mr. Robert Brunoe
Confederated Tribes of the Warm Springs Reservation of Oregon
1233 Veterans Street
Post Office Box C
Warm Springs, OR 97761

Subject: National Historic Preservation Act Compliance for the Group14 – Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain Project (DOE/EA-2220D)

Dear Mr. Brunoe,

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Background

The Office of Manufacturing and Energy Supply Chains (MESC) and Office of Energy Efficiency and Renewable Energy (EERE) within the U.S. Department of Energy (DOE) issued Funding Opportunity Announcement (FOA) DE-FOA-0002678, Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing, pursuant to the BIL, Public Law 111-58 Sections 40207 (b) & (c). These sections support the U.S. government's goal of upgrading and modernizing infrastructure by strengthening critical domestic manufacturing and supply chains to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis and advance environmental justice.

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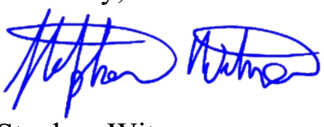

Stephen Witmer
NEPA Compliance Officer

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cc:
Jonathan Smith, Sr.
Mars Galloway

December 28, 2023

Ms. Mars Galloway
Confederated Tribes of the Warm Springs Reservation of Oregon
1233 Veterans Street
Post Office Box C
Warm Springs, OR 97761

Subject: National Historic Preservation Act Compliance for the Group14 – Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain Project (DOE/EA-2220D)

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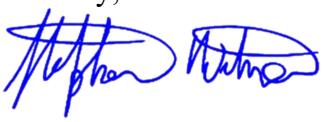

Stephen Witmer
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cc:
Jonathan Smith, Sr.
Robert Brunoe

December 28, 2023

Mr. Jonathan Smith, Sr.
Tribal Council Chairperson
Confederated Tribes of the Warm Springs Reservation of Oregon
1233 Veterans Street
Post Office Box C
Warm Springs, OR 97761

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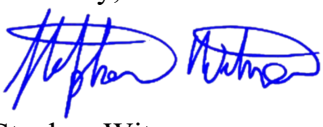
Despite Group14's decision to proceed "at-risk," DOE will continue to complete the NEPA process for this project and appreciates any information and input from the Confederated Tribes of the Warm Springs Reservation of Oregon regarding this project throughout the NEPA process.

If you have any questions or concerns regarding this project, please contact me at the following address, phone, or email below:

U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

Thank you for your attention to this request, and I look forward to working with your Tribal Nation.

Sincerely,



Stephen Witmer
NEPA Compliance Officer

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cc:
Robert Brunoe
Mars Galloway

December 28, 2023

Jeremy Adams
Confederated Tribes and Bands of the Yakama Nation
401 Fort Road
Post Office Box 151
Toppenish, WA 98948

Subject: National Historic Preservation Act Compliance for the Group14 – Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain Project (DOE/EA-2220D)

Dear Mr. Adams,

This letter is to inform you of a project being planned in the State of Washington, utilizing federal funding from the U.S. Department of Energy (DOE). Because DOE must take into account the effect of any federally funded or assisted project on historic properties, DOE is requesting your assistance in its compliance with the National Historic Preservation Act (NHPA). (See 54 U.S.C. §§ 306101 et seq.).

Background

The Office of Manufacturing and Energy Supply Chains (MESC) and Office of Energy Efficiency and Renewable Energy (EERE) within the U.S. Department of Energy (DOE) issued Funding Opportunity Announcement (FOA) DE-FOA-0002678, Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing, pursuant to the BIL, Public Law 111-58 Sections 40207 (b) & (c). These sections support the U.S. government's goal of upgrading and modernizing infrastructure by strengthening critical domestic manufacturing and supply chains to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis and advance environmental justice.

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The proposed project area is located at 13431 Wheeler Road NE in the city of Moses Lake, Washington. It is in Sections 19 and 20 of Township 19 North, Range 29 East of the Willamette Meridian totaling approximately 46 acres (See Attachments 1 and 2). The proposed project site is zoned Heavy Industrial. Previous site use was agricultural, consistent with the surrounding area over the last several decades.

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Based on the scope of the proposed Group14 project, DOE is preparing an Environmental Assessment (EA) (DOE/EA-2220D) in accordance with requirements of the National Environmental Policy Act to analyze, document, and disseminate information on the potential environmental and cultural consequences of the project. Information that you provide will be incorporated and appropriately addressed in the EA. Moreover, when the Draft EA is circulated for public comment, you will be sent an electronic and hard copy

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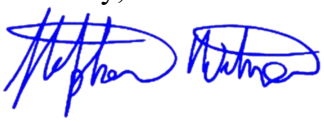
Despite Group14's decision to proceed "at-risk," DOE will continue to complete the NEPA process for this project and appreciates any information and input from the Confederated Tribes and Bands of the Yakama Nation regarding this project throughout the NEPA process.

If you have any questions or concerns regarding this project, please contact me at the following address, phone, or email below:

U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

Thank you for your attention to this request, and I look forward to working with your Tribal Nation.

Sincerely,



Stephen Witmer
NEPA Compliance Officer

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cc:
Kate Valdez
Jessica Lally
Casey Barney

December 28, 2023

Casey Barney
Tribal Historic Preservation Officer
Confederated Tribes and Bands of the Yakama Nation
401 Fort Road
Post Office Box 151
Toppenish, WA 98948

Subject: National Historic Preservation Act Compliance for the Group14 – Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain Project (DOE/EA-2220D)

Dear Casey Barney,

This letter is to inform you of a project being planned in the State of Washington, utilizing federal funding from the U.S. Department of Energy (DOE). Because DOE must take into account the effect of any federally funded or assisted project on historic properties, DOE is requesting your assistance in its compliance with the National Historic Preservation Act (NHPA). (See 54 U.S.C. §§ 306101 et seq.).

Background

The Office of Manufacturing and Energy Supply Chains (MESC) and Office of Energy Efficiency and Renewable Energy (EERE) within the U.S. Department of Energy (DOE) issued Funding Opportunity Announcement (FOA) DE-FOA-0002678, Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing, pursuant to the BIL, Public Law 111-58 Sections 40207 (b) & (c). These sections support the U.S. government's goal of upgrading and modernizing infrastructure by strengthening critical domestic manufacturing and supply chains to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis and advance environmental justice.

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Project Details and Location

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The overall project includes the following elements: construction of internal roads, egress and ingress from an adjacent road, process module buildings, air emission control systems, administrative building, warehouse, operations building, maintenance building, central utility building, solid waste storage building, parking, stormwater facility, wastewater conveyance, various utilities, and associated facilities to support operations. Underground utilities will also be updated or newly constructed throughout the project area, which will involve horizontal directional drilling and opencut trenching.

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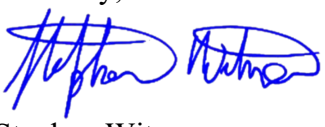

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cc:
Jeremy Adams
Jessica Lally
Kate Valdez

December 28, 2023

Jessica Lally
Confederated Tribes and Bands of the Yakama Nation
401 Fort Road
Post Office Box 151
Toppenish, WA 98948

Subject: National Historic Preservation Act Compliance for the Group14 – Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain Project (DOE/EA-2220D)

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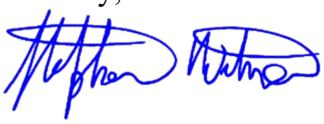

Stephen Witmer
NEPA Compliance Officer

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cc:
Kate Valdez
Jeremy Adams
Casey Barney

December 28, 2023

Kate Valdez
Confederated Tribes and Bands of the Yakama Nation
401 Fort Road
Post Office Box 151
Toppenish, WA 98948

Subject: National Historic Preservation Act Compliance for the Group14 – Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain Project (DOE/EA-2220D)

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The Office of Manufacturing and Energy Supply Chains (MESC) and Office of Energy Efficiency and Renewable Energy (EERE) within the U.S. Department of Energy (DOE) issued Funding Opportunity Announcement (FOA) DE-FOA-0002678, Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing, pursuant to the BIL, Public Law 111-58 Sections 40207 (b) & (c). These sections support the U.S. government's goal of upgrading and modernizing infrastructure by strengthening critical domestic manufacturing and supply chains to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis and advance environmental justice.

Group14 Technologies, Inc. (Group14) applied for DOE's competitive financial assistance award with its project entitled "Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain" and indicated that the project would be located in the State of Washington. After an extensive evaluation process, DOE awarded Group14 a financial assistance award for its proposed project.

Project Details and Location

Group14 is proposing to construct a commercial-scale facility, referred to as a "battery active materials" (BAM-2) factory that would produce a lithium-ion battery anode material with the goal of meeting the demands of the growing electric vehicle market. Group 14's product is a silicon-carbon composite material that improves the energy density and reduces the cost of lithium-ion batteries.

626 Cochran Mill Road, Pittsburgh, PA 15236
stephen.witmer@netl.doe.gov Phone (412) 386-7589 www.netl.doe.gov

The overall project includes the following elements: construction of internal roads, egress and ingress from an adjacent road, process module buildings, air emission control systems, administrative building, warehouse, operations building, maintenance building, central utility building, solid waste storage building, parking, stormwater facility, wastewater conveyance, various utilities, and associated facilities to support operations. Underground utilities will also be updated or newly constructed throughout the project area, which will involve horizontal directional drilling and opencut trenching.

The proposed project area is located at 13431 Wheeler Road NE in the city of Moses Lake, Washington. It is in Sections 19 and 20 of Township 19 North, Range 29 East of the Willamette Meridian totaling approximately 46 acres (See Attachments 1 and 2). The proposed project site is zoned Heavy Industrial. Previous site use was agricultural, consistent with the surrounding area over the last several decades.

National Historic Preservation Act and National Environmental Policy Act Compliance

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties. See 36 CFR 800.1(a). To begin this analysis, DOE identified the Area of Potential Effect (APE) of this project (the Undertaking) as the 46 acres referenced in Attachments 1 and 2.[1] Group14 has also previously completed a Cultural Resource Survey and Inadvertent Discovery Plan, which are provided as Attachments 3 and 4.

Now, DOE is attempting to identify any historic properties within the APE. **Please review the attachments, including the project site plan and HDR Inc.'s cultural resource survey of the APE, and provide DOE with your written determination of whether any historic properties[2] are present in the APE and if so, whether any would be adversely affected by the Undertaking.** DOE is also consulting with the Washington Department of Archaeology and Historical Preservation regarding this proposed project, and their response is provided as Attachment 5. DOE is also consulting with the Confederated Tribes of the Warm Springs Reservation of Oregon, the Spokane Tribe of Indians, and the Confederated Tribes of the Colville Reservation. DOE is providing details of this proposed project to tribal representatives and Tribal Historic Preservation Officers of these tribes for review. Hard copies of this correspondence are also being provided to Jeremy Adams, Jessica Lally, and Casey Barney.

Based on the scope of the proposed Group14 project, DOE is preparing an Environmental Assessment (EA) (DOE/EA-2220D) in accordance with requirements of the National Environmental Policy Act to analyze, document, and disseminate information on the potential environmental and cultural consequences of the project. Information that you provide will be incorporated and appropriately addressed in the EA. Moreover, when the Draft EA is circulated for public comment, you will be sent an electronic and hard copy

[1] The National Environmental Policy Act (NEPA) Office within the National Energy Technology Laboratory (NETL), the DOE's government-owned government-operated energy laboratory, is coordinating DOE's environmental compliance for this project.

[2] "Historic property means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria." 36 CFR 800.16(l)(1).

of the Draft EA where you may provide additional comments and confirm your historic properties determination.

Group14's Independent Project Activities

In April 2023, DOE sent Group14 an Interim Action Memo as a reminder that only administrative work, paper studies, analysis, permitting, and planning were approved, and construction, groundbreaking, land disturbances, and other related activities were prohibited. However, it was reported to DOE's NEPA Compliance Officers that Group14 has initiated project activities, including groundbreaking and initial construction of this facility, prior to the completion of DOE's NEPA process. Mobilization to the site by the construction contractor began in April 2023. Initial construction started with clearing and grading activities across approximately 35 acres of the 46-acre site in April 2023. Following grading, the installation of footings and foundations for Modules 1 and 2 as well as the Central Utility Building (CUB) was completed. Excavation of foundations for the pipe rack, underground utility installation and steel erection for Modules 1 and 2 as well as installation of the pre-cast concrete wall panels for the CUB are ongoing. No other work as yet begun as of early November 2023. DOE has notified Group14 that it is proceeding at risk of losing federal funding if it continues land-disturbing work at the site before DOE can complete its NEPA process.

It is DOE's understanding that Group14 and its environmental contractor (HDR, Inc.) reached out to you and Jeremy Adams via e-mail in late 2022 to regarding this project as part of its Washington State Environmental Policy Act application process. These communications were not made under the direction of DOE. Thus, DOE would like to engage with you to ensure that your tribal nation has an opportunity to provide DOE with your written determination of whether historic properties are present in the APE and to review any proposed mitigation measures and the Inadvertent Discovery Plan.

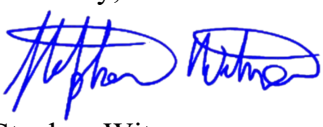
Despite Group14's decision to proceed "at-risk," DOE will continue to complete the NEPA process for this project and appreciates any information and input from the Confederated Tribes and Bands of the Yakama Nation regarding this project throughout the NEPA process.

If you have any questions or concerns regarding this project, please contact me at the following address, phone, or email below:

U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

Thank you for your attention to this request, and I look forward to working with your Tribal Nation.

Sincerely,



Stephen Witmer
NEPA Compliance Officer

Attachments:

1. Attachment 1 – Overall Project Location Map
2. Attachment 2 – Site Plan Maps
3. Attachment 3 – Cultural Resources Survey_11-16-2022
4. Attachment 4 – Inadvertent Discovery Plan_01-19-2023
5. Attachment 5 – WA DAHP Findings_12-18-2023

cc:
Jeremy Adams
Jessica Lally
Casey Barney

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
Phone: (360) 753-9440 Fax: (360) 753-9405

In Reply Refer To: February 29, 2024
Project Code: 2023-0119930
Project Name: Group14 - Battery Active Materials Factory

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
(360) 753-9440

PROJECT SUMMARY

Project Code: 2023-0119930
Project Name: Group14 - Battery Active Materials Factory
Project Type: Federal Grant / Loan Related
Project Description: Group14 is proposing to construct a commercial-scale facility, referred to as a “battery active materials” (BAM-2) factory that would produce a lithium-ion battery anode material with the goal of meeting the demands of the growing electric vehicle market. Group 14’s product is a silicon-carbon composite material that improves the energy density and reduces the cost of lithium-ion batteries.

The overall project would include the following elements: construction of internal roads, egress and ingress from an adjacent road, process module buildings, air emission control systems, administrative building, warehouse, operations building, maintenance building, central utility building, solid waste storage building, parking, stormwater facility, wastewater conveyance, various utilities, and associated facilities to support operations. Underground utilities will also be updated or newly constructed throughout the Project Area, which will involve horizontal directional drilling and opencut trenching. The trench widths

The proposed project area is located at 13431 Wheeler Road NE in the city of Moses Lake, Washington. The project is in Sections 19 and 20 of Township 19 North, Range 29 East of the Willamette Meridian totaling approximately 46 acres. See Exhibit 3 (Project Location Map). The proposed project site is zoned Heavy Industrial, and the site is currently undeveloped. Previous site use was agricultural, consistent with the surrounding area over the last several decades.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@47.12844945,-119.20866651212141,14z

Counties: Grant County, Washington

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

BIRDS

NAME	STATUS
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	Department of Energy
Name:	Stephen Witmer
Address:	626 Cochran Mill Road
Address Line 2:	Mailstop 921-227
City:	Pittsburgh
State:	PA
Zip:	15236
Email	stephen.witmer@netl.doe.gov
Phone:	4123867589

APPENDIX C

Interim Action Memorandum

April 12, 2023

Daniel Casioppo
Project Manager
Group14 Technologies, Inc.
8502 Maltby Road
Woodinville, WA 98072-8021

RE: Interim Action(s) within the scope of an ongoing Environmental Assessment prior to issuance of a Finding of No Significant Impact for the Commercial Manufacturing of a Stable Silicon Anode Material Towards Fostering a Strong U.S. Battery Supply Chain Project

Dear Mr. Casioppo:

In accordance with criteria established by the Council on Environmental Quality in its regulations implementing the procedural provisions of the National Environmental Policy Act (NEPA)(40 CFR Parts 1500-1508), DOE's NEPA implementing regulations (10 CFR Part 1021), which rely on those criteria, and DOE Order 451.1B, *National Environmental Policy Act Compliance Program*, our office has reviewed the Environmental Questionnaire submitted and found it acceptable to proceed with the following project tasks from the enclosed Statement of Project Objectives: Task 0.0 (Project Management and Planning), Task 0.1 (Kick-Off Meeting), Task 1.1 (Issue Scope of Work and Contracting), Task 1.2 (Engineering), Task 1.3 (Utility Coordination), Task 1.4 (Procurement), Task 1.5 (Environmental Permitting). These tasks include administrative work, paper studies, analysis, permitting, and planning. Any tasks or portions of tasks not noted above are not considered to be interim actions, and potential environmental impacts of these activities must be evaluated with the Environmental Assessment (EA) planned for this project. No construction, groundbreaking, land disturbances, or other related activities are authorized under this interim action memorandum.

Although the tasks discussed in the above paragraph would take place prior to DOE's completion of the EA for the entire project (*wherein a more thorough and extensive review will be conducted)*, DOE has determined that completing these tasks would not have an adverse environmental impact; nor would it limit the choice of reasonable alternatives for the project. It is therefore acceptable for you to proceed with these tasks.

The activities detailed within this interim action will need to be further documented and included in the upcoming EA. This interim action memorandum will be included as an Appendix in the upcoming EA and become part of the official record. Please contact

3610 Collins Ferry Road, Morgantown, WV 26505
fred.pozzuto@netl.doe.gov Phone (304) 285-5219 www.netl.doe.gov

Stephen Witmer at 412-386-7589, or Fred Pozzuto at 304-285-5219 if you have questions concerning this interim action memorandum.

Sincerely,

Stephen Witmer
NEPA Compliance Officer

Fred Pozzuto
Director, NETL NEPA Division

Enclosure: MS0000014 Group14 SOPO

cc:
Kristle Krichbaum, MESC HQ
Hank Hinkle, MESC HQ
Susan Miltenberger, NETL

APPENDIX D

Permits and Approvals

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600, Olympia, WA 98504-7600 • 360-407-6000

March 6, 2023

Craig McCuistion
Clayco Inc.
2199 Innerbelt Business Center Dr
Saint Louis, MO 63114

RE: Coverage under the Construction Stormwater General Permit

Permit number:	**WAR312216**
Site Name:	**Group14 Technologies BAM 2**
Location:	**Approx. 13400 East Wheeler Rd**
	Moses Lake **County: Grant**
Disturbed Acres:	**48**

Dear Craig McCuistion:

The Washington State Department of Ecology (Ecology) received your Notice of Intent for coverage under Ecology's Construction Stormwater General Permit (CSWGP). This is your permit coverage letter. Your permit coverage is effective March 6, 2023.

Retain this letter as an official record of permit coverage for your site. You may keep your records in electronic format if you can easily access them from your construction site. You can get the CSWGP, permit forms, and other information at Ecology's CSWGP eCoverage Packet webpage[1]. Contact your Permit Administrator, listed below, if you want a copy of the CSWGP mailed to you. Please read the permit and contact Ecology if you have any questions.

Electronic Discharge Monitoring Reports (WQWebDMR)
This permit requires you to submit monthly discharge monitoring reports (DMRs) for the full duration of permit coverage (from the first full month of coverage to termination). Your first sampling and reporting period will be for the month of **April 2023** and your first DMR must be submitted by **May 15, 2023**.

[1] http://www.ecology.wa.gov/eCoverage-packet

You must submit your DMRs electronically using Ecology's secure online system, WQWebDMR. To sign up for WQWebDMR go to Ecology's WQWebPortal guidance webpage[2]. If you have questions, contact the portal staff at (360) 407-7097 (Olympia area), or (800) 633-6193/Option 3, or email WQWebPortal@ecy.wa.gov.

Appeal Process

You have a right to appeal coverage under the general permit to the Pollution Control Hearing Board (PCHB). Appeals must be filed within 30 days of the date of receipt of this letter. Any appeal is limited to the general permit's applicability or non-applicability to a specific discharger. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2). For more information regarding your right to appeal, please reference Ecology's Focus Sheet: *Appeal of General Permit Coverage*[3].

Annual Permit Fees

RCW 90.48.465 requires Ecology to recover the costs of managing the permit program. Permit fees are invoiced annually until the permit is terminated. Termination conditions are described in the permit. For permit fee related questions, please contact the Water Quality Fee Unit at wqfeeunit@ecy.wa.gov or (800) 633-6193/Option 2.

Ecology Field Inspector Assistance

If you have questions regarding stormwater management at your construction site, please contact your Regional Inspector, Amanda Mars of Ecology's Eastern Regional Office in Spokane at amanda.mars@ecy.wa.gov or (509) 329-3554

Questions or Additional Information

Ecology is here to help. Please review our Construction Stormwater General Permit webpage[4] for more information. If you have questions about the Construction Stormwater General Permit, please contact your Permit Administrator, Stacey Britton at stacey.britton@ecy.wa.gov or (360) 764-3727.

Sincerely,

Jeff Killelea, Manager
Program Development Services Section
Water Quality Program

[2] https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance/WQWebPortal-guidance
[3] https://apps.ecology.wa.gov/publications/summarypages/1710007.html
[4] www.ecology.wa.gov/constructionstormwaterpermit

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Eastern Region Office

4601 North Monroe St., Spokane, WA 99205-1295 • 509-329-3400

July 11, 2023

Brett Kilcup
Engineering Manager
Group14 Technologies, Inc.
8502 Maltby Road
Woodinville, WA 98072

Re: **Notice of Construction** - Approval Order No. 23AQ-E012
AQPID: A0250325

Dear Brett Kilcup:

The Department of Ecology Air Quality Program has reviewed the Notice of Construction application received on December 27, 2022, for the operation of the Battery Active Materials Factory located at 13431 Wheeler Road NE, in Moses Lake, Washington, Grant County. Enclosed is the Approval Order No. 23AQ-E012. The required Web Notice period completed on June 24th, 2023. Ecology did not receive any comments or questions from the public.

All correspondence relating to this document should be directed to me at the Department of Ecology, Regional Air Quality Section, 4601 N. Monroe, Spokane, Washington 99205-1295. If you have any questions concerning the content of the document, please contact me at (509) 329-3528 or Andrew.kruse@ecy.wa.gov.

Sincerely,

Andy Kruse, P.E.
Commercial/Industrial Unit
Air Quality Program
Eastern Regional Office

AK:sg

Enclosures: Approval Order No. 23AQ-E012

Certified Mail: 7019 0140 0000 6498 1752

State of Washington Department of Ecology
Notice of Construction Approval Order

In the matter of approving a new air contaminant source for Group14 Technologies

Approval Order No. 23AQ-E012
AQPID No. A0250325

Project Summary

Group14 Technologies, Inc., herein referred to as the Permittee, is a new Battery Active Materials Factory located at 13431 Wheeler Road NE, Moses Lake, Washington, in Grant County. The Permittee is classified as a minor source. The project consists of installation and operation of equipment to manufacture lithium-ion battery anode material (via two modular process units) and the air emissions control equipment that consists of Dust Collectors, Cooling Towers, Thermal Oxidizers, and Selective Catalytic Reduction units. Additionally, there will be five Air Handling Units, three emergency generators banks (two engines in each bank), and two fire water pumps. The list below highlights the equipment regulated by this Approval Order:

Item No.	ID No.	Equipment / Air Pollution Control Equipment	Emissions Control Equipment for process/equipment:	Location
1	DC1	Dust Collector	Material Unloading/Mixing	Module 1
2	FUR1	Carbon Furnace	n/a	Module 1
3	TO1	Thermal Oxidizer (TO)	Carbon Furnace (PSK)	Module 1
4	SCR1	Selective Catalytic Reduction (SCR)	PSK TO	Module 1
5	CT1	Cooling Tower	n/a	Module 1
6	DC2	Dust Collector	Milling Operation	Module 1
7	SG1	Silane Gas Tanks	n/a	Module 1
8	CR1	Compound Reactor	n/a	Module 1
9	TO2	Thermal Oxidizer	Compounding Reactor (Silane)	Module 1
10	DC3	Dust Collector	Compounding Reactor TO	Module 1
11	TO3	Thermal Oxidizer	Compounding Reactor (Acetylene)	Module 1
12	DC4	Dust Collector	Silicon-Carbon Handling & Packaging	Module 1
13	DC5	Dust Collector	Material Unloading/Mixing	Module 2
14	FUR2	Carbon Furnace	n/a	Module 2
15	TO4	Thermal Oxidizer	Carbon Furnace (PSK)	Module 2
16	SCR2	Selective Catalytic Reduction	PSK TO	Module 2

Item No.	ID No.	Equipment / Air Pollution Control Equipment	Emissions Control Equipment for process/equipment:	Location
17	CT2	Cooling Tower	n/a	Module 2
18	DC6	Dust Collector	Milling Operation	Module 2
19	SG2	Silane Gas Tanks	n/a	Module 2
20	CR2	Compound Reactor	n/a	Module 2
21	TO5	Thermal Oxidizer	Compounding Reactor (Silane)	Module 2
22	DC7	Dust Collector	Compounding Reactor TO	Module 2
23	TO6	Thermal Oxidizer	Compounding Reactor (Acetylene)	Module 2
24	DC8	Dust Collector	Silicon-Carbon Handling & Packaging	Module 2
25	GEN1	Emergency Generator 1 (two engines in parallel, 757hp each)	n/a	Module 1
26	GEN2	Emergency Generator 2 (two engines in parallel, 757hp each)	n/a	Module 2
27	GEN3	Emergency Generator 3 (two engines in parallel, 757hp each)	n/a	Module 2
28	FWP1	Fire Water Pump Engine 1	Module 1	Module 1
29	FWP2	Fire Water Pump Engine 2	Module 2	Module 2
30	AHUs	Air Handling Units (5 total)	Main 1, Main 2, Ops, Utility, and Admin	Multi.
31	DCx	Dust Collector (multiple units for cleaning Modules 1 &2)	n/a	Multi.

Legal Authority

The emissions from the proposed project have been reviewed under the legal authority of RCW 70A.15.2210 and the applicable rules and regulations adopted thereunder. The proposed project, if operated as specified, will be in accordance with applicable rules and regulations, as set forth in Chapters 173-400 WAC and 173-460 WAC and the operation thereof, at the location proposed, will not result in ambient air quality standards being exceeded.

Therefore, it is ordered that the project as described in the Notice of Construction (NOC) application and more specifically detailed in plans, specifications, and other information submitted to the Washington State Department of Ecology (Ecology) is approved for construction and operation, provided the following conditions are satisfied:

Approval Conditions

1. Operational Limitations

a. Facility Wide Limits

i. Each module (battery active material manufacturing module) is limited to 2,800 metric tons of silicon-carbon composite per calendar year.

ii. Since there are two identical modules, Approval Conditions 1(b)-(g) apply to each battery active material manufacturing modules.

iii. The facility must not exceed the use of 425.0 million standard cubic feet of pipeline quality natural gas per calendar year.

iv. Opacity Limit - Visible emissions from any emission point must not exceed five percent opacity, as determined by 40 C.F.R. Part 60, Appendix A, Test Method 9.

v. There must be no visible emissions from the facility at the property boundary, as measured by 40 C.F.R. Part 60, Appendix A, Test Method 22

vi. All dust collectors must have a differential pressure gauge (scaled in inches of water column) installed across the inlet and outlet of the exhaust. The range of pressure drop readings that indicate proper filter operation must be incorporated into the facility Operations and Maintenance (O&M) manual as well as procedures to follow in the event the gauge indicates operation is outside those ranges.

b. Raw Material Unloading and Mixing

i. Raw materials must remain in airtight packing while being stored.

ii. All offloading and mixing operations must be conducted in an enclosed area under negative draw pressure, with all exhaust from these operations vented through the dust collector (DC1 & DC5). The dust collector must operate at all times that offloading or mixing operations occur.

iii. Emissions from the dust collector (DC1 &DC5) must not exceed 0.005 gr/dry standard cubic foot (dscf) as measured by the average of three test runs using 40 C.F.R. Part 60, Appendix A, Test Method 5.

iv. The dust collector (DC1 & DC5) must be equipped with filters that meet a control efficiency of 99.5 percent efficiency.

c. Carbon Production Furnace (PSK Furnace)

i. All waste gas from the carbon production furnace must exhaust to a Thermal Oxidizer (TO1 & TO4) followed by a Selective Catalytic Reduction (SCR1 & SCR2) DeNOx system. The thermal oxidizer followed by SCR DeNOx system must be operated and maintained in continuous operation at all times when the carbon furnace is in operation.

ii. The Thermal Oxidizer must meet all of the following limits:

A. A minimum non-methane organic compound (NMOC) destruction efficiency of 99.94 percent or must not cause a discharge of NMOCs into the atmosphere in

excess of 0.462 lb/hr, as determined using Method 25A or other test method approved in advance by Ecology.

B. A minimum hydrogen cyanide (HCN) destruction efficiency of 99 percent or must not cause a discharge of hydrogen cyanide into the atmosphere in excess of 0.234 lb/hr, as determined using EPA Method OTM-29 or other test method approved in advance by Ecology.

C. A minimum carbon monoxide (CO) destruction efficiency of 99.7 percent or must not cause a discharge of CO into the atmosphere in excess of 2.321 lb/hr, as determined using EPA Method 10 or other test method approved in advance by Ecology.

iii. The thermal oxidizer must be operated at or above the average temperature maintained during the latest source test but must not be operated at less than 1,400 degrees F. The average temperature during the latest source test for the source test must be identified at or near the temperature monitor.

iv. The owner or operator must install, calibrate, maintain, and operate a monitoring device for the continuous measurement and recording of the thermal oxidizer chamber temperature (or sampled at intervals no greater than 15 seconds and recorded as 1-minute averages).

v. The owner or operator must annually test or replace the temperature monitoring system thermocouples or pyrometers. If performed, the test must consist of either a physical or electronically simulated comparison and must follow manufacturer specifications. The results of the test readings must be within +/- 14 degrees F. If the results of the test readings exceed +/- 14 degrees of the reference value, the thermocouple must be replaced or adjusted to read within +/- 14 degrees of the reference value.

vi. The exhaust from the SCR must meet all of the following limits:

A. 2.334 lb/hr nitrogen oxides (NOx), as determined using EPA Method 7E or other test method approved in advance by Ecology.

B. 0.700 lb/hr ammonia, as determined using BAAQMD ST-1B, EPA CTM-027, or an alternative method approved by Ecology.

vii. The owner or operator must conduct weekly monitoring using colorimetric tubes or a hand-held instrument capable of detecting concentrations at the required levels to accurately measure the concentration of ammonia downstream of the SCR. If the ammonia slip in the SCR exceeds 35 ppmvd, the owner or operator must take corrective action as soon as possible, but no later than within 24 hours, on the ammonia dosing unit to reduce ammonia slip below this level. If corrective action is taken, the owner or operator must monitor to verify the concentration is below 35 ppmvd. The weekly monitoring using colorimetric tubes and any corrective action measures must be recorded in the onsite maintenance log.

d. Cooling Tower

i. The Cooling Tower (CT1 & CT2) must maintain the design drift rate of 0.0005 percent.

e. Milling Operations

i. The exhaust from the multi-stage grinding process must be routed through the dust collector (DC2 & DC6). The dust collector must operate at all times that the multi-stage grinding process is in use.

ii. Emissions from the dust collector must not exceed 0.005 gr/dscf as measured by the average of three test runs using 40 C.F.R. Part 60, Appendix A, Test Method 5.

iii. The dust collector must be equipped with filters that meet a control efficiency of 99.5 percent efficiency.

f. Compounding Reactor

i. If silane gas is not fully utilized in the process, the compounding units must exhaust to a thermal oxidizer (TO2 & TO5) followed by a dust collector system (DC3 & DC7).

ii. The acetylene deposition process must exhaust to the thermal oxidizer (TO3 & TO6). The thermal oxidizer must meet the following limit:

A. A minimum non-methane organic compound (NMOC) destruction efficiency of 99.82 percent or an outlet exhaust of 0.10 lb/hr, as determined using Method 25A or other test method approved in advance by Ecology.

iii. The thermal oxidizer (TO3 & TO6) chamber temperature must be at least 1,500 degrees F whenever the acetylene deposition process is exhausted to the unit.

iv. The owner or operator must install, calibrate, maintain, and operate a monitoring device for the continuous measurement and recording of the thermal oxidizer chamber temperature (or sampled at intervals no greater than 15 seconds and recorded as 1 minute averages).

v. The owner or operator must annually test or replace the temperature monitoring system thermocouples or pyrometers. If performed, the test must consist of either a physical or electronically simulated comparison and must follow manufacturer specifications. The results of the test readings must be within +/- 15 degrees F. If the results of the test readings exceed +/- 15 degrees of the reference value, the thermocouple must be replaced or adjusted to read within +/- 15 degrees of the reference value.

vi. Emissions from the dust collector system must not exceed 0.005 gr/dscf as measured by the average of three test runs (of at least 60 minutes each, or a shorter time period if approved by Ecology in advance, using EPA Method 5.

vii. The inlet temperature to the dust collector system must be less than 499 degrees F. The owner or operator must install, calibrate, maintain, and operate a monitoring device for the continuous measurement and recording of the inlet

display or record of the inlet temperature must be readily accessible on site for operational control or inspection.

viii. The dust collector system must be equipped with filters that meet a control efficiency of 99.5 percent.

g. Silicon-Carbon Handling & Packaging

i. All carbon and silicon handling and packaging operations must be conducted in an enclosed area under negative draw pressure with all exhaust from these operation vented through the dust collector (DC4 & DC8). The dust collector must operate at all times that silicon-carbon handling or packaging operations are occurring.

ii. Emissions from the dust collector must not exceed 0.005 gr/dscf as measured by the average of three test runs using EPA Method 5.

iii. The dust collector must be equipped with filters that meet a control efficiency of 99.5 percent.

h. Air Handling Units

i. All five Air Handling Units (located in various buildings) must use pipeline quality natural gas.

i. Emergency Generators (three sets, six individual engines, two in parallel per set)

i. Each diesel engine-generator must be equipped with a properly operated and maintained non-resettable hour meter (total of six for the facility).

ii. All diesel-fueled compression ignition engines must be fueled by ultra-low sulfur diesel fuel with a sulfur content of no more than 0.0015 percent by weight. Records must be kept for each diesel-fueled compression ignition engine in accordance with Approval Condition 3.

iii. Each of the generator must not be operated more than 100 hours for maintenance or reliability testing in any consecutive 12-month period.

iv. Only one generator may be operated at a time for no more than 30 minutes per day, between 7:00am and 5:00pm, for non-emergency purposes.

v. There must be no operation of diesel engine-generators to produce power for demand-response arrangements, peak shaving arrangements, nor to provide power as part of a financial arrangement with another entity, or to supply power to the grid.

vi. Replacement of these engines, if necessary, must be with emergency engines with EPA-approved emission levels for the date of installation of the replacement engine (the EPA Tiered Emission Levels for the date of installation).

j. Fire Water Pump Diesel Engines

i. Each diesel engine must be equipped with a properly operated and maintained non-resettable hour meter (total of two for the facility).

ii. All diesel-fueled compression ignition engines must be fueled by ultra-low sulfur diesel fuel with a sulfur content of no more than 0.0015 percent by weight. Records must be kept for each diesel-fueled compression ignition engine in accordance with Approval Condition 3.

iii. Each of the Pump Engines must not be operated more than 100 hours for maintenance or reliability testing in any consecutive 12-month period.

iv. Only one Pump Engine may be operated at a time, for non-emergency purposes.

2. Operation & Maintenance

a. The Permittee must follow all recommended installation, configuration, operation, and maintenance provisions supplied by emission unit and component manufacturers.

b. An operations and maintenance (O&M) manual must be developed by the Permittee for each emission unit, process, and activity. The manufacturer's instructions may be referenced in the O&M manual.

i. The O&M manual must include the following, at a minimum:

A. Normal operating parameters for emissions units, processes, and activities.

B. A maintenance schedule for each emissions unit, process, and activity.

C. A description of the monitoring procedures.

D. Monitoring and record keeping requirements.

E. Actions for abnormal control system operation.

F. Additional project-specific information, as needed.

ii. The O&M manuals must be developed within 30 days of commencing operation of each emission unit.

c. Emission units, processes, and activities must be operated and maintained in accordance with the O&M manual.

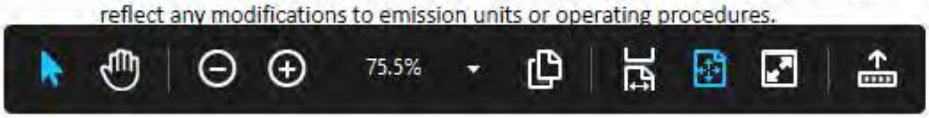
d. The Permittee must assess all air quality related complaints received. The Permittee must evaluate the complaint and, for valid complaints, initiate corrective action in response to a complaint within three calendar days of receipt of the complaint.

3. Monitoring & Recordkeeping

a. The O&M manual and any other relevant air quality-related operating plan or fugitive dust control program (FDCP) must be reviewed annually.

i. The date of each review and the person performing each review must be documented in the O&M manual.

ii. The O&M manual and FDCP/other relevant operating plan must be updated to reflect any modifications to emission units or operating procedures.



b. O&M records must be kept on premises in hard copy or readily available on-site electronically.

c. For all air-quality related complaints, the following records must be kept:

i. A written record of the complaint received by the Permittee or forwarded to the Permittee.

ii. The Permittee's action to investigate the validity of the complaint, any corrective action that was taken in response to the complaint, and the effectiveness of the remedial action.

d. The date, time, duration, and cause of any periods where control technology equipment is out of service, while the associated emission unit is operational, must be documented and maintained.

e. All data required by this NOC Approval Order must be maintained in a readily retrievable manner for a period of five years and must be made available to authorized representatives of Ecology upon request.

f. The Permittee must complete any additional monitoring or recordkeeping necessary to determine compliance with the requirements of this NOC Approval Order, as determined by Ecology.

g. Operation tracking using annual hours of operation compiled monthly, on a rolling 12-month basis for the emergency generators and FWP diesel engines.

h. Weekly records of the pressure differential across dust collectors.

i. Annual records of natural gas usage and supplier certification sheets.

j. Annual records of the sulfur content for diesel usage and supplier certification sheets.

4. Testing

a. The Permittee must submit a test plan to Ecology for review and approval at least 30 days prior to source testing. Ecology may require a new protocol for re-test events conducted after a failed source test, when required, and Ecology may approve a shorter timeframe for submission for the re-test protocol. The test plan must include the following information, at a minimum:

i. Identification of each emission unit(s) to be tested.

ii. The operating parameters to be monitored during the test.

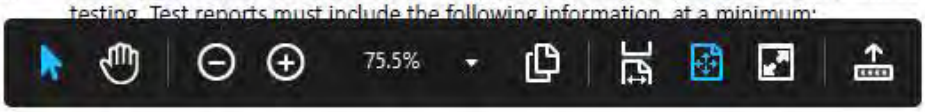
iii. A description of the emission unit(s) to be tested.

iv. The time and date of the proposed source test.

v. Identification and qualifications of the source test personnel.

vi. A description of the test methods and procedures to be used.

b. Test reports must be submitted to Ecology within 60 days of completion of the source testing. Test reports must include the following information, at a minimum:



i. The information described under Approval Condition 4(a).

ii. The information described in the test plan and any subsequent test plan approval letters.

iii. Field and analytical laboratory data.

iv. Quality assurance/quality control procedures and documentation.

v. Analyzer data recorded during the test.

vi. A summary of results, reported in units and averaging periods consistent with the applicable emission limit.

vii. A summary of control system and equipment operating conditions.

viii. Copies of all field data.

ix. Chain of custody information.

x. Calibration documentation.

xi. Discussion of any abnormalities associated with the results.

xii. A statement signed by the senior management official of the testing firm certifying the validity of the source test report.

xiii. Emission calculations.

c. The Permittee must provide adequate sampling ports, safe sampling platforms, and access to platforms and utilities for sampling and testing, in accordance with 40 C.F.R. 60.8, 40 C.F.R. 63.7(d), and WAC 173-400-105(4).

d. When information obtained by Ecology indicates the need to quantify emissions, Ecology may require the Permittee to conduct material analysis or air emission testing under WAC 173-400-105. This testing requirement is in addition to any testing required by Ecology in this NOC Approval Order, other permits, or other state or federal requirements.

e. For initial and subsequential compliance testing, the carbon production furnace and compounding reactor must be operated with a production rate of at least 90 percent of the highest operation loads achieved at the facility in the previous 12 months of operation.

f. Initial compliance test for all eight dust collectors (DC1 – DC8) must be demonstrated by testing the inlet and outlet of each dust collector within 180 days of starting-up the dust collectors. The test plan must detail the test methods used for each pollutant, the operational data that will be collected during the test, and any other relevant information about the test. Subsequent compliance testing for each dust collector will be reduced to once every five years on the outlet grain loading after completion of a passing initial compliance test.

g. After all eight dust collectors have established a passing initial compliance test, continued compliance testing for each dust collector may be demonstrated by

collectors for both Modules. Each subsequent five year interval compliance test, the other four dust collectors must be tested.

h. Initial compliance for, each Module, with Condition 1(c)and 1(f) [carbon production furnace TO, Silane Abatement TO, and Acetylene TO emission limits] must be demonstrated by testing the inlet and exhaust of each thermal oxidizer, at 90 percent of production rate, within 180 days of commissioning the carbon production furnace and compounding reactor. Compliance testing for each emission must consist of at least three separate 60 minute test runs.

i. Continued compliance testing for each TO, for each Module, must be demonstrated by testing the exhaust outlet of each TO every 12 months, starting 12 months after the initial compliance test. If three consecutive tests demonstrate compliance with the emission limits for a pollutant, the frequency of source testing for that pollutant will be reduced to once every three years. If any source test demonstrates noncompliance with an emission limit for a pollutant, the frequency of source testing for that pollutant returns to once every 12 months until three consecutive tests demonstrate compliance for that specific source/equipment, at which time the testing frequency returns to once every three years. Compliance testing for each compound must consist of at least three separate 60 minute test runs.

j. Initial compliance with Condition 1(c)(vi)(A) (SCR limits) must be demonstrated by testing the exhaust of the SCR DeNOx exhaust stack within 180 days of commissioning the carbon production furnace. Compliance testing for each compound must consist of at least three separate 60 minute test runs. For the purpose of determining compliance, the arithmetic means of results of the three runs shall apply.

k. Continued compliance testing for the SCR, for each Module, must be demonstrated by testing the exhaust of the SCR DeNOx exhaust stack every 12 months, starting 12 months after the initial compliance test. Compliance testing for each emission must consist of at least three separate 60 minute test runs.

5. Reporting

a. All notifications, plans, reports, and other submittals must be submitted in a manner approved by Ecology.

Washington State Department of Ecology
Eastern Regional Air Quality Program
4601 N. Monroe Street
Spokane, WA 99205-1295

Electronic Annual Report Submittals: ecyaqciero@ecy.wa.gov

OR AS DIRECTED.

b. The Permittee must notify Ecology within one business day of the receipt of any valid

c. The Permittee must notify Ecology of commissioning of emission units listed in the Equipment List above within seven days of commissioning each piece of emissions related equipment, unless otherwise specified by Ecology. The notice must include:

   i. Make, model, serial number, etc.

d. The Permittee must submit results of all required monitoring, outlined in this approval order, to Ecology on an annual basis. Results must be submitted to Ecology by January 31.

e. The Permittee must notify Ecology within thirty days of the following events:

   i. Commencement of construction of the project.

   ii. Completion of the construction of the project.

   iii. If construction or operation has been discontinued for more than 18 months.

6. General Conditions

a. **Activities Inconsistent with this Order** - Any activity undertaken by the Permittee, or others, in a manner that is inconsistent with the data and specifications submitted as part of the NOC application or this NOC Approval Order, must be subject to Ecology enforcement under applicable regulations.

b. **Availability of Order** - Legible copies of this NOC Approval Order and any O&M manual(s) must be available to employees in direct operation of the equipment described in the NOC application and must be available for review upon request by Ecology.

c. **Compliance Assurance Access** - Access to the source by representatives of Ecology or the United States Environmental Protection Agency (EPA) must be permitted upon request. Failure to allow access is grounds for enforcement action under the federal Clean Air Act or the Washington State Clean Air Act and may result in revocation of this NOC Approval Order.

d. **Discontinuing Construction or Operation** – This NOC Approval Order will become invalid if construction of the equipment described in the NOC application and this NOC Approval Order does not commence within 18 months after receipt of this NOC Approval Order.

   If construction or operation is discontinued for 18 months or longer on a portion or all of the equipment described in the NOC application and this NOC Approval Order, the portion of the NOC Approval Order regulating the inactive equipment will become invalid. Ecology may extend the 18-month period upon request by the Permittee and a satisfactory showing that an extension is justified.

e. **Equipment Operation** - Operation of the facility must be conducted in compliance with all data and specifications submitted as part of the NOC application and in accordance with O&M manuals, unless otherwise approved in writing by Ecology.

f. **Registration** - Periodic emissions inventory and other information may be requested by Ecology. The requested information must be submitted within 30 days of receiving the request, unless otherwise specified. All fees must be paid by the date specified.

g. **Testing** – When information obtained by Ecology indicates the need to quantify emissions, Ecology may require the Permittee to conduct material analysis or air emission testing under WAC 173-400-105. This testing requirement is in addition to any testing required by Ecology in this Order, other permits, or other state or federal requirements.

h. **Violation Duration** - If the Permittee violates an approval condition in this NOC Approval Order, testing, recordkeeping, monitoring, or credible evidence will be used to establish the starting date of the violation. The violation will be presumed to continue until testing, recordkeeping, monitoring, or other credible evidence indicates compliance. A violation of an approval condition includes, but is not limited to, failure of air pollution control equipment, failure of other equipment resulting in increased emissions, or a failed source test indicating an exceedance of an emission limit.

i. **Odor** - The Permittee must not cause or allow the generation of any odor which unreasonably interferes with any other property owner's use and enjoyment of their property. The Permittee must use recognized good practice and procedures to reduce odors to a reasonable minimum.

j. **Obligations Under Other Laws or Regulations** - Nothing in this NOC Approval Order must be construed so as to relieve the Permittee of its obligations under any state, local, or federal laws or regulations.

k. **Maintaining Compliance** - It must not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the operations in order to maintain compliance with the conditions of this NOC Approval Order.

l. **Changes in Operations** - Any changes in operation contrary to information submitted in the NOC application must be reported to Ecology at least 60 days before the changes are implemented. Such changes in operation may require a new or amended NOC Approval Order.

Authorization may be modified, suspended, or revoked in whole or part for cause, including, but not limited to, the following:

- Violation of any terms or conditions of this authorization.
- Obtaining this authorization by misrepresentation or failure to disclose full all relevant facts.

The provisions of this authorization are severable and, if any provision of this authorization or application of any provision to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this authorization, must not be affected thereby.

Your Right to Appeal

You have a right to appeal this NOC Approval Order to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt of this NOC Approval Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do all of the following within 30 days of the date of receipt of this NOC Approval Order:

- File your appeal and a copy of this NOC Approval Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this NOC Approval Order on Ecology in paper form - by mail or in person (see addresses below). E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Address and Location Information

Street Addresses:
Street Addresses:

Department of Ecology
Attn: Appeals Processing Desk
300 Desmond Drive SE
Lacey, WA 98503

Pollution Control Hearings Board
1111 Israel Rd SW
STE 301
Tumwater, WA 98501

Mailing Addresses:

Department of Ecology
Attn: Appeals Processing Desk
PO Box 47608
Olympia, WA 98504-7608

Pollution Control Hearings Board
PO Box 40903
Olympia, WA 98504-0903

E-mail Address:

Department of Ecology
Not currently available (see WAC 371-08)

Pollution Control Hearings Board
Pchb-shbappeals@eluho.wa.gov

Americans with Disabilities Act Information

Accommodation Requests

To request ADA accommodation including materials in a format for the visually impaired, call Ecology at 360-407-7668 or visit https://ecology.wa.gov/accessibility. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.

Dated on this 11th Day of July 2023.

Prepared by:

Andy Kruse, PE
Air Quality Program
Department of Ecology
State of Washington

Approved by:

Karin Baldwin
Air Quality Eastern Region, Section Manager
Department of Ecology
State of Washington

City of Moses Lake
STATE ENVIRONMENTAL POLICY ACT

Mitigated Determination of Non-Significance

Date: February 6, 2023

Lead agency: City of Moses Lake

Agency Contact: Nathan Pate AICP, Senior Planner - Community Development

Agency File Number: PLN2022-0085 Group 14 Technologies Conditional Use Permit

Description of proposal: An application for a Conditional Use Permit (CUP) for Group14 Technologies, Inc - Battery Active Materials Factory (BAM Factory or Project). The BAM Factory would produce a lithium-ion battery anode material with the goal of meeting the demands of the growing electric vehicle (EV) market. Group14's product is a silicon-carbon composite material that improves the energy density and reduces the cost of lithium-ion batteries. The product is produced using a three-step process, consisting of:

- A carbon scaffold is synthesized from dry chemical raw materials.
- The carbon is milled to a target particle size distribution.
- The milled carbon is compounded in a reactor using silane gas to form a silicon-carbon composite.

The overall Project would include the following elements: construction of internal roads, egress and ingress from an adjacent road, process module buildings, air emission control systems, administrative building, warehouse, operations building, maintenance building, central utility building, solid waste storage building, parking, stormwater facility, wastewater conveyance, various utilities, and associated facilities to support operations totaling approximately 46 acres. Construction includes approximately 1,040,000 square feet building(s); proposed height of approximately 130 feet; and phasing of up to 6-modules.

Location: The property is located at 13400 East Wheeler Road, Moses Lake, Washington, within the portion of Section 20, Township 19 North, Range 29 East, W.M. Grant County, Washington, and identified as Assessor's Parcel No. 091121650.

Applicant(s): Frank Bruneel, Group14 Technologies, Inc, 8502 Maltby Road, Woodinville, WA 98072 and Matt Laccinole, HDR Engineering, Inc., 929 108th Ave NE Suite 1300, Bellevue, WA 97204-1134.

The City of Moses Lake acting as lead agency for this proposal has determined that this

proposal, as mitigated, will not have a probable significant adverse impact on the environment. Pursuant to WAC 197-11-350(3), the proposal has been clarified, changed, and conditioned to include necessary mitigation measures to avoid, minimize, or compensate for probable significant impacts. An environmental impact statement (EIS) is not required under RCW 43.21C.030. This review was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public upon request.

The lead agency for this proposal has determined that certain mitigation measures shall be necessary in order to issue a Determination of Non-Significance for this project. Failure to comply with the mitigation measures herein will result in the issuance of a Determination of Significance (DS) for this project. This determination is based on the following findings and conclusions; and the necessary mitigation measures listed below are based on project specific analysis:

1. On December 15, 2022, the Notice of Application and Preliminary SEPA Decision was issued with a comment period ending January 5, 2023.
2. The Applicant shall comply with the construction standards and all other requirements outlined in the City of Moses Lake Fire Marshal department letter dated December 22, 2022 and supplemental letter dated February 06, 2023. The fire mitigation fees of $382,500.00 shall be remitted to the City prior to building permit issuance. This amount may be reduced subject to approval of the on-site fire brigade as outlined within the February 06, 2023 Fire Marshal letter.
3. In accordance with the Group14 Technologies, Inc. Battery Active Materials Factory Cultural Resources Survey Report prepared by Dave Iverson, M.A., RPA, Tamara Uldall, BA and Jennifer Ferris, MA, RPA with HDR Engineering, Inc. dated November 16, 2022, during the cultural resources field inventory no historic or precontact cultural resources were observed and no further investigations are recommended for the Project as presently defined. HDR recommends an inadvertent discovery plan be developed and implemented during Project construction as the Project is within an area that ranges from very high to moderately low risk for containing cultural resources.
    a. The Applicant shall follow the Inadvertent Discovery Plan (IDP) submitted to the City on January 19, 2023 as prepared by Tamara Uldall, BA and Jennifer Ferris, MA, RPA with HDR, Inc. The Applicant shall transmit the IDP to the Department of Archaeology and Historic Preservation (DAHP) for final concurrence prior to earth disturbance.
4. The Applicant shall comply with all requirements outline in the preliminary Geotechnical Report prepared by Matthew A. Miller, P.E .with Associated Earth Sciences, Inc., dated October 19, 2004, which was incorporated and augmented by DRAFT Geotechnical Report dated November 2022, prepared by Julio A. Gonzalez, P.E. with Western Pacific Engineering and Survey, included but not limited to:
    a. The Applicant shall adhere to the best management practices (BMPs) as outlined in the Stormwater Management Manual for Eastern Washington, the Geotechnical Reports and as annotated within the SEPA Checklist.
    b. The Applicant shall comply with the Structural and Site Design

Recommendations found within the DRAFT Geotechnical Report dated November 2022, prepared by Julio A. Gonzalez, P.E. with Western Pacific Engineering and Survey.

5. The Applicant shall adhere to the findings and requirements as outlined in the Group14 Technologies, Inc. Battery Active Materials Factory Hydrogeologic Assessment prepared by HDR Engineering, Inc. dated November 4, 2022. A review of available information and nearby wells was performed for this hydrogeologic assessment which showed the proposed Project has no planned effects on the groundwater system. This conclusion is based on no groundwater dewatering during construction and no groundwater withdrawals or recharge required for Project operations. Potential unplanned effects on the groundwater system are from unexpected spills that could impact community Well #18 but will be mitigated through an emergency action plan. In addition, the perched aquifer system is likely separated by a confining layer from the deeper water supply aquifer within the basalt bedrock, which should slow or preclude a release from reaching Well #18.
    a. The Applicant shall submit an Emergency Action Plan to the City for review and consideration with development of the Conditional Use Permit.
6. The Applicant shall comply with the recommendations found within the Group14 Technologies, Inc. Battery Active Materials Factory Phase I Environmental Site Assessment, dated November 15, 2022, prepared by HDR Engineering, Inc, for the purpose of reducing the environmental conditions that may adversely affect the Subject Property.
7. The Applicant and the City of Moses Lake have addressed mitigation measures identified within the Group14 Battery Active Materials Factory Vehicular Traffic Study prepared by Jake Pi, PE, PTOE with HDR Engineering, Inc. dated November 4, 2022. Based on the traffic impact analysis conducted, all but one of the study intersections are expected to operate at or better than Moses Lake's standard of LOS D, with or without the Project during AM and PM peak hours. The Road L NE intersection is currently operating at LOS E during the PM peak hour, it is expected to continue at LOS E in 2027 with or without the Project. This is caused by the high volume of free-flowing east-west traffic that allows somewhat limited gap opportunities for the stop-controlled north-south traffic to turn left or cross.

Pursuant to RCW 36.70A.070 (6)(b), "After adoption of the comprehensive plan by jurisdictions required to plan or who choose to plan under RCW 36.70A.040, local jurisdictions must adopt and enforce ordinances which prohibit development approval if the development causes the level of service on a locally owned transportation facility to decline below the standards adopted in the transportation element of the comprehensive plan, unless transportation improvements or strategies to accommodate the impacts of development are made concurrent with the development. These strategies may include increased public transportation service, ride-sharing programs, demand management, and other transportation systems management strategies. For the purposes of this subsection (6), "concurrent with the development" means that improvements or strategies are in place at the time of development, or that a financial commitment is in place to complete the improvements or strategies within six years. If the

collection of impact fees is delayed under RCW 82.02.050(3), the six-year period required by this subsection (6)(b) must begin after full payment of all impact fees is due to the county or city."

In accordance with the above statute, the Applicant shall complete mitigation (transportation improvements or strategies to accommodate the impacts of development that are made concurrent with the development) which includes but is not limited to:

a. Participation in a deferred and proportionate cost share for the improvement of Road L NE intersection, as agreed upon by the Applicant, and which shall be finalized through the Conditional Use Permit process.
b. The Applicant has prepared a preliminary "vision" of discussion and improvements as outlined within the January 18, 2023, e-mail prepared by Nate Larson PE, PTOE. Upon implementation, "the projected PM peak hour delay at the Road L NE intersection was cut almost in half, and LOS improved from E to C." The Applicant shall enter into an agreement with the City of Moses Lake outlining the obligations of both parties, prior to issuance of a building permit.

8. In keeping with the Battery Active Materials Factory Preliminary Hazard Summary (Proprietary and Confidential) dated November 17, 2022, the Applicant shall submit a Process Hazard Analysis, Final Hazard Summary, and Emergency Action Plan (listed in the Checklist – "Process Safety Management Plan," "Risk Management Plan," and "Emergency Plans") identifying the safeguards, necessary safety features, and emergency management to the City for review and consideration with the processing of the Conditional Use Permit.
9. As annotated within the SEPA Checklist, the Applicant shall provide a detailed potential annual emission calculations for/from each phase of the project that will be included with the Notice of Construction application. Potential emissions from project operations requires approval under Washington's minor new source review regulations. Project emissions will be less than both major new source review thresholds and Title V air operating permit thresholds. As such:
    a. Ecology will review and confirm that project emission units will comply with Best Available Control Technology for criteria and toxic air pollutants as required under WAC 173-400-113.
    b. The air permit review will also confirm that project emission increases will not adversely impact ambient air quality standards for criteria and toxic air pollutants.
    c. Per the submitted plans, Group14 shall install thermal oxidizers to control process emissions, selective catalytic reduction to reduce nitrogen oxide emissions, dust collectors to control particulate matter emissions from material transfers, and drift eliminators to reduce particulate matter emissions from cooling towers.
10. The Applicant shall adhere to strict industry safety standards for safe handling of silane and other hazardous gases, including inert-gas purging systems, trickle-purged vents for overpressure devices, backflow prevention and isolation devices, use of Diameter Index Safety System fittings, blast containment walls, double-walled piping, cathodic protection for sub-grade piping and ventilated gas distribution

cabinets. Continuous instrumentation-based hazardous gas monitoring shall be required around the furnaces to detect hydrogen, acetylene, silane, and other gases used in production. Contained areas that use nitrogen for inerting or processing shall also have continuous instrumentation-based monitoring for oxygen levels.

11. The Applicant shall provide fall or collapse separation / zone(s), as required for buildings designed to be approximately 140 feet in height.
12. The Project shall incorporate lighting design and associated directional lighting to lessen glare and light spillage pursuant to MLMC 18.31.080.

This MDNS is issued under WAC 197-11-350 and processed under WAC 197-11-355, the Optional DNS process and there is no further comment period.

Responsible Official: Kirsten Sackett
Title: Community Development Director
Address: City of Moses Lake
Community Development Dept.
321. S. Balsam Street
P.O. Box 1579
Moses Lake, WA 98837
Phone: (509) 764-3751

Signature Kirsten Sackett Date February 6, 2023
Kirsten Sackett

Appeals:

This MDNS may be appealed pursuant to the requirements of the Moses Lake Municipal Code Chapter 14.06. The 14-day appeal period commences on the date following the issuance of this MDNS, addressed to the Hearing Examiner, accompanied by a filing fee pursuant to the adopted fee schedule, and be filed in writing at the Community Development Department, 321 S. Balsam Street, PO Box 1579, Moses Lake, WA. The appeal must contain the items set forth in Moses Lake Municipal Code section 14.06.070(C).

Please note that failure to file a timely and compete appeal including the required items shall constitute waiver of all rights to an administrative appeal under City code.

APPENDIX E

Resource Lands and Critical Areas Report

Resource Lands and Critical Areas Report

Group14 Technologies, Inc.

Battery Active Materials Factory

City of Moses Lake, Washington
November 4, 2022

Contents

Tables

Figures

List of Acronyms

AES	Associated Earth Sciences, Inc.
BAM Factory or Project	Battery Active Materials Factory
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Maps
Group14	Group14 Technologies, Inc.
HDR	HDR Engineering, Inc.
IPaC	Information for Planning and Consultation
MLMC	Moses Lake Municipal Code
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
PHS	Priority Habitats and Species
REC	REC Silicon
SWAP	Source Water Assessment Program
USDA	US Department of Agriculture
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
WDFW	Washington Department of Fish and Wildlife
WDH	Washington Department of Health

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1 Introduction

Group14 Technologies, Inc. (Group14) is proposing a commercial-scale facility, referred to as Battery Active Materials Factory (BAM Factory or Project), located in the City of Moses Lake (City), Washington. The BAM Factory would produce a lithium-ion battery anode material with the goal of meeting the demands of the growing electric vehicle market. Group14's product is a silicon-carbon composite material that improves the energy density and reduces the cost of lithium-ion batteries. The product is produced using a three-step process, consisting of the following:

- A carbon scaffold is synthesized from dry chemical raw materials.
- The carbon is milled to a target particle size distribution.
- The milled carbon is compounded in a reactor using silane gas to form a silicon-carbon composite.

The overall Project would include the following elements: construction of internal roads, egress and ingress from an adjacent road, process module buildings, air emission control systems, administrative building, warehouse, operations building, maintenance building, central utility building, solid waste storage building, parking, stormwater facility, wastewater conveyance, various utilities, and associated facilities to support operations.

This report characterizes resource lands and critical areas on the Project site and documents potential impacts (if applicable) associated with the BAM Factory in accordance with Moses Lake Municipal Code (MLMC) 19.03 – Classification and Designation of Resource Lands and Critical Areas and Regulations for the Conservation and Protection of Resources Lands and Critical Areas.

2 Existing Conditions

2.1 Project Location

The BAM Factory site is in the City of Moses Lake, Washington in Sections 19 and 20 of Township 19 North, Range 29 East of the Willamette Meridian (see Figure 1 and Figure 2). The BAM Factory site consists of approximately 46 acres of primarily undeveloped land within Grant County parcels 091121635 and 110069492. The permanent project facility and access roads are located entirely on parcel 091121635. The temporary construction access road will cross through parcel 110069492. The investigation also included land to the south of the BAM Factory site that includes parcel 091121631. These three parcels are referenced herein as the "Subject Property" for this report and total approximately 175 acres.

The Project area is zoned Hi-Heavy Industrial by the City and is undeveloped, except for its use as agricultural land. No roads or structures currently exist within the Project area. The property to the east of the Project area is also zoned as Hi-Heavy Industrial and contains the Two Rivers Terminal Moses Lake's fertilizer plant.

The area evaluated as a part of this study may be greater than the final development footprint for the Project.

Figure 1. Project Location Map

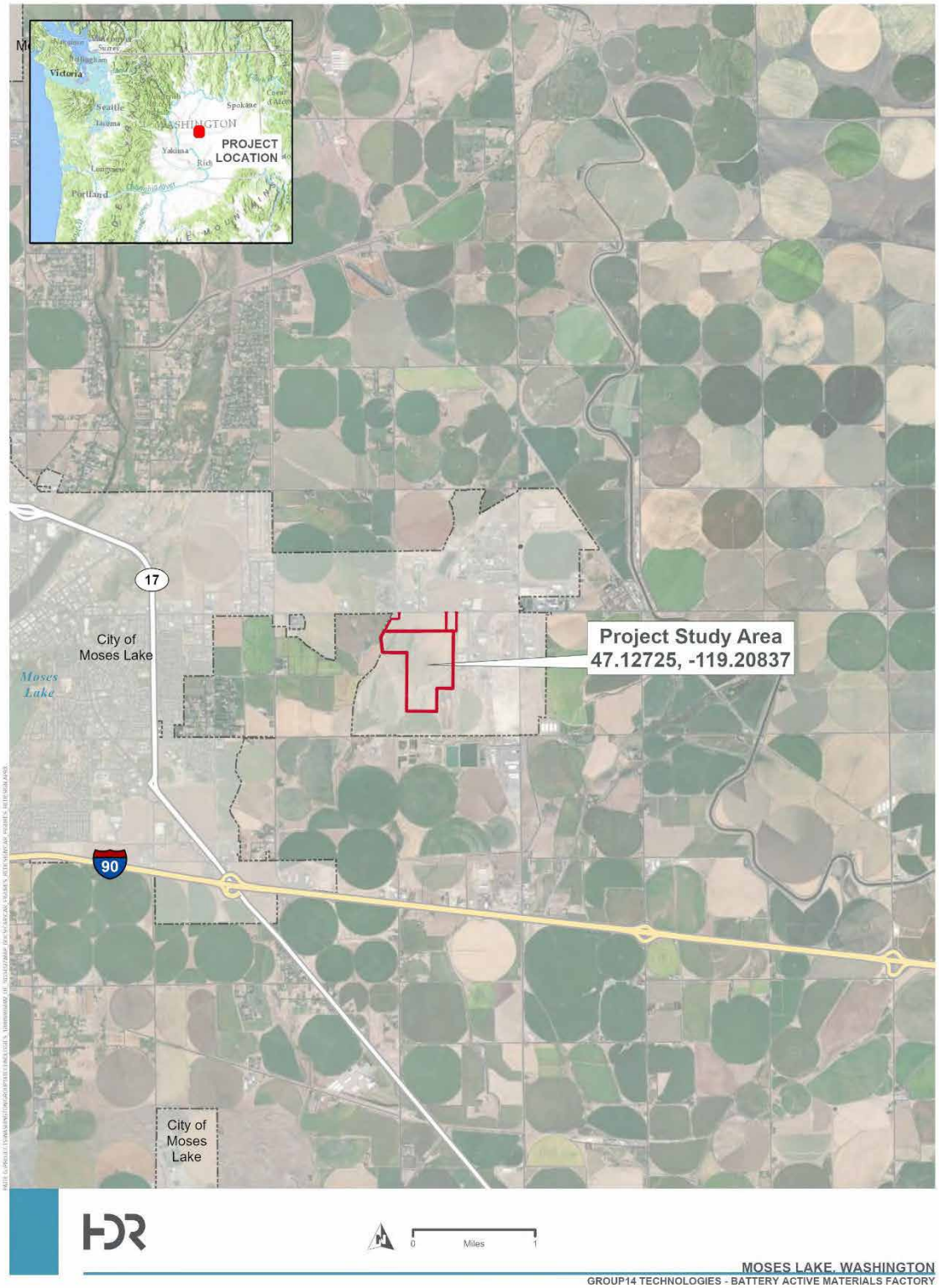
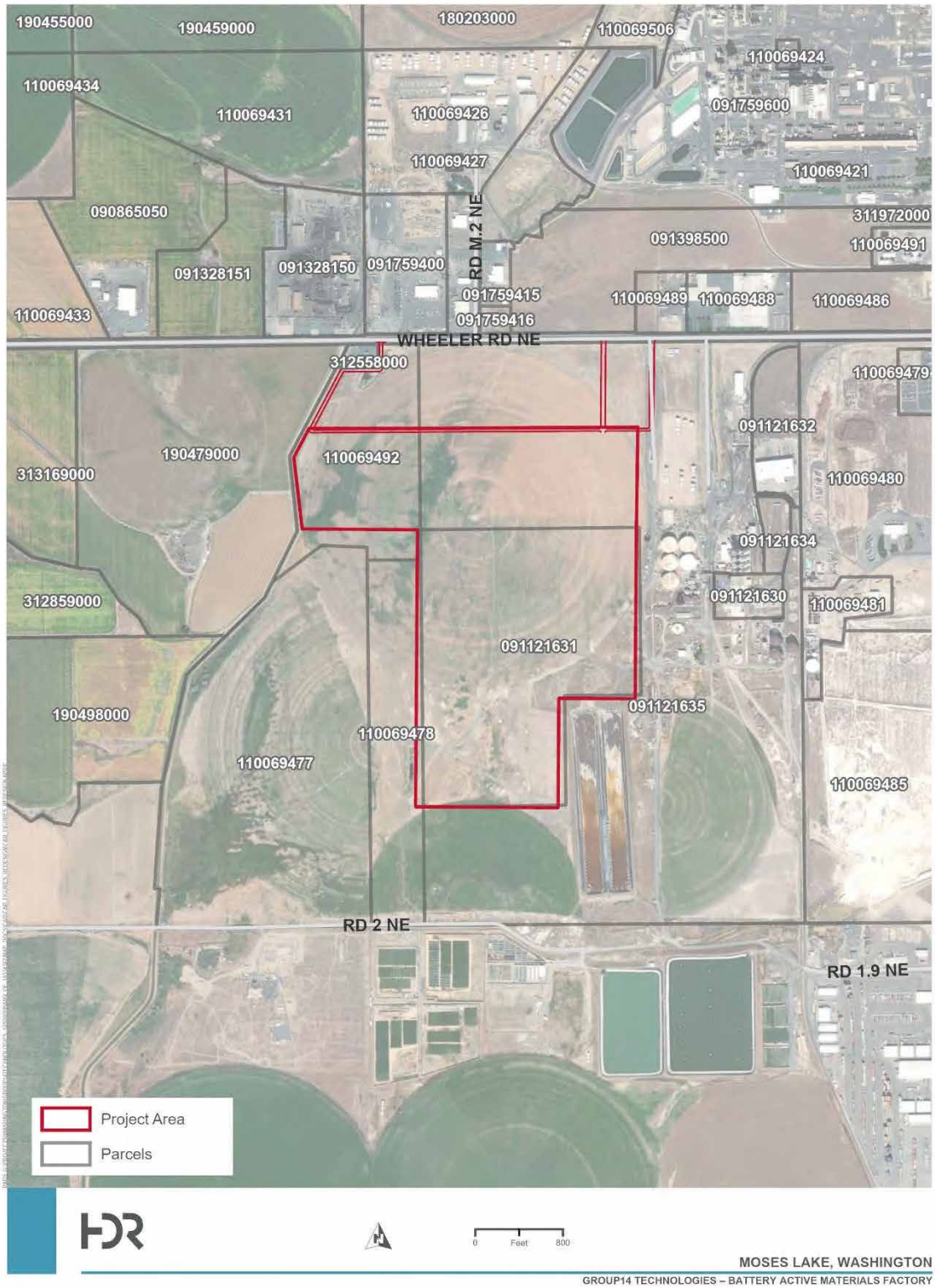


Figure 2. Parcel Map



2.2 Topography and Soils

The topography of the Project study area is generally flat with a slight downslope toward the west of less than 10 percent (Associated Earth Sciences, Inc. [AES] 2004). Currently, the site is in agricultural production and planted as pasture, irrigated, and grazed. The Project site has been in agriculture since at least the 1950s with surrounding industrial development increasing particularly from 1996 to the present (HDR Engineering, Inc. [HDR] 2022a).

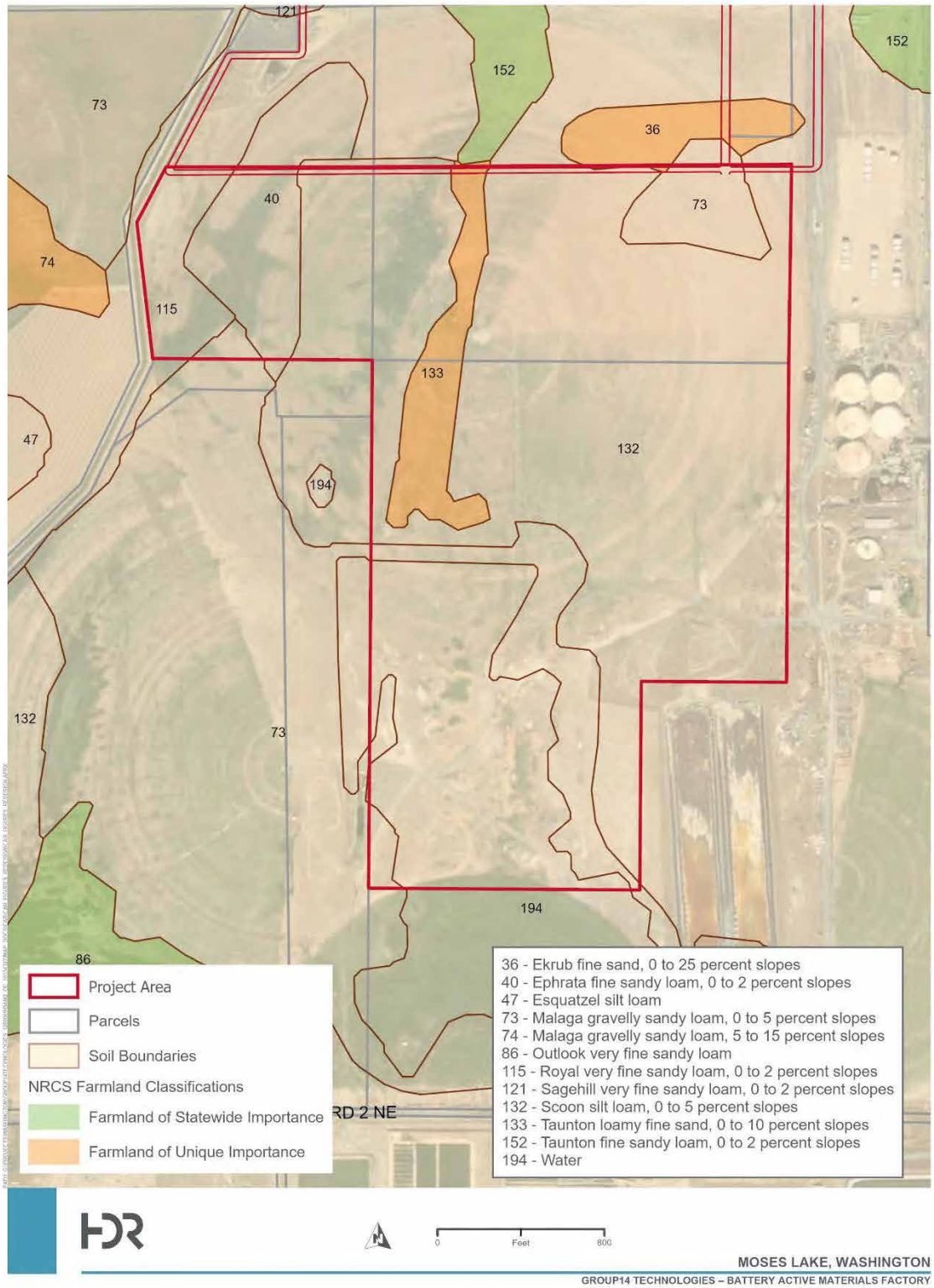
The US Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey identifies several soil map units within the Project study area (NRCS 2022). These soil map units are summarized in Table 1 and shown on Figure 3.

None of the soils mapped are considered hydric soils and, although water is mapped as a unit on the soil survey, no standing water was present and no evidence of standing water was observed during field investigations.

Table 1. Soil Map Units within Project Study Area

Map Unit Symbol	Map Unit Name	Slopes	Drainage Class	Hydric Soil Rating
36	Ekrub fine sand	0 to 25 percent	Somewhat excessively drained	No
40	Ephrata fine sandy loam	0 to 2 percent	Well drained	No
47	Esquatzel silt loam	-	Well drained	No
73	Malaga gravelly sandy loam	0 to 5 percent	Somewhat excessively drained	No
74	Malaga gravelly sandy loam	5 to 15 percent	Somewhat excessively drained	No
115	Royal very fine sandy loam	0 to 2 percent	Well drained	No
121	Sagehill very fine sandy loam	0 to 2 percent	Well drained	No
132	Scoon silt loam	0 to 5 percent	Well drained	No
133	Taunton loamy fine sand	0 to 10 percent	Well drained	No
152	Taunton fine sandy loam	0 to 2 percent	Well drained	No
194	Water			

Figure 3. Soils Map



2.3 Vegetation

As observed during the October 2022 field survey, the entire Project study area has been repeatedly modified for agriculture or other human uses and is now dominated by non-native vegetation including pasture grasses and a diverse assemblage of weeds, including a dense understory of cheatgrass (*Bromus tectorum*) and a shrub layer that consists of Russian thistle (*Sasola kali*), diffuse knapweed (*Centaurea diffusa*), Spotted knapweed (*Centaurea maculosa*), Canada thistle (*Cirsium arvense,*) and tall tumble mustard (*Sisymbrium altissimum*). The irrigated portions of the site support perennial forage grasses, including red fescue (Festuca rubra) and Kentucky blue grass (Poa pratense), and the entire site is regularly grazed by livestock.

3 Study Methods

Resource lands and critical areas are designated by the City and include:

- Resource lands – agricultural lands, forest lands, and mineral lands.
- Critical areas – aquifer recharge areas, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat areas.

A desktop review of the Project study area was conducted to identify documented occurrences of the resource lands and critical areas using the following resources:

- Aerial imagery via ESRI and Google Earth software.
- US Geological Survey (USGS) National Hydrography Dataset (NHD) mapped streams (USGS 2022).
- US Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) (USFWS 2022a).
- USDA NRCS Web Soil Survey (NRCS 2022).
- Federal Emergency Management Agency (FEMA) Map Service Center (FEMA 2022).
- USFWS Information for Planning and Conservation Report (IPaC) (USFWS 2022b).
- Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) on the Web (WDFW 2022a).
- WDFW SalmonScape (WDFW 2022b).
- Washington Department of Health (WDH) Source Water Assessment Program (SWAP) (WDH 2022).

Following the desktop review, HDR qualified professionals performed field investigations of the Project study area in October 2022 and a wetland delineation and rating study was performed by Ecosystems Northwest in August 2022. For resource lands and critical areas present on the Project study area, an evaluation of the potential Project impacts was conducted, and mitigation measures to comply with regulatory standards are incorporated into the proposed Project as appropriate.

4 Resource Land and Critical Area Results

As stated in the City code (MLMC 19.03.110-130), resource lands are not present in the City, and these are not discussed further in this report. The following sections document the critical areas in the Project study area and demonstrate the proposed Project as designed meets the applicable review standards and approval criteria found in MLMC Chapter 19.03.

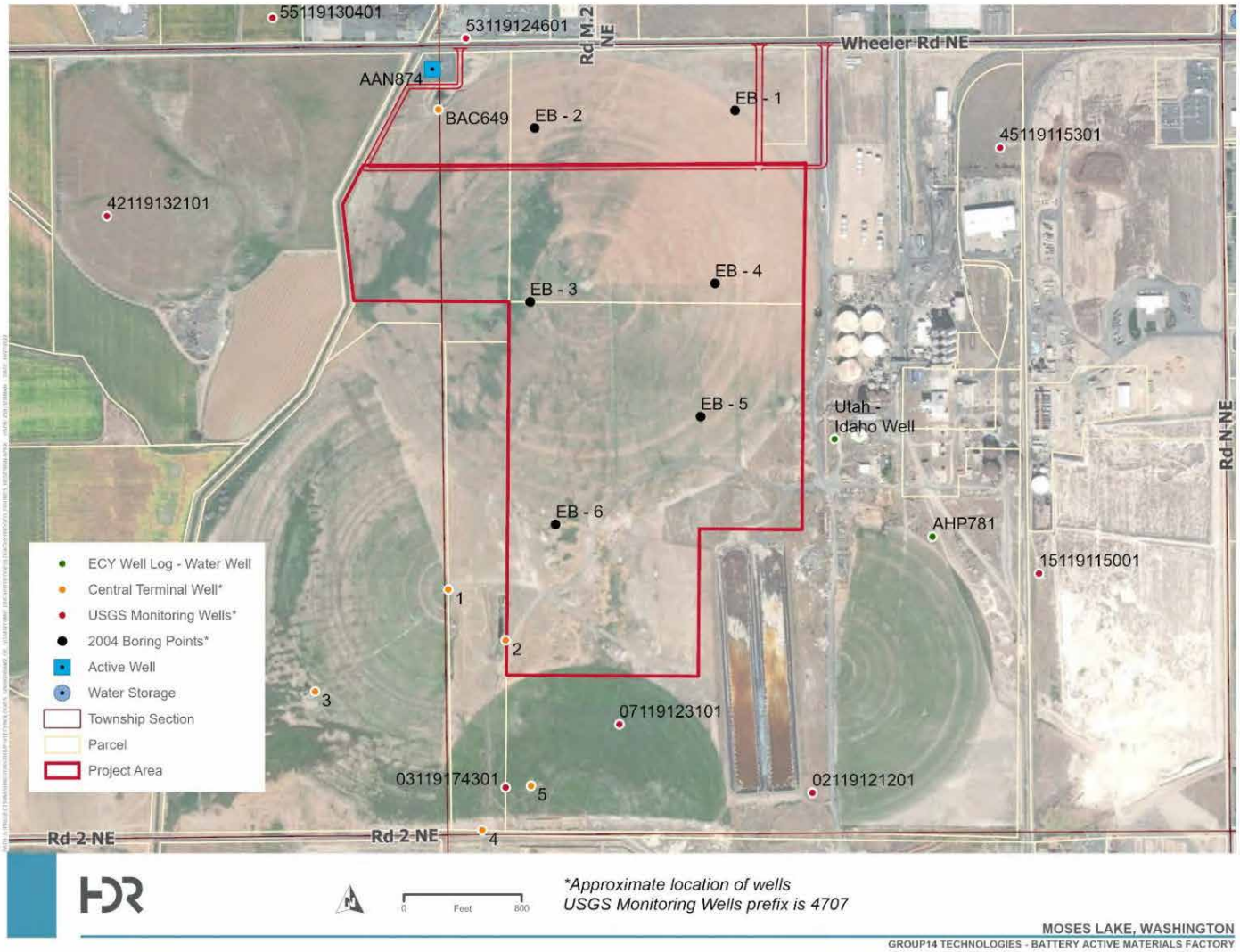
4.1 Aquifer Recharge Areas

The City defines aquifer recharge areas as those "areas which serve as critical groundwater recharge areas and which are highly vulnerable to contamination from intensive land uses within these areas." (MLMC 19.03.050(B)).

Nine active wells are located within 1,000 feet of the subject property (Figure 4). Of the nine wells, one is a domestic well located south of the property (well #4), one is a community well located northwest of the property, five are used for irrigation purposes, one well located east of the property is used for industrial water, and another has an unknown use (AHP781). Based on the proximity of these wells and water storage unit, and because the Project will involve hazardous substance processing and handling, a hydrogeological assessment was performed (MLMC 19.03.140(C)).

Based on the hydrogeologic assessment (HDR 2022b), the proposed Project is estimated to have no planned effects on the groundwater system and does not present a threat of contamination to the aquifer system. This conclusion is based on no groundwater dewatering during construction and no groundwater withdrawals or recharge required for the Project operations. Potential unplanned effects on the groundwater system are from unexpected spills that could impact community well #18 but will be mitigated through an emergency action plan. In addition, the perched aquifer system is likely separated by a confining layer from the deeper water supply aquifer within the basalt bedrock, which should slow or preclude a release from reaching well #18.

Figure 4. Groundwater Well Map



4.2 Frequently Flooded Areas

The City defines frequently flooded areas as those areas that "are prone to flooding and are identified in a report conducted for the city by FEMA dated January 5, 1989 and are identified on the Flood Insurance Rate Maps (FIRM)" (MLMC 19.03.150(A)).

The Project study area is in Zone X (Figure 5), an area of minimal flood hazard outside of the special flood hazard area and higher than the elevation of the 0.2-percent-annual-chance flood (or 500-year flood) per FIRM Panel 53025C1100C (effective date 2/18/2009) (FEMA 2022).

As frequently flooded areas are not present in or within 300 feet of the Project study area, a floodplain analysis is not required (MLMC 19.03.150(B)).

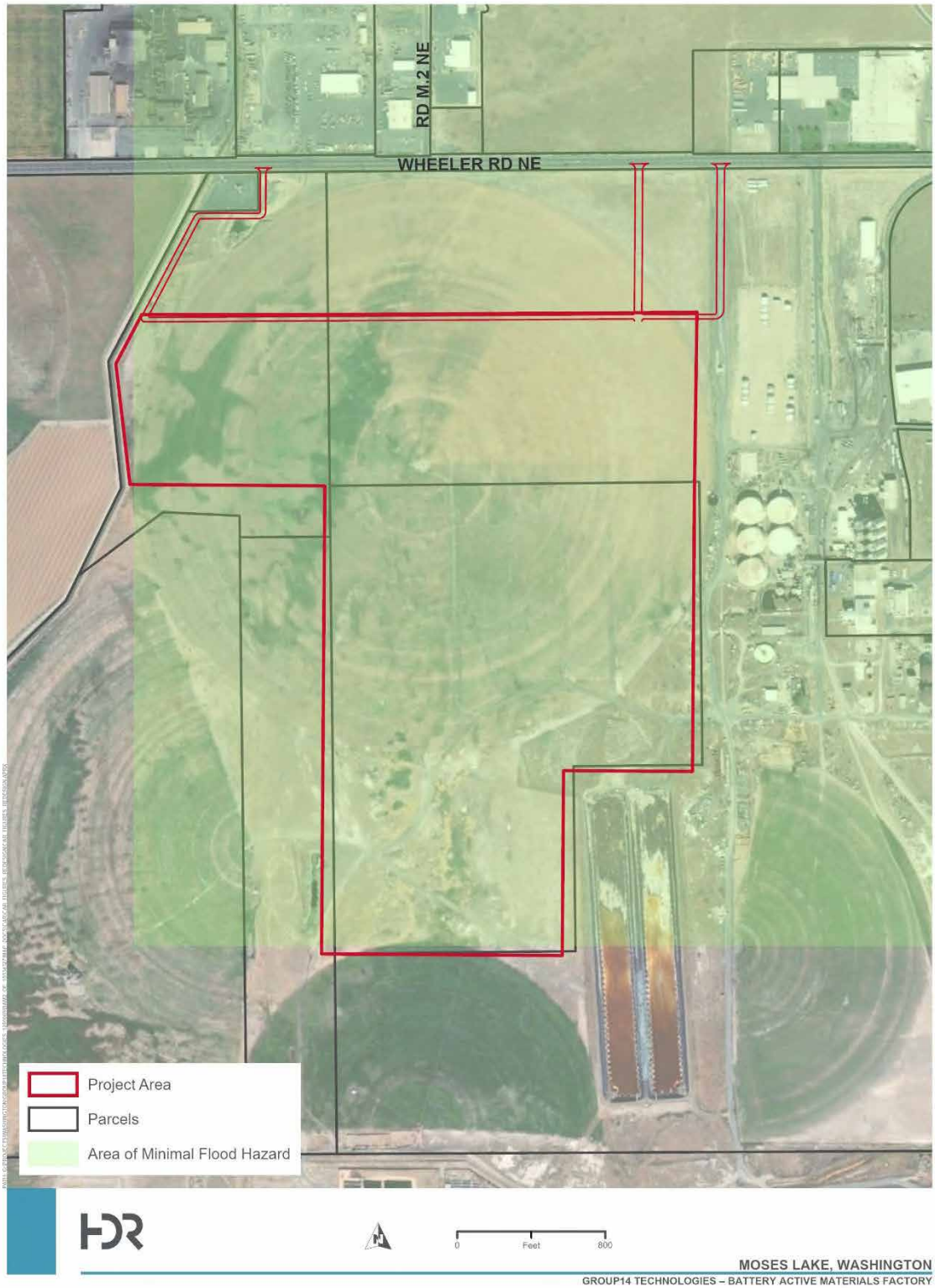
4.3 Geologically Hazardous Areas

The City defines geologically hazardous areas as those "areas that are susceptible to erosion, sliding, earthquake, or other geological events and pose a threat to the public health, safety, and welfare. The siting of residential, commercial, or industrial development within these areas is a potential hazard. These areas include steep slopes, landslide-erosion hazard areas, and seismic hazard areas." (MLMC 19.03.160(A)).

The Project study area was assessed for geologically hazardous areas during desktop research and site reconnaissance in October 2022. Based on the analysis provided in past geotechnical analysis and the current efforts, no geologically hazardous areas as defined in MLMC 19.03.160 were identified (AES 2004; Western Pacific Engineering and Survey [WPES] 2022).

As geologically hazardous areas are not present in or within 300 feet of the Project study area, a geotechnical report assessment is not required (MLMC 19.03.160(D)).

Figure 5. Floodplain Map



4.4 Fish and Wildlife Habitat Areas

The City defines fish and wildlife habitat areas as those being of critical importance in the maintenance and preservation of fish, wildlife, and natural vegetation. Fish and wildlife habitat areas are identified as follows (MLMC 19.03.170(A)):

- Areas with which federal or state endangered, threatened, and sensitive species of fish, wildlife, and plants have a primary association and which, if altered, may reduce the likelihood the species will maintain and reproduce over the long term.
- Habitats and species of local importance, including areas with state-listed monitor or candidate species or federally listed candidate species have a primary association and which, if altered, may reduce the likelihood the species will maintain and reproduce over the long term.
- Naturally occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat.
- Lakes, ponds, and streams planted with game fish by a governmental agency.
- State natural area preserves and natural resource conservation areas.

As summarized in the following sections, no fish and wildlife habitat areas are present in or within 300 feet of the Project study area, and a habitat management plan is not required (MLMC 19.03.180(D)).

4.4.1 Federal or State Endangered, Threatened, and Sensitive Species

The following listed species are protected under the federal Endangered Species Act (ESA) and were evaluated for potential presence on the project site (USFWS 2022b):

- Columbia Basin pygmy rabbit (*Brachylagus idahoensis*) – Endangered.
- Yellow-billed cuckoo (*Coccyzus americanus*) – Threatened.
- Monarch butterfly (*Danaus plexippus*) – Candidate.

No critical habitat for the listed species is in the Project study area. Habitat requirements for each species, discussed in more detail below, were not observed during an ecological field survey in October 2022 of the Project study area.

- Columbia Basin pygmy rabbit generally occurs in dense stands of big sagebrush growing in deep loose soils where it burrows or utilizes the abandoned burrows of other species. Adequate habitat was not observed in or within 300 feet of the Project study area, and species presence is not anticipated.
- Yellow-billed cuckoo occurs in open woodland with thick undergrowth, parks, and deciduous riparian woodland. Adequate habitat was not observed in or within 300 feet of the Project study area, and species presence is not anticipated.
- Monarch butterfly breeding areas are virtually all patches of milkweed in North America. Adequate habitat was not observed in or within 300 feet of the Project study area, and species presence is not anticipated.

Of the state-listed species identified in the WDFW PHS Program, only one potentially occurs in the habitat present on the site – burrowing owl (*Athene cunicularia*) (state candidate species) (WDFW 2022a). The existing PHS database shows the locations where one active nest site was observed in 2000 and two active nest sites were observed in 2001. These three sites are located in the northern portion of the Project study area and in land that is now

under center pivot irrigation. These sites were visited in 2022 during the biological site visit, and no burrows or owl activity was observed. It is likely the level of disturbance associated with agriculture and the irrigation of the area have made the historic nest location unsuitable for owls. The remainder of the site is also not adequate for owls. There was very little evidence of small mammal presence (prey that could support owl breeding), and no burrows adequate for nesting were observed.

The site was used by birds that have an affiliation with agriculture such as Red-winged blackbirds (*Agelaius phoniciceus*), European starlings (*Sturnus vulgaris*), Horned larks (*Eremophila alpestris*), and Western meadowlarks (*Sturnella neglecta*). Nesting, including ground nesting of passerines, is probably limited at this site by the regular agricultural disturbance.

4.4.2 Habitats and Species of Local Importance

The WDFW PHS Program identifies Eastside and Steppe and Shrub-Steppe habitats in the Project study area and vicinity (WDFW 2022a). As stated in the previous section, these mapped areas have been converted by agricultural practices and no longer exhibit attributes of native shrub-steppe habitat, and no native species of plants are present in or within 300 feet of the Project study area. Therefore, no habitats and species of local importance are present.

4.4.3 Naturally Occurring Ponds and State Natural Area Preserves

No naturally occurring ponds, regardless of acreage, or state natural area preserves are present in or within 300 feet of the Project study area. Two artificial evaporation ponds are located to the southeast of the Project study area.

4.4.4 Lakes, Ponds, and Streams Planted with Game Fish

Portions of the Project study area have been mapped as wetlands, and this was identified during the desktop review via the USGS NHD and the USFWS NWI (Figure 6). These mapped features include several small wetlands in the northeast portion of the site (PUBF – Palustrine unconsolidated bottom, semi permanently flooded), a large seasonally-flooded area along the western low part of the site and extending to the south (PEM1C – Palustrine, emergent, seasonally-flooded), a Lake-fringe wetland permanently-flooded (LIUBHx), and a separate lake fringe wetland semi-permanently-flooded (L2UBFx). There is also a mapped channel on the west boundary of the site.

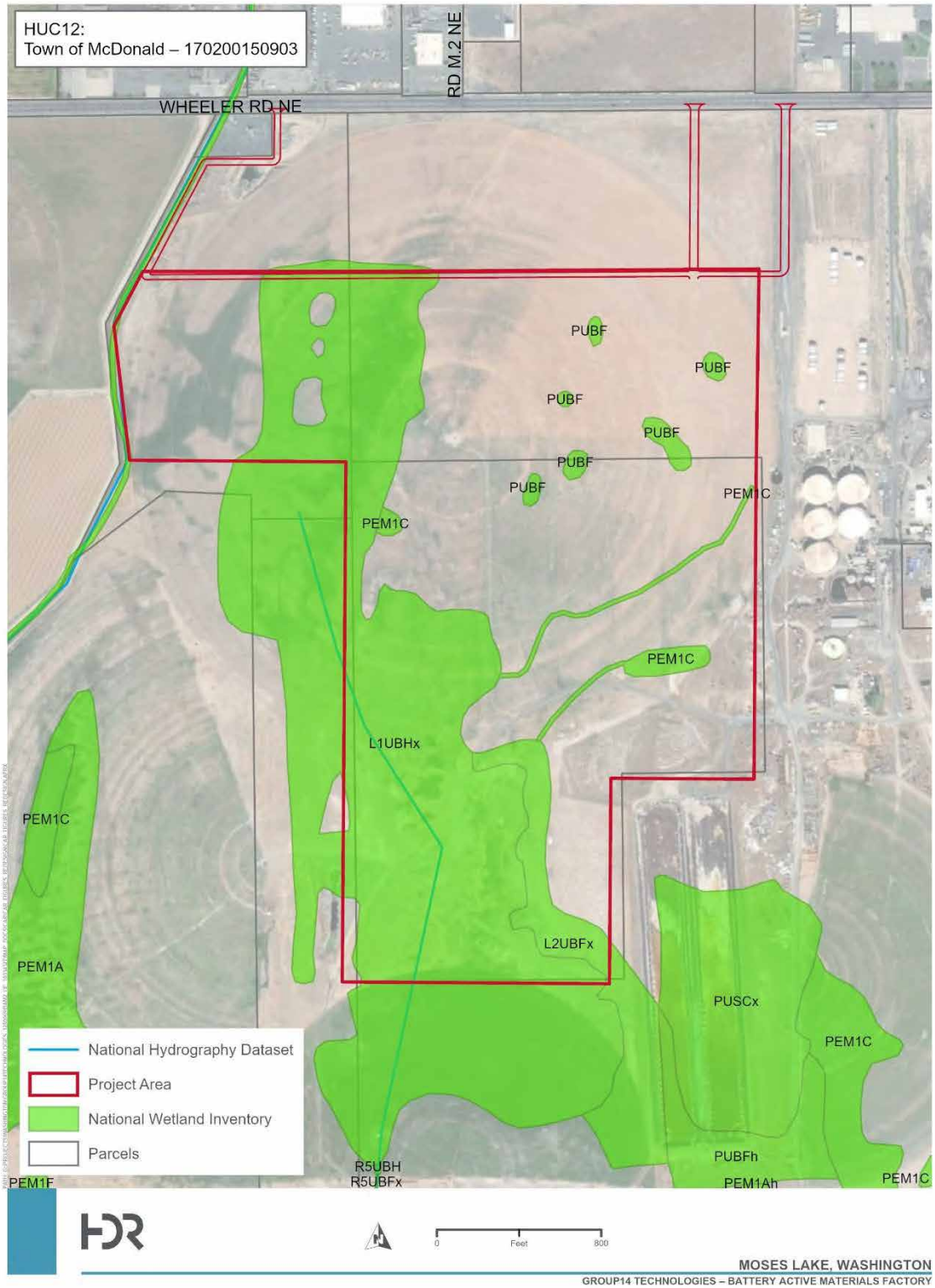
A field investigation was conducted by Ecosystems Northwest in August 2022. These mapped areas and the remainder of the site were investigated by a qualified wetland biologist, and no areas meeting the definition as wetlands were identified on or within 300 feet of the Project site. Soils present at the site did not display hydric soil indicators, and mapped soil types are listed as well-drained or somewhat excessively well-drained. There was no evidence of saturation or surface ponding at the site, and none of the vegetation observed at the site contained plants typically found in wetlands. The investigation did identify one area that did meet the mandatory wetland criteria, but this area is present well south of the Project area.

The NWI mapping at the site appears to have been in error. The site may have had a different hydrologic regime prior to the manipulation by agriculture, or the agricultural manipulation of the site may have introduced aerial photo signatures interpreted as wetlands by the mappers. Under current conditions, however, none of the areas mapped represent wetlands and the site appears well drained even though portions are regularly irrigated. The mapped lake fringe wetlands are clearly in error since there are no lakes near the Project site.

The channel along the west boundary of the Project site is an excavated ditch that drains industrial ponds north of Wheeler Road and is not a natural feature. The ditch was being actively excavated by heavy machinery during the biological site visit conducted on October 18, 2022.

No salmonids are mapped or stocked on SalmonScape in the irrigation ditches along the western boundary of the Project study area (WDFW 2022b). Therefore, the irrigation ditches are not considered fish and wildlife habitat. No other lakes, ponds, or streams are in or within 300 feet of the Project study area.

Figure 6. NWI and NHD Dataset Map



5 Conclusions

Based on the desktop and field investigation, no resource lands or critical areas were identified in or within 300 feet of the Project study area. Therefore, no further analysis is required.

6 References

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APPENDIX F

Social Cost of Carbon Memorandum

Memo

Date:	Sunday, June 09, 2024
Project:	Group14 Technologies, Inc. Battery Active Materials Factory
To:	File
From:	Kirk Dunbar, HDR
Subject:	Social Cost of Carbon

Introduction

The Department of Energy (DOE) requires projects calculate the Social Cost of Carbon as part of the National Environmental Policy Act process. According to the United States Government Interagency Working Group of Social Cost of Greenhouse Gases, the Social Cost of Greenhouse Gases, also known as the Social Cost of Carbon (SCC), represents the monetary impact resulting from the overall harm to society caused by adding a quantity of greenhouse gases (GHG) to the atmosphere during specified years. This cost encompasses various impacts of climate change, such as alterations in agricultural productivity, health repercussions, property destruction due to heightened flood risk and natural disasters, disturbances in energy infrastructure, potential for conflicts, environmental migration, and the value of ecosystem services[1]. This appendix presents the methodology used to calculate the SCC of the proposed project.

Methodology and Results

Greenhouse Gas Emissions

The greenhouse gases considered in calculating the SCC are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Emissions may be expressed in CO_2 equivalents (CO_2e) using the Fourth Assessment Report (AR4) of the Intergovernmental Panel on Climate Change (IPCC) global warming potentials (GWP), which reflect the relative potency of each gas in contributing to global warming over a specified timeframe. According to AR4, CO_2 has a GWP of 1, CH_4 has a GWP of 25, and N_2O has a GWP of 298. These GWP factors are utilized to standardize the assessment of GHG emissions, enabling a comprehensive evaluation of their climate impact across different gases.

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[1] Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, *Technical Supp[ort Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 12990,* 2021, Technical Support Document: Social Cost of Carbon, Methane, (whitehouse.gov)

To evaluate the proposed project's SCC, the project was segmented into three phases: construction (Phase 1), operations (Phase 2), and decommissioning (Phase 3).

Construction

Construction of the proposed project would result in temporary GHG emissions from sources including vehicle transportation of equipment and materials, use of construction machinery, and curing of concrete. Use of electricity during construction may indirectly increase GHG emissions depending on electric generation sources/methods employed by local utilities serving the site. The estimation of construction emissions utilized the California Emissions Estimator Model (CalEEMod), which generates emission projections by using general assumptions regarding construction equipment usage. CalEEMod was applied using an Industrial-Manufacturing land use classification and the total combined square footage of the project area. When feasible, project-specific values were incorporated; otherwise, default values were utilized. Furthermore, construction hours and time frames were assumed by CalEEMod. Emissions were projected over multiple years, resulting in a total estimated CO_2e of 2,100 metric tons associated with construction activities (Table 1).

Table 1. Construction GHG Emissions by Year

Construction Emissions by Year, Unmitigated (metric tons (MT))					
Year	**CO_2**	**CH_4**	**N_2O**	**R**	**CO_2e**
2023	769	0.02	0.05	0.32	786
2024	474	0.02	< 0.005	0	476
2025	473	0.02	< 0.005	0	474
2026	367	0.01	< 0.005	< 0.005	369
2027	1.82	< 0.005	< 0.005	0	1.82

Operations

The project’s emissions during operation were broken into scope 1 emissions (direct emissions) and scope 2 emissions (indirect emissions from purchased electricity). For scope 1 emissions, the facility operations would include thermal oxidizers, production furnaces, silane abatement dust collectors, diesel-fired emergency generators, fire pump engines, and miscellaneous air handling units.

Combined, these stationary sources are estimated to emit 26,840 metric tons CO_2e annually.

For Scope 2 emissions, the proposed project plans to purchase up to 400,000 megawatt hours per year of electricity for operations. Group14 plans to purchase all hydroelectric power, which would result in zero emissions from operations due to electricity. Therefore, under this scenario the total GHG emissions of the facility during operations is 26,840 metric tons CO_2e annually.

However, to be conservative a worst-case emissions scenario is also evaluated using emissions factors from EPA's eGrid State Output Emissions Rates 2022 for Washington State[2] (Table 2). This approach assumes all purchased electricity is based on current eGrid factors and does not account for emissions to vary from year to year based on electric generation sources and methods employed by local utilities serving the proposed project site.

Table 2. eGRID Emission Factors

Total Output Emission Factors (Washington)		
CO_2 Factor (lb / MWh)	**CH_4 Factor (lb / MWh)**	**N_2O Factor (lb / MWh)**
184.8	0.017	0.002

Maximum GHG emissions from purchased electricity for proposed project operations, presuming all electricity is generated from the current grid mix for the State of Washington, would be 33,715 metric tons of CO_2e per year. The total maximum GHG emissions from the project's operations for this worst case scenario are estimated to be 60,555 metric tons CO_2e annually.

Table 3. Annual Operational GHG Emissions

Annual Operational GHG Emissions					
Scope	**Description**	**CO_2 (MT)**	**CH_4 (MT)**	**N_2O (MT)**	**CO_2e (MT)**
Scope 1	Permitted Operations	22,805	10.6	12.6	26,840
Scope 2	Electricity Usage	0–33,529	0–3.08	0–0.36	0–33,715
Scope 1 & 2	Total	22,805–56,335	10.6 – 13.7	12.6–13.0	26,840–60,555

Social Cost of Carbon

In summary, the SCC encompasses major GHGs such as CO_2, CH_4, and N_2O. The construction emissions were estimated using CalEEmod, as detailed in above. Operational emissions, expected yearly, include onsite stationary combustion and indirect GHG gases linked to purchased electricity. Group14 plans to purchase all hydroelectric power and therefore will not have emissions associated with purchased electricity. However, a worst-case scenario regarding purchased electricity was also evaluated as described in the operations section above. As a note, possible ongoing changes in the electricity grid's decarbonization that may reduce the emissions associated with future electricity purchases were not considered in the

[2] EPA, *eGRID Summary Tables 2022*, 2024, https://www.epa.gov/system/files/documents/2024-01/egrid2022_summary_tables.pdf

worst-case scenario. The facility decommissioning procedures are uncertain and technological advancements may alter both decommissioning methods and the proposed project's overall lifetime. For analytical purposes, decommissioning emission are conservatively estimated to be equal to construction GHG emissions and expected to be completed in one year following the proposed project’s lifetime. The annual emissions for each phase were input to the DOE's Social Cost of Carbon Estimating Tool (DRAFT Version) to estimate the total cost of carbon for the proposed project’s lifetime. The following tables present the inputs to and calculated results from the DOE’s Estimating Tool.

Hydroelectric Power Scenario: Carbon Dioxide Emissions

SOCIAL COST OF CARBON DIOXIDE (CO2) ESTIMATING TOOL

Base Year: 2023 (Enter the base year on the instructions tab, step 2.)

	Enter CO2 emissions (metric tons) (Use negative numbers for emission reductions)			Phase 1 Present Value (in Base Year) of Estimated SC-CO2 by emissions year (2020$)[1]				Phase 2 Present Value (in Base Year) of Estimated SC-CO2 by emissions year (2020$)[1]				Phase 3 Present Value (in Base Year) of Estimated SC-CO2 by emissions year (2020$)[1]				Per ton SC-CO2 Value (2020$/metric ton CO2)[2, 3]			
Year of Emissions	Phase 1	Phase 2	Phase 3	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile
2020				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	51	76	152
2021				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15	52	78	155
2022				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15	53	79	159
2023	769			$12,259	$41,747	$61,781	$124,685	$0	$0	$0	$0	$0	$0	$0	$0	16	54	80	162
2024	474	22,805		$7,417	$25,474	$37,756	$76,231	$356,870	$1,225,618	$1,816,524	$3,667,664	$0	$0	$0	$0	16	55	82	166
2025	473	22,805		$7,259	$25,156	$37,345	$75,420	$349,970	$1,212,878	$1,800,567	$3,636,290	$0	$0	$0	$0	17	56	83	169
2026	367	22,805		$5,519	$19,309	$28,714	$57,992	$342,939	$1,199,841	$1,784,308	$3,603,633	$0	$0	$0	$0	17	57	84	173
2027	2	22,805		$27	$95	$141	$285	$335,783	$1,186,554	$1,767,770	$3,569,813	$0	$0	$0	$0	18	59	86	176
2028		22,805		$0	$0	$0	$0	$328,531	$1,173,004	$1,750,979	$3,534,887	$0	$0	$0	$0	18	60	87	180
2029		22,805		$0	$0	$0	$0	$321,191	$1,159,237	$1,733,954	$3,498,967	$0	$0	$0	$0	19	61	88	183
2030		22,805		$0	$0	$0	$0	$313,822	$1,145,276	$1,716,719	$3,462,159	$0	$0	$0	$0	19	62	89	187
2031		22,805		$0	$0	$0	$0	$307,892	$1,132,514	$1,700,359	$3,430,144	$0	$0	$0	$0	20	63	91	191
2032		22,805		$0	$0	$0	$0	$301,801	$1,119,523	$1,683,776	$3,397,074	$0	$0	$0	$0	21	64	92	194
2033		22,805		$0	$0	$0	$0	$295,606	$1,106,328	$1,666,991	$3,363,020	$0	$0	$0	$0	21	65	94	198
2034		22,805		$0	$0	$0	$0	$289,303	$1,092,953	$1,650,040	$3,328,052	$0	$0	$0	$0	22	66	95	202
2035		22,805		$0	$0	$0	$0	$282,943	$1,079,417	$1,632,908	$3,292,284	$0	$0	$0	$0	22	67	96	206
2036		22,805		$0	$0	$0	$0	$276,520	$1,065,744	$1,615,630	$3,255,776	$0	$0	$0	$0	23	69	98	210
2037		22,805		$0	$0	$0	$0	$270,079	$1,051,951	$1,598,223	$3,218,587	$0	$0	$0	$0	23	70	99	213
2038		22,805		$0	$0	$0	$0	$263,614	$1,038,057	$1,580,720	$3,180,817	$0	$0	$0	$0	24	71	100	217
2039		22,805		$0	$0	$0	$0	$257,162	$1,024,080	$1,563,104	$3,142,502	$0	$0	$0	$0	25	72	102	221
2040		22,805		$0	$0	$0	$0	$250,727	$1,010,037	$1,545,408	$3,103,735	$0	$0	$0	$0	25	73	103	225
2041		22,805		$0	$0	$0	$0	$244,909	$995,970	$1,527,250	$3,060,220	$0	$0	$0	$0	26	74	104	228
2042		22,805		$0	$0	$0	$0	$239,077	$981,866	$1,509,058	$3,016,594	$0	$0	$0	$0	26	75	106	232
2043		22,805		$0	$0	$0	$0	$233,244	$967,738	$1,490,832	$2,972,925	$0	$0	$0	$0	27	77	107	235
2044		22,805		$0	$0	$0	$0	$227,426	$953,600	$1,472,610	$2,929,242	$0	$0	$0	$0	28	78	108	239
2045		22,805		$0	$0	$0	$0	$221,632	$939,453	$1,454,390	$2,885,581	$0	$0	$0	$0	28	79	110	242
2046		22,805		$0	$0	$0	$0	$215,882	$925,332	$1,436,183	$2,841,966	$0	$0	$0	$0	29	80	111	246
2047		22,805		$0	$0	$0	$0	$210,170	$911,238	$1,418,000	$2,798,456	$0	$0	$0	$0	30	81	112	249
2048		22,805		$0	$0	$0	$0	$204,512	$897,179	$1,399,836	$2,755,069	$0	$0	$0	$0	30	82	114	253
2049			2,085	$0	$0	$0	$0	$0	$0	$0	$0	$18,185	$80,737	$126,315	$247,911	31	84	115	256
2050				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	32	85	116	260
2051				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	32	85	118	260
2052				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	33	86	119	261
2053				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	34	87	120	262
2054				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	34	88	121	263
2055				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	35	89	122	265
2056				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	35	90	123	267
2057				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	36	91	124	269
2058				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	37	92	125	271
2059				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	37	92	127	273
2060				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	38	93	128	275
2061				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	39	95	129	280
2062				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	40	96	131	285
2063				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	41	98	132	290
2064				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	42	99	134	295
2065				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	44	100	135	300
2066				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	45	102	137	305
2067				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	46	103	138	311
2068				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	47	105	140	316
2069				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	48	106	141	321
2070				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	49	108	143	326
TOTALS:	2,085	570,132	2,085	$32,481	$111,780	$165,737	$334,613	$6,941,602	$26,595,385	$40,316,137	$80,945,458	$18,185	$80,737	$126,315	$247,911				

Present Value (in Base Year) of Estimated SC-CO2 for all CO2 emissions (2020$)

	5% Average	3% Average	2.5% Average	3% 95th Percentile
Phase 1	$32,481	$111,780	$165,737	$334,613
Phase 2	$6,941,602	$26,595,385	$40,316,137	$80,945,458
Phase 3	$18,185	$80,737	$126,315	$247,911
Total	$6,992,267	$26,787,902	$40,608,190	$81,527,982

[1] The social cost estimates from the IWG represent the present value of damages from that year's emissions discounted back to the year of emissions. These columns discount that value to the base year in order to calculate the total net present value.

[2] Values from 2020–2050 are from Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide, Interim Estimates under E.O. 13990. Interagency Working Group on Social Cost of Carbon, United States Government. February 2021.

[3] Values from 2051–2070 are from Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: Consumer Furnaces, Appendix 14A. U.S. Department of Energy. June 2022.

Hydroelectric Power Scenario: Methane Emissions

SOCIAL COST OF METHANE (CH4) ESTIMATING TOOL

Base Year: 2023 (Enter the base year on the instructions tab, step 2.)

	Enter CH4 emissions (metric tons) (Use negative numbers for emission reductions)			Phase 1 Present Value (in Base Year) of Estimated SC-CH4 by emissions year (2020$)[1]				Phase 2 Present Value (in Base Year) of Estimated SC-CH4 by emissions year (2020$)[1]				Phase 3 Present Value (in Base Year) of Estimated SC-CH4 by emissions year (2020$)[1]				Per ton SC-CH4 Value (2020$/metric ton CH4)[2, 3]			
Year of Emissions	Phase 1	Phase 2	Phase 3	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile
2020				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	666	1,485	1,953	3,906
2021				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	693	1,532	2,009	4,035
2022				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	720	1,579	2,064	4,163
2023	0			$15	$33	$42	$86	$0	$0	$0	$0	$0	$0	$0	$0	747	1,626	2,120	4,292
2024	0	11		$15	$32	$42	$86	$7,835	$17,249	$22,536	$45,576	$0	$0	$0	$0	775	1,673	2,175	4,420
2025	0	11		$15	$32	$42	$86	$7,724	$17,216	$22,547	$45,534	$0	$0	$0	$0	802	1,720	2,230	4,548
2026	0	11		$7	$16	$21	$43	$7,606	$17,171	$22,544	$45,456	$0	$0	$0	$0	829	1,767	2,286	4,677
2027	0	11		$4	$8	$11	$21	$7,482	$17,114	$22,527	$45,344	$0	$0	$0	$0	856	1,814	2,341	4,805
2028		11		$0	$0	$0	$0	$7,352	$17,046	$22,498	$45,199	$0	$0	$0	$0	884	1,861	2,397	4,934
2029		11		$0	$0	$0	$0	$7,218	$16,967	$22,457	$45,025	$0	$0	$0	$0	911	1,908	2,452	5,062
2030		11		$0	$0	$0	$0	$7,080	$16,878	$22,405	$44,822	$0	$0	$0	$0	938	1,954	2,508	5,190
2031		11		$0	$0	$0	$0	$6,990	$16,850	$22,415	$44,806	$0	$0	$0	$0	972	2,010	2,572	5,344
2032		11		$0	$0	$0	$0	$6,892	$16,810	$22,412	$44,753	$0	$0	$0	$0	1,007	2,065	2,635	5,498
2033		11		$0	$0	$0	$0	$6,788	$16,758	$22,396	$44,665	$0	$0	$0	$0	1,041	2,121	2,699	5,652
2034		11		$0	$0	$0	$0	$6,678	$16,695	$22,367	$44,544	$0	$0	$0	$0	1,075	2,176	2,763	5,806
2035		11		$0	$0	$0	$0	$6,564	$16,621	$22,326	$44,392	$0	$0	$0	$0	1,110	2,231	2,827	5,959
2036		11		$0	$0	$0	$0	$6,445	$16,538	$22,273	$44,211	$0	$0	$0	$0	1,144	2,287	2,891	6,113
2037		11		$0	$0	$0	$0	$6,322	$16,445	$22,210	$44,003	$0	$0	$0	$0	1,179	2,342	2,955	6,267
2038		11		$0	$0	$0	$0	$6,197	$16,343	$22,137	$43,769	$0	$0	$0	$0	1,213	2,397	3,019	6,421
2039		11		$0	$0	$0	$0	$6,069	$16,234	$22,054	$43,512	$0	$0	$0	$0	1,247	2,453	3,083	6,574
2040		11		$0	$0	$0	$0	$5,939	$16,117	$21,963	$43,233	$0	$0	$0	$0	1,282	2,508	3,147	6,728
2041		11		$0	$0	$0	$0	$5,822	$15,996	$21,856	$42,877	$0	$0	$0	$0	1,319	2,564	3,210	6,873
2042		11		$0	$0	$0	$0	$5,702	$15,869	$21,741	$42,504	$0	$0	$0	$0	1,357	2,620	3,273	7,018
2043		11		$0	$0	$0	$0	$5,581	$15,735	$21,619	$42,117	$0	$0	$0	$0	1,394	2,676	3,336	7,162
2044		11		$0	$0	$0	$0	$5,458	$15,596	$21,490	$41,717	$0	$0	$0	$0	1,432	2,732	3,399	7,307
2045		11		$0	$0	$0	$0	$5,334	$15,452	$21,355	$41,304	$0	$0	$0	$0	1,469	2,788	3,462	7,452
2046		11		$0	$0	$0	$0	$5,210	$15,303	$21,213	$40,879	$0	$0	$0	$0	1,507	2,844	3,524	7,596
2047		11		$0	$0	$0	$0	$5,085	$15,149	$21,065	$40,445	$0	$0	$0	$0	1,544	2,900	3,587	7,741
2048		11		$0	$0	$0	$0	$4,961	$14,992	$20,912	$40,001	$0	$0	$0	$0	1,582	2,955	3,650	7,886
2049			0	$0	$0	$0	$0	$0	$0	$0	$0	$34	$105	$147	$279	1,619	3,011	3,713	8,031
2050				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,657	3,067	3,776	8,175
2051				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,680	3,096	3,807	8,193
2052				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,703	3,128	3,841	8,228
2053				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,726	3,159	3,874	8,263
2054				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,749	3,190	3,908	8,297
2055				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,772	3,221	3,942	8,332
2056				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,797	3,256	3,979	8,373
2057				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,823	3,291	4,017	8,415
2058				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,848	3,326	4,055	8,456

SOCIAL COST OF METHANE (CH4) ESTIMATING TOOL

Base Year:	2023

(Enter the base year on the instructions tab, step 2.)

	Enter CH4 emissions (metric tons) (Use negative numbers for emission reductions)			Phase 1 Present Value (in Base Year) of Estimated SC-CH4 by emissions year (2020$)[1]				Phase 2 Present Value (in Base Year) of Estimated SC-CH4 by emissions year (2020$)[1]				Phase 3 Present Value (in Base Year) of Estimated SC-CH4 by emissions year (2020$)[1]				Per ton SC-CH4 Value (2020$/metric ton CH4)[2, 3]			
				5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile
2059				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,873	3,360	4,092	8,497
2060				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,899	3,395	4,130	8,539
2061				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,021	3,548	4,296	9,067
2062				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,143	3,702	4,462	9,594
2063				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,264	3,856	4,628	10,122
2064				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,386	4,009	4,794	10,650
2065				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,508	4,163	4,960	11,177
2066				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,632	4,325	5,141	11,758
2067				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,757	4,488	5,323	12,338
2068				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,881	4,651	5,504	12,919
2069				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	3,006	4,814	5,686	13,499
2070				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	3,130	4,976	5,867	14,079
TOTALS:	0	266	0	$55	$122	$159	$322	$160,335	$409,145	$551,319	$1,090,686	$34	$105	$147	$279				

Present Value (in Base Year) of Estimated SC-CH4 for all CH4 emissions (2020$)

	5% Average	3% Average	2.5% Average	3% 95th Percentile
Phase 1	$55	$122	$159	$322
Phase 2	$160,335	$409,145	$551,319	$1,090,686
Phase 3	$34	$105	$147	$279
Total	$160,425	$409,372	$551,625	$1,091,287

[1] The social cost estimates from the IWG represent the present value of damages from that year's emissions discounted back to the year of emissions. These columns discount that value to the base year in order to calculate the total net present value.

[2] Values from 2020–2050 are from Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide, Interim Estimates under E.O. 13990. Interagency Working Group on Social Cost of Carbon, United States Government. February 2021.

[3] Values from 2051–2070 are from Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: Consumer Furnaces, Appendix 14A. U.S. Department of Energy. June 2022.

Hydroelectric Power Scenario: Nitrous Oxide Emissions

SOCIAL COST OF NITROUS OXIDE (N2O) ESTIMATING TOOL

Base Year: 2023 (Enter the base year on the instructions tab, step 2.)

	Enter N2O emissions (metric tons) (Use negative numbers for emission reductions)			Phase 1 Present Value (in Base Year) of Estimated SC-N2O by emissions year (2020$)[1]				Phase 2 Present Value (in Base Year) of Estimated SC-N2O by emissions year (2020$)[1]				Phase 3 Present Value (in Base Year) of Estimated SC-N2O by emissions year (2020$)[1]				Per ton SC-N2O Value (2020$/metric ton N2O)[2]			
Year of Emissions	Phase 1	Phase 2	Phase 3	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile
2020				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5,779	18,405	27,131	48,256
2021				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5,981	18,842	27,688	49,464
2022				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6,183	19,279	28,244	50,671
2023	0			$319	$986	$1,440	$2,594	$0	$0	$0	$0	$0	$0	$0	$0	6,385	19,717	28,801	51,879
2024	0	13		$31	$98	$143	$258	$79,350	$247,482	$362,264	$651,894	$0	$0	$0	$0	6,587	20,154	29,358	53,087
2025	0	13		$31	$97	$142	$256	$77,888	$245,484	$360,131	$647,305	$0	$0	$0	$0	6,789	20,591	29,914	54,295
2026	0	13		$30	$96	$141	$254	$76,386	$243,394	$357,886	$642,431	$0	$0	$0	$0	6,991	21,028	30,471	55,502
2027	0	13		$30	$95	$141	$252	$74,851	$241,216	$355,536	$637,291	$0	$0	$0	$0	7,193	21,465	31,028	56,710
2028		13		$0	$0	$0	$0	$73,288	$238,959	$353,089	$631,906	$0	$0	$0	$0	7,395	21,902	31,585	57,918
2029		13		$0	$0	$0	$0	$71,704	$236,629	$350,549	$626,294	$0	$0	$0	$0	7,597	22,339	32,141	59,125
2030		13		$0	$0	$0	$0	$70,105	$234,232	$347,922	$620,473	$0	$0	$0	$0	7,799	22,776	32,698	60,333
2031		13		$0	$0	$0	$0	$68,887	$232,321	$345,783	$615,971	$0	$0	$0	$0	8,047	23,268	33,309	61,692
2032		13		$0	$0	$0	$0	$67,627	$230,323	$343,542	$611,205	$0	$0	$0	$0	8,295	23,760	33,921	63,051
2033		13		$0	$0	$0	$0	$66,330	$228,244	$341,203	$606,194	$0	$0	$0	$0	8,542	24,252	34,532	64,410
2034		13		$0	$0	$0	$0	$65,003	$226,091	$338,775	$600,957	$0	$0	$0	$0	8,790	24,744	35,144	65,770
2035		13		$0	$0	$0	$0	$63,653	$223,870	$336,262	$595,510	$0	$0	$0	$0	9,038	25,236	35,755	67,129
2036		13		$0	$0	$0	$0	$62,283	$221,586	$333,670	$589,871	$0	$0	$0	$0	9,285	25,728	36,366	68,488
2037		13		$0	$0	$0	$0	$60,900	$219,245	$331,005	$584,055	$0	$0	$0	$0	9,533	26,219	36,978	69,847
2038		13		$0	$0	$0	$0	$59,507	$216,853	$328,271	$578,077	$0	$0	$0	$0	9,781	26,711	37,589	71,206
2039		13		$0	$0	$0	$0	$58,108	$214,414	$325,473	$571,953	$0	$0	$0	$0	10,029	27,203	38,201	72,565
2040		13		$0	$0	$0	$0	$56,708	$211,933	$322,617	$565,694	$0	$0	$0	$0	10,276	27,695	38,812	73,924
2041		13		$0	$0	$0	$0	$55,533	$209,693	$319,972	$559,799	$0	$0	$0	$0	10,567	28,225	39,456	75,349
2042		13		$0	$0	$0	$0	$54,341	$207,404	$317,265	$553,767	$0	$0	$0	$0	10,857	28,754	40,100	76,773
2043		13		$0	$0	$0	$0	$53,137	$205,071	$314,499	$547,611	$0	$0	$0	$0	11,147	29,283	40,745	78,197
2044		13		$0	$0	$0	$0	$51,924	$202,697	$311,679	$541,345	$0	$0	$0	$0	11,437	29,813	41,389	79,621
2045		13		$0	$0	$0	$0	$50,707	$200,288	$308,810	$534,978	$0	$0	$0	$0	11,727	30,342	42,033	81,045
2046		13		$0	$0	$0	$0	$49,487	$197,847	$305,896	$528,524	$0	$0	$0	$0	12,018	30,872	42,677	82,470
2047		13		$0	$0	$0	$0	$48,269	$195,378	$302,939	$521,991	$0	$0	$0	$0	12,308	31,401	43,321	83,894
2048		13		$0	$0	$0	$0	$47,054	$192,886	$299,946	$515,391	$0	$0	$0	$0	12,598	31,930	43,965	85,318
2049			0	$0	$0	$0	$0	$0	$0	$0	$0	$254	$1,054	$1,643	$2,816	12,888	32,460	44,610	86,742
2050				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	13,179	32,989	45,254	88,166
2051				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	13,479	33,426	45,727	88,606
2052				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	13,798	33,954	46,354	89,984
2053				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	14,118	34,483	46,981	91,362
2054				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	14,438	35,011	47,609	92,739
2055				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	14,758	35,539	48,236	94,117
2056				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	15,091	36,092	48,890	95,463
2057				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	15,425	36,644	49,544	96,808
2058				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	15,758	37,196	50,199	98,154

SOCIAL COST OF NITROUS OXIDE (N2O) ESTIMATING TOOL

Base Year:	2023

(Enter the base year on the instructions tab, step 2.)

	Enter N2O emissions (metric tons) (Use negative numbers for emission reductions)			Phase 1 Present Value (in Base Year) of Estimated SC-N2O by emissions year (2020$)[1]				Phase 2 Present Value (in Base Year) of Estimated SC-N2O by emissions year (2020$)[1]				Phase 3 Present Value (in Base Year) of Estimated SC-N2O by emissions year (2020$)[1]				Per ton SC-N2O Value (2020$/metric ton N2O)[2]			
2059				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	16,091	37,748	50,853	99,499
2060				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	16,424	38,300	51,507	100,845
2061				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	17,077	39,165	52,485	103,794
2062				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	17,730	40,030	53,463	106,743
2063				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	18,382	40,895	54,441	109,692
2064				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	19,035	41,760	55,419	112,641
2065				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	19,687	42,625	56,397	115,590
2066				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	20,354	43,515	57,403	118,657
2067				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	21,020	44,404	58,409	121,725
2068				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	21,686	45,293	59,416	124,793
2069				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	22,352	46,183	60,422	127,860
2070				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	23,018	47,072	61,428	130,928
TOTALS:	0	316	0	$441	$1,372	$2,008	$3,613	$1,563,032	$5,523,542	$8,314,986	$14,680,487	$254	$1,054	$1,643	$2,816				

Present Value (in Base Year) of Estimated SC-N2O for all N2O emissions (2020$)

	5% Average	3% Average	2.5% Average	3% 95th Percentile
Phase 1	$441	$1,372	$2,008	$3,613
Phase 2	$1,563,032	$5,523,542	$8,314,986	$14,680,487
Phase 3	$254	$1,054	$1,643	$2,816
Total	$1,563,727	$5,525,968	$8,318,637	$14,686,915

[1] The social cost estimates from the IWG represent the present value of damages from that year's emissions discounted back to the year of emissions. These columns discount that value to the base year in order to calculate the total net present value.

[2] Values from 2020–2050 are from Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide, Interim Estimates under E.O. 13990. Interagency Working Group on Social Cost of Carbon, United States Government. February 2021.

[3] Values from 2051–2070 are from Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: Consumer Furnaces, Appendix 14A. U.S. Department of Energy. June 2022.

Worst-Case Scenario: Carbon Dioxide Emissions

SOCIAL COST OF CARBON DIOXIDE (CO_2) ESTIMATING TOOL

Base Year: 2023 (Enter the base year on the instructions tab, step 2.)

	Enter CO_2 emissions (metric tons) (Use negative numbers for emission reductions)			Phase 1 Present Value (in Base Year) of Estimated SC-CO_2 by emissions year (2020$)[1]				Phase 2 Present Value (in Base Year) of Estimated SC-CO_2 by emissions year (2020$)[1]				Phase 3 Present Value (in Base Year) of Estimated SC-CO_2 by emissions year (2020$)[1]				Per ton SC-CO_2 Value (2020$/metric ton CO_2)[2, 3]			
Year of Emissions	Phase 1	Phase 2	Phase 3	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile
2020				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	51	76	152
2021				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15	52	78	155
2022				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15	53	79	159
2023	769			$12,259	$41,747	$61,781	$124,685	$0	$0	$0	$0	$0	$0	$0	$0	16	54	80	162
2024	474	56,335		$7,417	$25,474	$37,756	$76,231	$881,557	$3,027,577	$4,487,261	$9,060,034	$0	$0	$0	$0	16	55	82	166
2025	473	56,335		$7,259	$25,156	$37,345	$75,420	$864,513	$2,996,107	$4,447,843	$8,982,533	$0	$0	$0	$0	17	56	83	169
2026	367	56,335		$5,519	$19,309	$28,714	$57,992	$847,143	$2,963,902	$4,407,679	$8,901,861	$0	$0	$0	$0	17	57	84	173
2027	2	56,335		$27	$95	$141	$285	$829,466	$2,931,081	$4,366,828	$8,818,318	$0	$0	$0	$0	18	59	86	176
2028		56,335		$0	$0	$0	$0	$811,552	$2,897,609	$4,325,348	$8,732,042	$0	$0	$0	$0	18	60	87	180
2029		56,335		$0	$0	$0	$0	$793,421	$2,863,600	$4,283,294	$8,643,310	$0	$0	$0	$0	19	61	88	183
2030		56,335		$0	$0	$0	$0	$775,217	$2,829,114	$4,240,718	$8,552,385	$0	$0	$0	$0	19	62	89	187
2031		56,335		$0	$0	$0	$0	$760,569	$2,797,587	$4,200,306	$8,473,300	$0	$0	$0	$0	20	63	91	191
2032		56,335		$0	$0	$0	$0	$745,523	$2,765,497	$4,159,343	$8,391,609	$0	$0	$0	$0	21	64	92	194
2033		56,335		$0	$0	$0	$0	$730,219	$2,732,903	$4,117,879	$8,307,488	$0	$0	$0	$0	21	65	94	198
2034		56,335		$0	$0	$0	$0	$714,649	$2,699,862	$4,076,006	$8,221,109	$0	$0	$0	$0	22	66	95	202
2035		56,335		$0	$0	$0	$0	$698,938	$2,666,427	$4,033,685	$8,132,753	$0	$0	$0	$0	22	67	96	206
2036		56,335		$0	$0	$0	$0	$683,073	$2,632,649	$3,991,003	$8,042,570	$0	$0	$0	$0	23	69	98	210
2037		56,335		$0	$0	$0	$0	$667,162	$2,598,577	$3,948,004	$7,950,703	$0	$0	$0	$0	23	70	99	213
2038		56,335		$0	$0	$0	$0	$651,190	$2,564,256	$3,904,767	$7,857,402	$0	$0	$0	$0	24	71	100	217
2039		56,335		$0	$0	$0	$0	$635,253	$2,529,730	$3,861,252	$7,762,755	$0	$0	$0	$0	25	72	102	221
2040		56,335		$0	$0	$0	$0	$619,357	$2,495,040	$3,817,537	$7,666,990	$0	$0	$0	$0	25	73	103	225
2041		56,335		$0	$0	$0	$0	$604,985	$2,460,291	$3,772,683	$7,559,497	$0	$0	$0	$0	26	74	104	228
2042		56,335		$0	$0	$0	$0	$590,578	$2,425,450	$3,727,745	$7,451,730	$0	$0	$0	$0	26	75	106	232
2043		56,335		$0	$0	$0	$0	$576,171	$2,390,551	$3,682,721	$7,343,858	$0	$0	$0	$0	27	77	107	235
2044		56,335		$0	$0	$0	$0	$561,797	$2,355,627	$3,637,709	$7,235,948	$0	$0	$0	$0	28	78	108	239
2045		56,335		$0	$0	$0	$0	$547,485	$2,320,680	$3,592,702	$7,128,095	$0	$0	$0	$0	28	79	110	242
2046		56,335		$0	$0	$0	$0	$533,281	$2,285,799	$3,547,727	$7,020,357	$0	$0	$0	$0	29	80	111	246
2047		56,335		$0	$0	$0	$0	$519,171	$2,250,981	$3,502,808	$6,912,876	$0	$0	$0	$0	30	81	112	249
2048		56,335		$0	$0	$0	$0	$505,195	$2,216,253	$3,457,940	$6,805,700	$0	$0	$0	$0	30	82	114	253
2049			2,085	$0	$0	$0	$0	$0	$0	$0	$0	$18,185	$80,737	$126,315	$247,911	31	84	115	256
2050				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	32	85	116	260
2051				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	32	85	118	260
2052				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	33	86	119	261
2053				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	34	87	120	262
2054				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	34	88	121	263
2055				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	35	89	122	265
2056				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	35	90	123	267
2057				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	36	91	124	269
2058				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	37	92	125	271

SOCIAL COST OF CARBON DIOXIDE (CO2) ESTIMATING TOOL

Base Year: 2023 (Enter the base year on the instructions tab, step 2.)

	Enter CO2 emissions (metric tons) (Use negative numbers for emission reductions)			Phase 1 Present Value (in Base Year) of Estimated SC-CO2 by emissions year (2020$)[1]				Phase 2 Present Value (in Base Year) of Estimated SC-CO2 by emissions year (2020$)[1]				Phase 3 Present Value (in Base Year) of Estimated SC-CO2 by emissions year (2020$)[1]				Per ton SC-CO2 Value (2020$/metric ton CO2)[2, 3]			
2059				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	37	92	127	273
2060				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	38	93	128	275
2061				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	39	95	129	280
2062				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	40	96	131	285
2063				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	41	98	132	290
2064				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	42	99	134	295
2065				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	44	100	135	300
2066				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	45	102	137	305
2067				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	46	103	138	311
2068				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	47	105	140	316
2069				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	48	106	141	321
2070				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	49	108	143	326
TOTALS:	2,085	1,408,366	2,085	$32,481	$111,780	$165,737	$334,613	$17,147,466	$65,697,152	$99,590,789	$199,955,219	$18,185	$80,737	$126,315	$247,911				

Present Value (in Base Year) of Estimated SC-CO2 for all CO2 emissions (2020$)

	5% Average	3% Average	2.5% Average	3% 95th Percentile
Phase 1	$32,481	$111,780	$165,737	$334,613
Phase 2	$17,147,466	$65,697,152	$99,590,789	$199,955,219
Phase 3	$18,185	$80,737	$126,315	$247,911
Total	$17,198,132	$65,889,668	$99,882,842	$200,537,743

[1] The social cost estimates from the IWG represent the present value of damages from that year's emissions discounted back to the year of emissions. These columns discount that value to the base year in order to calculate the total net present value.

[2] Values from 2020–2050 are from Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide, Interim Estimates under E.O. 13990. Interagency Working Group on Social Cost of Carbon, United States Government. February 2021.

[3] Values from 2051–2070 are from Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: Consumer Furnaces, Appendix 14A. U.S. Department of Energy. June 2022.

Worst-Case Scenario: Methane Emissions

SOCIAL COST OF METHANE (CH4) ESTIMATING TOOL

Base Year: 2023 (Enter the base year on the instructions tab, step 2.)

	Enter CH4 emissions (metric tons) (Use negative numbers for emission reductions)			Phase 1 Present Value (in Base Year) of Estimated SC-CH4 by emissions year (2020$)[1]				Phase 2 Present Value (in Base Year) of Estimated SC-CH4 by emissions year (2020$)[1]				Phase 3 Present Value (in Base Year) of Estimated SC-CH4 by emissions year (2020$)[1]				Per ton SC-CH4 Value (2020$/metric ton CH4)[2, 3]			
Year of Emissions	Phase 1	Phase 2	Phase 3	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile
2020				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	666	1,485	1,953	3,906
2021				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	693	1,532	2,009	4,035
2022				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	720	1,579	2,064	4,163
2023	0			$15	$33	$42	$86	$0	$0	$0	$0	$0	$0	$0	$0	747	1,626	2,120	4,292
2024	0	14		$15	$32	$42	$86	$10,110	$22,258	$29,081	$58,812	$0	$0	$0	$0	775	1,673	2,175	4,420
2025	0	14		$15	$32	$42	$86	$9,968	$22,216	$29,095	$58,758	$0	$0	$0	$0	802	1,720	2,230	4,548
2026	0	14		$7	$16	$21	$43	$9,815	$22,158	$29,091	$58,657	$0	$0	$0	$0	829	1,767	2,286	4,677
2027	0	14		$4	$8	$11	$21	$9,655	$22,084	$29,070	$58,512	$0	$0	$0	$0	856	1,814	2,341	4,805
2028		14		$0	$0	$0	$0	$9,487	$21,996	$29,032	$58,326	$0	$0	$0	$0	884	1,861	2,397	4,934
2029		14		$0	$0	$0	$0	$9,314	$21,894	$28,979	$58,101	$0	$0	$0	$0	911	1,908	2,452	5,062
2030		14		$0	$0	$0	$0	$9,136	$21,779	$28,912	$57,840	$0	$0	$0	$0	938	1,954	2,508	5,190
2031		14		$0	$0	$0	$0	$9,020	$21,744	$28,925	$57,819	$0	$0	$0	$0	972	2,010	2,572	5,344
2032		14		$0	$0	$0	$0	$8,894	$21,692	$28,921	$57,750	$0	$0	$0	$0	1,007	2,065	2,635	5,498
2033		14		$0	$0	$0	$0	$8,760	$21,625	$28,900	$57,636	$0	$0	$0	$0	1,041	2,121	2,699	5,652
2034		14		$0	$0	$0	$0	$8,618	$21,544	$28,862	$57,480	$0	$0	$0	$0	1,075	2,176	2,763	5,806
2035		14		$0	$0	$0	$0	$8,470	$21,448	$28,809	$57,284	$0	$0	$0	$0	1,110	2,231	2,827	5,959
2036		14		$0	$0	$0	$0	$8,316	$21,341	$28,742	$57,050	$0	$0	$0	$0	1,144	2,287	2,891	6,113
2037		14		$0	$0	$0	$0	$8,158	$21,221	$28,661	$56,782	$0	$0	$0	$0	1,179	2,342	2,955	6,267
2038		14		$0	$0	$0	$0	$7,996	$21,090	$28,566	$56,481	$0	$0	$0	$0	1,213	2,397	3,019	6,421
2039		14		$0	$0	$0	$0	$7,831	$20,948	$28,459	$56,149	$0	$0	$0	$0	1,247	2,453	3,083	6,574
2040		14		$0	$0	$0	$0	$7,664	$20,797	$28,341	$55,789	$0	$0	$0	$0	1,282	2,508	3,147	6,728
2041		14		$0	$0	$0	$0	$7,513	$20,642	$28,203	$55,329	$0	$0	$0	$0	1,319	2,564	3,210	6,873
2042		14		$0	$0	$0	$0	$7,358	$20,477	$28,055	$54,848	$0	$0	$0	$0	1,357	2,620	3,273	7,018
2043		14		$0	$0	$0	$0	$7,202	$20,305	$27,898	$54,349	$0	$0	$0	$0	1,394	2,676	3,336	7,162
2044		14		$0	$0	$0	$0	$7,043	$20,126	$27,731	$53,832	$0	$0	$0	$0	1,432	2,732	3,399	7,307
2045		14		$0	$0	$0	$0	$6,884	$19,940	$27,556	$53,299	$0	$0	$0	$0	1,469	2,788	3,462	7,452
2046		14		$0	$0	$0	$0	$6,723	$19,747	$27,373	$52,751	$0	$0	$0	$0	1,507	2,844	3,524	7,596
2047		14		$0	$0	$0	$0	$6,562	$19,549	$27,183	$52,191	$0	$0	$0	$0	1,544	2,900	3,587	7,741
2048		14		$0	$0	$0	$0	$6,402	$19,345	$26,986	$51,618	$0	$0	$0	$0	1,582	2,955	3,650	7,886
2049			0	$0	$0	$0	$0	$0	$0	$0	$0	$34	$105	$147	$279	1,619	3,011	3,713	8,031
2050				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,657	3,067	3,776	8,175
2051				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,680	3,096	3,807	8,193
2052				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,703	3,128	3,841	8,228
2053				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,726	3,159	3,874	8,263
2054				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,749	3,190	3,908	8,297
2055				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,772	3,221	3,942	8,332
2056				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,797	3,256	3,979	8,373
2057				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,823	3,291	4,017	8,415
2058				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,848	3,326	4,055	8,456

SOCIAL COST OF METHANE (CH4) ESTIMATING TOOL

Base Year:	2023

(Enter the base year on the instructions tab, step 2.)

	Enter CH4 emissions (metric tons) (Use negative numbers for emission reductions)			Phase 1 Present Value (in Base Year) of Estimated SC-CH4 by emissions year (2020$)[1]				Phase 2 Present Value (in Base Year) of Estimated SC-CH4 by emissions year (2020$)[1]				Phase 3 Present Value (in Base Year) of Estimated SC-CH4 by emissions year (2020$)[1]				Per ton SC-CH4 Value (2020$/metric ton CH4)[2, 3]			
				5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile
2059				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,873	3,360	4,092	8,497
2060				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1,899	3,395	4,130	8,539
2061				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,021	3,548	4,296	9,067
2062				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,143	3,702	4,462	9,594
2063				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,264	3,856	4,628	10,122
2064				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,386	4,009	4,794	10,650
2065				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,508	4,163	4,960	11,177
2066				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,632	4,325	5,141	11,758
2067				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,757	4,488	5,323	12,338
2068				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	2,881	4,651	5,504	12,919
2069				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	3,006	4,814	5,686	13,499
2070				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	3,130	4,976	5,867	14,079
TOTALS:	0	343	0	$55	$122	$159	$322	$206,900	$527,968	$711,432	$1,407,440	$34	$105	$147	$279				

Present Value (in Base Year) of Estimated SC-CH4 for all CH4 emissions (2020$)

	5% Average	3% Average	2.5% Average	3% 95th Percentile
Phase 1	$55	$122	$159	$322
Phase 2	$206,900	$527,968	$711,432	$1,407,440
Phase 3	$34	$105	$147	$279
Total	$206,989	$528,194	$711,737	$1,408,041

[1] The social cost estimates from the IWG represent the present value of damages from that year's emissions discounted back to the year of emissions. These columns discount that value to the base year in order to calculate the total net present value.

[2] Values from 2020–2050 are from Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide, Interim Estimates under E.O. 13990. Interagency Working Group on Social Cost of Carbon, United States Government. February 2021.

[3] Values from 2051–2070 are from Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: Consumer Furnaces, Appendix 14A. U.S. Department of Energy. June 2022.

Worst-Case Scenario: Nitrous Oxide Emissions

SOCIAL COST OF NITROUS OXIDE (N2O) ESTIMATING TOOL

Base Year:	2023	(Enter the base year on the instructions tab, step 2.)

	Enter N2O emissions (metric tons) (Use negative numbers for emission reductions)			Phase 1 Present Value (in Base Year) of Estimated SC-N2O by emissions year (2020$)[1]				Phase 2 Present Value (in Base Year) of Estimated SC-N2O by emissions year (2020$)[1]				Phase 3 Present Value (in Base Year) of Estimated SC-N2O by emissions year (2020$)[1]				Per ton SC-N2O Value (2020$/metric ton N2O)[2]			
Year of Emissions	**Phase 1**	**Phase 2**	**Phase 3**	**5% Average**	**3% Average**	**2.5% Average**	**3% 95th Percentile**	**5% Average**	**3% Average**	**2.5% Average**	**3% 95th Percentile**	**5% Average**	**3% Average**	**2.5% Average**	**3% 95th Percentile**	**5% Average**	**3% Average**	**2.5% Average**	**3% 95th Percentile**
2020				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5,779	18,405	27,131	48,256
2021				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5,981	18,842	27,688	49,464
2022				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6,183	19,279	28,244	50,671
2023	0			$319	$986	$1,440	$2,594	$0	$0	$0	$0	$0	$0	$0	$0	6,385	19,717	28,801	51,879
2024	0	13		$31	$98	$143	$258	$81,627	$254,582	$372,658	$670,597	$0	$0	$0	$0	6,587	20,154	29,358	53,087
2025	0	13		$31	$97	$142	$256	$80,123	$252,527	$370,463	$665,876	$0	$0	$0	$0	6,789	20,591	29,914	54,295
2026	0	13		$30	$96	$141	$254	$78,578	$250,376	$368,154	$660,862	$0	$0	$0	$0	6,991	21,028	30,471	55,502
2027	0	13		$30	$95	$141	$252	$76,998	$248,137	$365,737	$655,575	$0	$0	$0	$0	7,193	21,465	31,028	56,710
2028		13		$0	$0	$0	$0	$75,390	$245,815	$363,219	$650,035	$0	$0	$0	$0	7,395	21,902	31,585	57,918
2029		13		$0	$0	$0	$0	$73,761	$243,418	$360,606	$644,262	$0	$0	$0	$0	7,597	22,339	32,141	59,125
2030		13		$0	$0	$0	$0	$72,116	$240,952	$357,904	$638,274	$0	$0	$0	$0	7,799	22,776	32,698	60,333
2031		13		$0	$0	$0	$0	$70,864	$238,986	$355,704	$633,643	$0	$0	$0	$0	8,047	23,268	33,309	61,692
2032		13		$0	$0	$0	$0	$69,567	$236,931	$353,398	$628,740	$0	$0	$0	$0	8,295	23,760	33,921	63,051
2033		13		$0	$0	$0	$0	$68,233	$234,792	$350,992	$623,586	$0	$0	$0	$0	8,542	24,252	34,532	64,410
2034		13		$0	$0	$0	$0	$66,868	$232,577	$348,494	$618,198	$0	$0	$0	$0	8,790	24,744	35,144	65,770
2035		13		$0	$0	$0	$0	$65,479	$230,292	$345,909	$612,595	$0	$0	$0	$0	9,038	25,236	35,755	67,129
2036		13		$0	$0	$0	$0	$64,070	$227,943	$343,243	$606,794	$0	$0	$0	$0	9,285	25,728	36,366	68,488
2037		13		$0	$0	$0	$0	$62,647	$225,535	$340,501	$600,811	$0	$0	$0	$0	9,533	26,219	36,978	69,847
2038		13		$0	$0	$0	$0	$61,214	$223,074	$337,689	$594,662	$0	$0	$0	$0	9,781	26,711	37,589	71,206
2039		13		$0	$0	$0	$0	$59,776	$220,566	$334,811	$588,362	$0	$0	$0	$0	10,029	27,203	38,201	72,565
2040		13		$0	$0	$0	$0	$58,335	$218,014	$331,873	$581,924	$0	$0	$0	$0	10,276	27,695	38,812	73,924
2041		13		$0	$0	$0	$0	$57,126	$215,710	$329,152	$575,859	$0	$0	$0	$0	10,567	28,225	39,456	75,349
2042		13		$0	$0	$0	$0	$55,900	$213,355	$326,367	$569,654	$0	$0	$0	$0	10,857	28,754	40,100	76,773
2043		13		$0	$0	$0	$0	$54,662	$210,954	$323,522	$563,322	$0	$0	$0	$0	11,147	29,283	40,745	78,197
2044		13		$0	$0	$0	$0	$53,414	$208,513	$320,621	$556,876	$0	$0	$0	$0	11,437	29,813	41,389	79,621
2045		13		$0	$0	$0	$0	$52,162	$206,034	$317,670	$550,327	$0	$0	$0	$0	11,727	30,342	42,033	81,045
2046		13		$0	$0	$0	$0	$50,907	$203,523	$314,672	$543,687	$0	$0	$0	$0	12,018	30,872	42,677	82,470
2047		13		$0	$0	$0	$0	$49,654	$200,984	$311,631	$536,967	$0	$0	$0	$0	12,308	31,401	43,321	83,894
2048		13		$0	$0	$0	$0	$48,404	$198,419	$308,551	$530,178	$0	$0	$0	$0	12,598	31,930	43,965	85,318
2049			0	$0	$0	$0	$0	$0	$0	$0	$0	$254	$1,054	$1,643	$2,816	12,888	32,460	44,610	86,742
2050				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	13,179	32,989	45,254	88,166
2051				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	13,479	33,426	45,727	88,606
2052				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	13,798	33,954	46,354	89,984
2053				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	14,118	34,483	46,981	91,362
2054				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	14,438	35,011	47,609	92,739
2055				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	14,758	35,539	48,236	94,117
2056				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	15,091	36,092	48,890	95,463
2057				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	15,425	36,644	49,544	96,808
2058				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	15,758	37,196	50,199	98,154

SOCIAL COST OF NITROUS OXIDE (N2O) ESTIMATING TOOL

Base Year:	2023

(Enter the base year on the instructions tab, step 2.)

	Enter N2O emissions (metric tons) (Use negative numbers for emission reductions)			Phase 1 Present Value (in Base Year) of Estimated SC-N2O by emissions year (2020$)[1]				Phase 2 Present Value (in Base Year) of Estimated SC-N2O by emissions year (2020$)[1]				Phase 3 Present Value (in Base Year) of Estimated SC-N2O by emissions year (2020$)[1]				Per ton SC-N2O Value (2020$/metric ton N2O)[2]			
				5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile
2059				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	16,091	37,748	50,853	99,499
2060				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	16,424	38,300	51,507	100,845
2061				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	17,077	39,165	52,485	103,794
2062				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	17,730	40,030	53,463	106,743
2063				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	18,382	40,895	54,441	109,692
2064				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	19,035	41,760	55,419	112,641
2065				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	19,687	42,625	56,397	115,590
2066				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	20,354	43,515	57,403	118,657
2067				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	21,020	44,404	58,409	121,725
2068				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	21,686	45,293	59,416	124,793
2069				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	22,352	46,183	60,422	127,860
2070				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	23,018	47,072	61,428	130,928
TOTALS:	0	325	0	$441	$1,372	$2,008	$3,613	$1,607,875	$5,682,011	$8,553,541	$15,101,665	$254	$1,054	$1,643	$2,816				

Present Value (in Base Year) of Estimated SC-N2O for all N2O emissions (2020$)

	5% Average	3% Average	2.5% Average	3% 95th Percentile
Phase 1	$441	$1,372	$2,008	$3,613
Phase 2	$1,607,875	$5,682,011	$8,553,541	$15,101,665
Phase 3	$254	$1,054	$1,643	$2,816
Total	$1,608,570	$5,684,436	$8,557,191	$15,108,094

[1] The social cost estimates from the IWG represent the present value of damages from that year's emissions discounted back to the year of emissions. These columns discount that value to the base year in order to calculate the total net present value.

[2] Values from 2020–2050 are from Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide, Interim Estimates under E.O. 13990. Interagency Working Group on Social Cost of Carbon, United States Government. February 2021.

[3] Values from 2051–2070 are from Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: Consumer Furnaces, Appendix 14A. U.S. Department of Energy. June 2022.

APPENDIX G

Inadvertent Discovery Plan

Inadvertent Discovery Plan

Group14 Technologies
Moses Lake, Grant County, Washington

May 14, 2024

Prepared by
Tamara Uldall, BA
Jennifer Ferris, MA, RPA
HDR, Inc.

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Appendix

Acronyms

BAM Factory or Project	Battery Active Materials Factory
City	City of Moses Lake
DAHP	Department of Archaeology and Historic Preservation
DNS	Determination of non-significance
Ecology	Washington Department of Ecology
EIS	Environmental impact statement
GCC	Grant County Code
Group14	Group14 Technologies, Inc.
IDP	Inadvertent Discovery Plan
NRHP	National Register of Historic Places
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SOI	Secretary of the Interior
WAC	Washington Administrative Code
WISAARD	Washington Information System for Architectural and Archaeological Records Data

1.0 Introduction

Group14 Technologies, Inc. (Group14) is proposing a commercial-scale facility, referred to as Battery Active Materials Factory (BAM Factory or Project), within the City of Moses Lake, Washington. This inadvertent discovery plan (IDP) outlines procedures to perform in the event of an unanticipated discovery of cultural resources. It was prepared for implementation during Project construction.

The Project construction activities and applicable regulations pertaining to cultural resources are discussed below. Definitions of cultural resources are also provided below. Section 2 of this IDP describes the steps to take in the event of an inadvertent discovery of archaeological materials and/or human remains. Section 3 contains the contact list and Section 4 provides the references cited. Photographs of various archaeological resources are provided in Appendix A (adapted from Ecology 2021).

1.1 Project Description

Group14 is proposing a commercial-scale facility, referred to as BAM Factory or Project. The BAM Factory would produce a lithium-ion battery anode material with the goal of meeting the demands of the growing electric vehicle market. Group14's product is a silicon-carbon composite material that improves the energy density and reduces the cost of lithium-ion batteries. The product is produced using a three-step process, consisting of the following:

- A carbon scaffold is synthesized from dry chemical raw materials.
- The carbon is milled to a target particle size distribution.
- The milled carbon is compounded in a reactor using silane gas to form a silicon-carbon composite.

The Project Area is a total of 178 acres consisting of a 46-acre Project Footprint where construction will occur and 132 acres that will remain undeveloped initially. There are no current Project plans for these additional acres at this time.

The Project will include a surface area excavation of approximately 46 acres (i.e., Project Area), which will be minimal and consist of clearing and grubbing (i.e., vegetation removal) and grading to prepare for construction activities. The cleared and graded Project Area will be overlaid with pavement or gravel in the case of the construction access road.

The overall Project would include the following elements: construction of internal roads, egress and ingress from an adjacent road, process module buildings, air emission control systems, administrative building, warehouse, operations building, maintenance building, central utility building, solid waste storage building, parking, stormwater facility, wastewater conveyance, various utilities, and associated facilities to support operations. Underground utilities will also be updated or newly constructed throughout the Project Area, which will involve horizontal directional drilling and open-cut trenching. The trench widths will range from 4 to 10 feet wide and extend to approximately 4 to 8 feet below the ground surface.

The Project Area is located in Sections 19 and 20 of Township 19 North, Range 29 East of the Willamette Meridian south of East Wheeler Road within the City of Moses Lake (**Error! Reference**

source not found.). The Project Area consists of primarily undeveloped land within Grant County parcels 091121631, 091121635, and 110069492 (**Error! Reference source not found.**). The Project Area is zoned Hi-Heavy Industrial by the City and is undeveloped except for its use as agricultural land. No paved roads nor buildings or structures currently exist within the Project Area. The property to the east of the Project Area is also zoned as Hi-Heavy Industrial and contains the Two Rivers Terminal Moses Lake's fertilizer plant.

1.2 Regulatory Context

1.2.1 Grant County Code Chapter 24.08

The Project must take into account Article VIII of GCC 24.08 "Critical Areas and Cultural Resources" which addresses regulations and procedures regarding the identification and protection of cultural resources within the vicinity of project-related work.

GCC § 24.08.700 defines cultural resources as "those areas that have been identified as having lands, sites, and structures that have historical or archaeological significance."

GCC § 24.08.710 requires archaeological sites to be subjected to applicable RCW and Washington Administrative Code (WAC) cultural resources regulations, and outlines required map resources to be used by administrative officials to assist with a Preliminary Determination pursuant to GCC § 24.08.070 (General Review Procedures) in addition to a Critical Areas Checklist and site reconnaissance conducted.

GCC § 24.08.720 outlines site assessment requirements for permit applications within 300 feet of a known cultural resource. This includes the inspection and evaluation of the site by a Qualified Archaeologist and the recovery of archaeological data or artifacts prior to beginning or resuming work. The code states that a Qualified Archaeologist will provide recommendations to preserve and protect the cultural resource that will be listed in conditions attached to the approved application. It requires adjacent sites listed or eligible for the Washington Historic Register (WHR) or National Register of Historic Places (NRHP) be identified so effort can be made to avoid and protect those sites. It further stipulates permit holders must stop activity if a cultural resource is uncovered during excavation within the immediate vicinity of that resource and the affected Native American tribes, county, DAHP, and other consulting parties be notified to initiate consultation and determine further actions. It emphasizes that cultural resources are to be considered during site planning and accessibility, and outlines the components of a site assessment report.

GCC § 24.08.730 outlines additional protection standards for cultural resources and human remains should they be encountered during work activities, and emphasizes stop-work protocols and consultation with affected Native American tribes, DAHP, and other appropriate groups or agencies.

1.2.2 State Regulations

The Project is required to comply with State Environmental Policy Act (SEPA) and the Revised Code of Washington (RCW). The SEPA review process seeks to provide information that will inform agency decision-makers, applicants, and the public to understand how a proposal will affect the environment. Under SEPA, resources on the subject or adjacent property are evaluated for their eligibility at the local, state and/or national register level. The lead agency will review the applicant prepared SEPA checklist and other information about the proposal and will either make a

determination of non-significance (DNS) or that an environmental impact statement (EIS) is necessary to further evaluate the impacts. The DNS or EIS, which are prepared by the lead agency, will provide information to all agencies that must approve the proposal.

Precontact and historic archaeological sites are protected by several Washington state regulations on both public and private lands. RCW 27.44 (Indian Graves and Records) and RCW 27.53 (Archaeological Sites and Resources) require that a person obtain a permit from the DAHP before excavating, removing, or altering Native American human remains or archaeological resources in Washington. Chapter 25-48 of the Washington Administrative Code (WAC) outlines the requirements of the Archaeological Excavation and Removal Permit. Failure to obtain a permit is punishable by civil fines and penalties under RCW 27.53.095 and criminal prosecution under RCW 27.53.090.

If a person(s) violates this statute and knowingly disturbs or alters an archaeological site, the DAHP is allowed to issue civil penalties of up to $5,000 in addition to site restoration costs and investigative costs per RCW 27.53.095. Restorative and monetary remedies do not prevent concerned Indian Tribes from undertaking civil action in state or federal court, or law enforcement agencies from undertaking criminal investigation or prosecution. If human remains and/or burials are disturbed, RCW 27.44.050 allows an affected Indian tribe to undertake civil action. Additionally, the excavation of human remains without a permit is a felony.

1.3 Cultural Resources

A cultural resources survey was previously performed within the Project Area (Uldall and Ferris 2022). No archaeological resources were identified during the survey.

Photographs of various archaeological resources are provided in Attachment A (adapted from Department of Ecology). According to DAHP guidelines (2022), archaeological resources are defined as follows:

> **Archaeological Object:** An object that comprises the physical evidence of an indigenous and subsequent culture including material remains of past human life including monuments, symbols, tools, facilities, and technological by-products.
>
> **Site**: A geographic locality including but not limited to submerged and submersible lands and the bed of the sea within the state's jurisdiction that contains archaeological objects.
>
> **Isolate:** One distinct artifact or a few fragments of the same artifact that are too far away (typically more than 98 ft [30 m]) from other cultural materials (over 50 years old) to be considered part of a site. If diagnostic, the find should be recorded on an Isolate Form accompanied by photographs.
>
> **Intact Artifact Deposit or Feature:** Two or more distinct artifacts or one feature (immovable object such as a concrete foundation) within a 164-ft (50-m) area. Such deposits would be considered an archaeological site and depending on their size and nature, take longer than an isolated find to record on an Archaeological Site Inventory Form.
>
> **Disturbed Artifact Deposits:** Artifacts identified in disturbed soils (such as historic fill) should be documented in field notes and photographed. Depending on the volume of artifacts and the level of disturbance, the site may or may not need to be recorded on an Archaeological Site Inventory Form. Further investigation may be necessary to determine the presence of

additional artifacts, determine the potential site boundary, and notify the appropriate parties of the inadvertent discovery.

Other: Abandoned/remnant utilities and materials less than 50 years old are not considered significant. These items should be documented in field notes, but are not recorded on DAHP isolate or site forms. No further action is necessary.

1.3.1 Precontact Cultural Resources

No precontact archaeological materials were identified within the Project area. However, unknown materials may be encountered during ground disturbing activities. Such evidence of precontact/ethnohistoric-period activities may include concentrations of fire-modified rock (FMR); animal bone; lithic debitage (flaked stone); ground- and flaked- stone artifacts; tools made from bone and antler; and features consisting of burned or organically stained sediments, clusters of FMR and/or charcoal, or other evidence of living surfaces or habitations.

Precontact archaeological materials may include, but are not limited to:

- Clusters of FMR, charcoal, or other evidence of fire-related activities;
- Discarded shell, animal bone, bone tools, cordage, fibers, burned earth, charcoal, ash, and exotic rocks and minerals;
- Freshwater shell midden;
- Faunal remains modified or found in association with stone chips or tools;
- Ground or chipped stone objects (i.e., debitage or tools); and
- Isolated artifacts similar in nature to those listed above.

1.3.2 Historic Cultural Resources

No historic archaeological materials were identified within the Project area. However, unknown materials may be encountered during ground disturbing activities. Such evidence of historic-period activities may include materials related to the development of residential neighborhoods, nearby transportation corridors, and commercial buildings. Historic-period archaeological materials may include, but are not limited to:

- Features such as relic utility lines, footings, and foundations;
- Small structural elements such as concrete pads, asphalt fragments, and masonry features;
- Wood pilings and milled lumber;
- Concentrated or isolated debris such as vessel glass, dinnerware ceramic, metal can fragments, and other discarded domestic or commercial items; and
- Isolated artifacts composed of glass, metal, ceramic, or other materials manufactured more than 50 years ago.

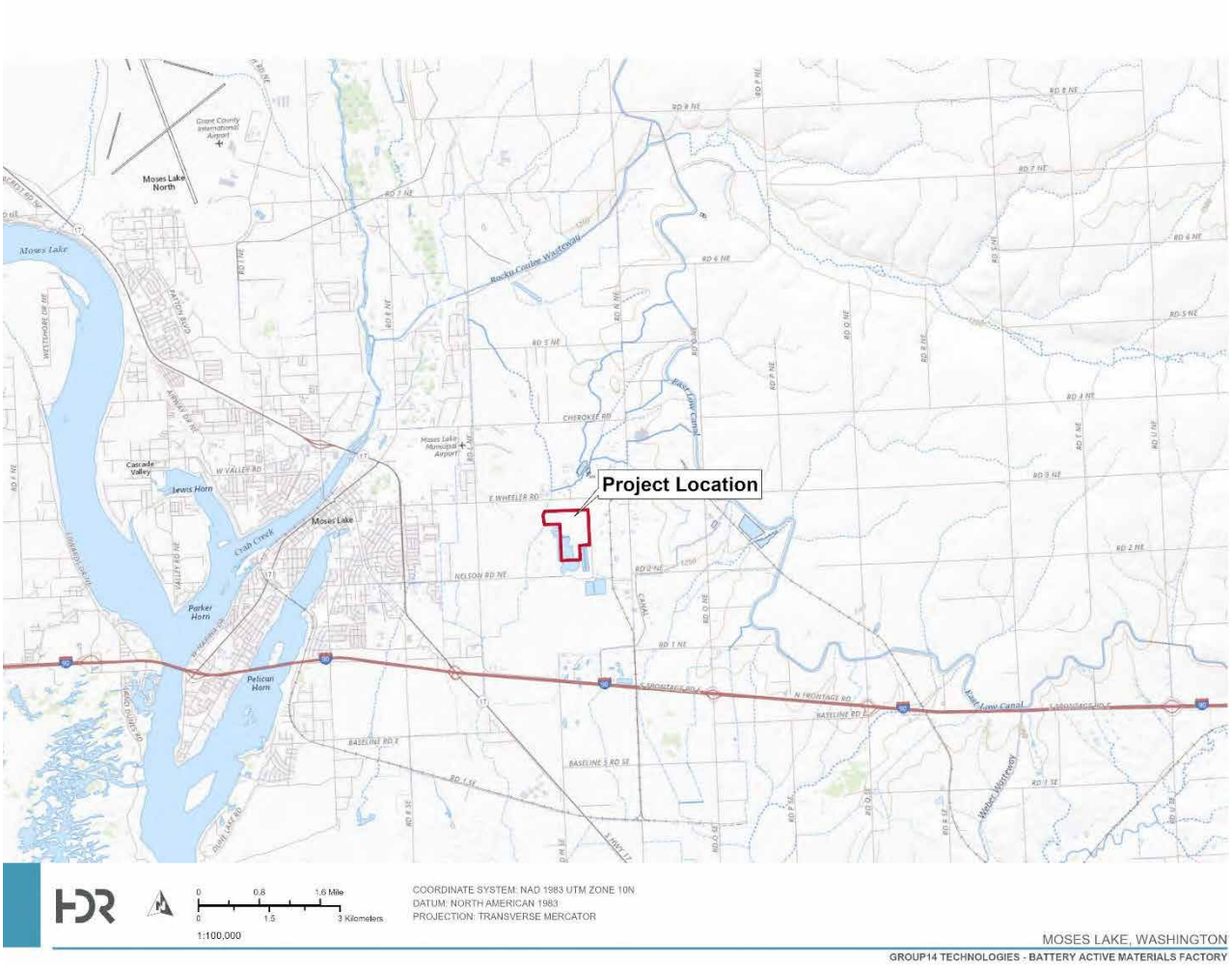


Figure 1. Project location.

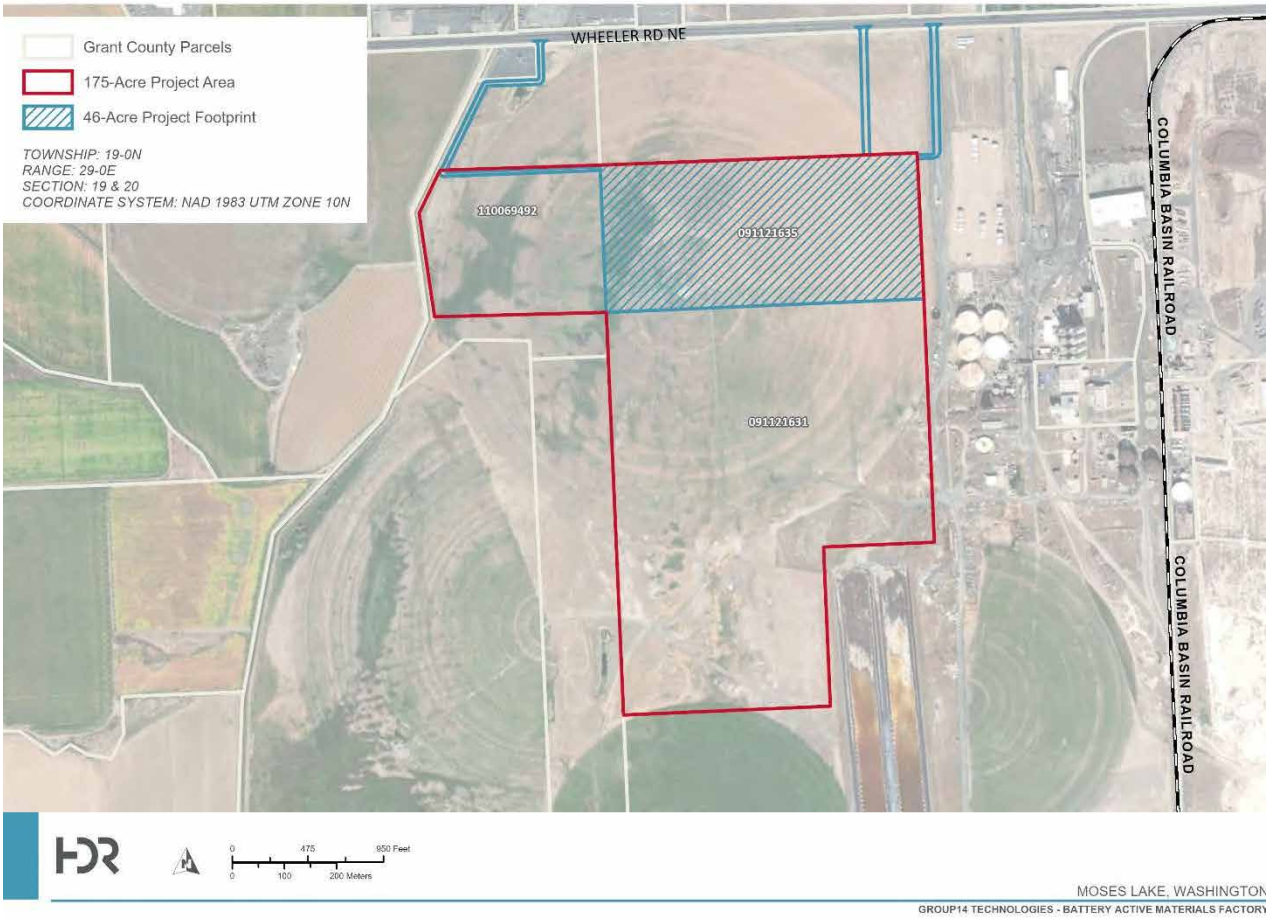


Figure 2. Project area displayed on orthography.

2.0 Guidelines for the Inadvertent Discovery of Archaeological Resources and Human Remains

2.1 Inadvertent Discovery of Archaeological Materials

If, during ground-disturbing Project activities, the construction personnel or any on-site staff believe that they have encountered precontact (including, but not limited to, intact or redeposited clusters of FMR, charcoal, or other evidence of fire-related activities; stone chips or tools; and faunal remains associated with stone chips or tools) or historic-period archaeological materials, ground disturbance will immediately stop—at least temporarily—at that location to protect potential additional resources. The following steps will be taken:

1. The area of the discovery will be marked and stabilized and/or protected until the discovered resource can be evaluated. Protection may include installing a physical barrier (e.g., exclusionary fencing), in addition to prohibiting all machinery, other vehicles, and unauthorized individuals from crossing the barrier.
2. A 50-foot (15.2-meter) perimeter will be implemented around the inadvertent discovery. Vehicles, equipment, and unauthorized personnel will not be permitted to traverse the discovery site. Work in the immediate area will not resume until treatment of the discovery has been completed following provisions for treating cultural material as set forth in this plan. The construction supervisor may direct work away from cultural resources to work in other areas prior to contacting the concerned parties.
3. Upon discovery, Group14, its contractor employees, and any subcontractors will comply with applicable laws and regulations including RCW 27.53 (Archaeological Sites and Resources).
4. The Group14 will obtain the services of a professional archaeologist who meets the Secretary of the Interior's (SOI) professional qualifications standards for archaeology (36 Code of Federal Regulations Part 61).
5. The SOI-qualified archaeologist will conduct an initial evaluation of the resource immediately. If excavation is allowed to continue, the SOI-qualified archaeologist will take notes on the discovery along with overview photographs to formulate a basic description of the characteristics and location of the cultural materials for further investigation during future phases of construction work, to allow for minimal delays.
6. If the SOI-qualified archaeologist concludes that the find is an archaeological resource requiring further evaluation, the discovery will continue to be protected and avoided.
7. Within 12 hours of the initial discovery, if feasible, and once the site has been preliminarily characterized, the SOI-qualified archaeologist will notify DAHP via phone and email regarding the inadvertent discovery. If applicable, a photo of the discovery will be included in the notification.
8. DAHP, Group14, and the SOI-qualified archaeologist will collaborate to notify the City and Indian Tribes, as expeditiously as possible, and will further consult to determine appropriate treatment including, but not limited to, photography, mapping, and sampling. Any additional disturbance to

a precontact or National Register eligible historic archaeological site would require an archaeological excavation permit from the DAHP under RCW 27.53.

9. The SOI-qualified archaeologist will document the inadvertent discovery per DAHP guidelines. Documentation of the inadvertent discovery may include mapping, photography, and/or other activities, as determined appropriate.
10. In the case of an isolated archaeological discovery, construction excavation will likely not halt for more than the time required by the SOI-qualified archaeologist to photograph and record details of the location (e.g., depth below the ground surface, sedimentary context) and other pertinent information about the isolated find.
11. The SOI-qualified archaeologist will coordinate with the DAHP and Group14 upon the findings prior to excavation continuing.
12. Construction excavation may resume in the area when the DAHP, in coordination with the SOI-qualified archaeologist, has notified the Group14 Project Manager and construction manager that this work is complete and that construction may resume.

2.2 Inadvertent Discovery of Human Skeletal Remains, Funerary Objects, and Objects of Cultural Patrimony

Any human skeletal remains, unmarked burial grave or unregistered grave, funerary object, or object of cultural patrimony that is discovered during Project-related excavation will be treated with dignity and respect.

If ground-disturbing Project activities encounter human skeletal remains, unmarked burial grave or unregistered grave, funerary object, or object of cultural patrimony, all Project activity within 100-foot (30.5-meter) of that location must be immediately halted. A STOP WORK will be announced, and the inadvertent discovery must be secured and protected from further disturbance. Efforts will be made to protect the discovery from looting and vandalism, and it will not be removed or otherwise disturbed. On-site personnel will not speak with the media or share any information on social media. The following steps will be taken:

1. The Group14 and its contractor will comply with applicable laws and regulations including RCW Chapter 27.44 (Indian Graves and Records) and RCW Chapter 68.60 (Protection of Historic Graves).
2. Any person who discovers human skeletal remains must notify the Grant County medical examiner and local law enforcement in the most expeditious manner possible (see Contact List in Section 3). DO NOT CALL 911. If on-site personnel are unable to determine whether the remains are human or animal, on-site staff will contact an SOI-qualified archaeologist for confirmation. The SOI-qualified archaeologist will observe the discovery immediately, as feasible, without causing further disturbance.
3. The SOI-qualified archaeologist will ensure that any and all human remains, sacred objects, and objects of cultural patrimony are treated with dignity and respect. Remains will be covered with a tarp or other materials (not soil or rocks) for temporary protection in place and to shield them from being photographed.

4. If the SOI-qualified archaeologist is unable to determine whether the remains are human or animal, the SOI-qualified archaeologist may contact DAHP's physical anthropologist with photographic images:
    a. If the results of the evaluation indicate that the remains are not human and do not have an archaeological association, construction will be permitted to continue.
    b. If the evaluation determines the remains are not human but have an archaeological association, the procedures for Inadvertent Discovery of Archaeological Materials will be followed.
    c. If the results of the evaluation indicate the remains are human, then the on-site Project manager or SOI-qualified archaeologist will notify the medical examiner and local law enforcement.
5. The Grant County Medical Examiner will assume jurisdiction over the remains and determine if they are forensic or nonforensic.
6. The Grant County Medical Examiner will retain jurisdiction over forensic remains. The work stoppage in the area will continue until such time that the medical examiner has secured and removed the remains from the discovery site.
7. If the Grant County Medical Examiner determines the remains are nonforensic, they will report that finding to DAHP who will then take jurisdiction over the remains. DAHP will notify any appropriate cemeteries and all affected Indian Tribes of the find.
8. The DAHP State Physical Anthropologist will make a determination of whether the remains are Indian or non-Indian and report that finding to any appropriate cemeteries and the affected Indian Tribes.
9. The DAHP will then handle all consultation with the affected Indian Tribes, City, Group14, and other appropriate parties, as to the future preservation, excavation, and disposition of the remains.
10. Group14 and its contractor may resume Project-related activities in the area of the discovery upon receipt of written authorization from either the medical examiner or the DAHP, whoever has jurisdiction under state law.

2.3 Confidentiality

Cultural resources and human remains are of a sensitive nature and sites where cultural resources are discovered can become targets of vandalism and illegal removal activities. All parties shall keep and maintain as confidential all information regarding any discovered cultural resources, particularly the location of known or suspected human remains, and exempt all such information from public disclosure consistent with applicable state regulations (e.g., RCW 42.56.300). All information indicating the location of known suspected cultural resources or human remains from this Project shall be turned over to the DAHP. While any party is in possession of this confidential information, such party shall limit access to these records to authorized persons.

3.0 Contact Information

The Project contacts are listed below. The communication procedures listed in Section 2 will be followed. Any changes in personnel or contact information should be immediately shared with Group14 and included in an updated contact list.

Table 1. Contact information

Property Owner		
Group14 Technologies, Inc.	Frank Bruneel Project Manager	(509) 760-5370 fbruneel@group14.com
Agencies	**Contact Name and Title**	**Phone Number and Email**
City of Moses Lake	Nathan Pate Senior Planner, Community Development	(509) 764-3752 npate@cityofml.com
Department of Energy – National Energy Technology Laboratory	Stephen Witmer NEPA Compliance Officer	(412) 386-7589 Stephen.witmer@netl.doe.gov
Department of Archaeology and Historic Preservation (DAHP)	Sydney Hanson State Archaeologist	(360) 280-7563 Sydney.hanson@dahp.wa.gov
	Dr. Guy Tasa State Physical Anthropologist	(360) 790-1633 guy.tasa@dahp.wa.gov
Law Enforcement	**Contact Name and Title**	**Phone Number and Email**
Moses Lake Police Department	Kevin Fuhr Police Chief	(509) 764-3887 policechief@cityofml.com
Grant County Medical Examiner and Coroner	n/a	(509) 765-7601
Indian Tribes	**Contact Name and Title**	**Phone Number and Email**
Confederated Tribes of the Colville Reservation	Guy Moura Tribal Historic Preservation Officer	(509) 634-2695 Guy.Moura@colvilletribes.com
Confederated Tribes of the Warm Springs Reservation of Oregon	Mars Galloway Cultural Resource Manager	(541) 553-3583 mars.galloway@ctwsbnr.org
	Robert Brunoe Tribal Historic Preservation Officer	(541) 553-2026 robert.brunoe@ctwsbnr.org
Spokane Tribe of Indians	Randy Abrahamson Tribal Historic Preservation Officer	(509) 258-4222 Randya@spokanetribe.com
Confederated Tribes and Bands of the Yakama Nation	Casey Barney Cultural Resources Program Manager	(509) 865-5121 Casey_Barney@yakama.com
	Kate Valdez Tribal Historic Preservation Officer	(509) 985-8501 Kate_Valdez@yakama.com
Contractors	**Contact Name and Title**	**Phone Number and Email**
General Contractor	TBD	TBD

4.0 References Cited

Department of Archaeology and Historic Preservation (DAHP)

2022 Washington State Standards for Cultural Resources Reporting. Available online, https://dahp.wa.gov/sites/default/files/CR%20Update%20March%202022_0.pdf.

Department of Ecology (Ecology)

2021 Inadvertent Discovery Plan and Procedures for the Discovery of Cultural Resources and Human Skeletal Remains. Available online, https://apps.ecology.wa.gov/publications/SummaryPages/ECY070560.html.

Uldall, Tamara and Jennifer Ferris

2022 Cultural Resources Investigation Report: Group14 Technologies Inc. I Battery Active Materials Factory: 175-acre Project Area, City of Moses Lake, Grant County, Washington. Prepared by HDR, Inc., Bellevue, Washington. On file, Group14 Technologies, Inc., Woodinville, Washington.

Appendix A: Photographs of Archaeological Resources (adapted from Ecology 2021)

Implement the IDP if you see…

Chipped stone artifacts.

Examples are:

- Glass-like material.
- Angular material.
- “Unusual” material or shape for the area.
- Regularity of flaking.
- Variability of size.

Stone artifacts from Oregon.

Stone artifacts from Washington.

Biface-knife, scraper, or pre-form found in NE Washington. Thought to be a well knapped object of great antiquity. Courtesy of Methow Salmon Rec. Foundation.

Implement the IDP if you see…

Ground stone artifacts.

Examples are:

- Unusual or unnatural shapes or unusual stone.
- Striations or scratching.
- Etching, perforations, or pecking.
- Regularity in modifications.
- Variability of size, function, or complexity.

Above: Fishing Weight - credit CRITFC Treaty Fishing Rights website.

Artifacts from unknown locations (left and right images).

Implement the IDP if you see…

Bone or shell artifacts, tools, or beads.

Examples are:

- Smooth or carved materials.
- Unusual shape.
- Pointed as if used as a tool.
- Wedge shaped like a “shoehorn”.
- Variability of size.
- Beads from shell (dentalium) or tusk.

Upper Left:*Bone Awls from Oregon.*

Upper Center: *Bone Wedge from California.*

Upper Right: *Plateau dentalium choker and bracelet, from Nez Perce National Historical Park, 19th century, made using Antalis pretiosa shells Credit: Nez Perce - Nez Perce National Historical Park, NEPE 8762, Public Domain.*

Above: *Tooth Pendants. Right: Bone Pendants. Both from Oregon and Washington.*

Implement the IDP if you see…

Culturally modified trees, fiber, or wood artifacts.

Examples are:

- Trees with bark stripped or peeled, carvings, axe cuts, de-limbing, wood removal, and other human modifications.
- Fiber or wood artifacts in a wet environment.
- Variability of size, function, and complexity.

Left and Below: *Culturally modified tree and an old carving on an aspen (Courtesy of DAHP).*

Right, Top to Bottom: *Artifacts from Mud Bay, Olympia: Toy war club, two strand cedar rope, wet basketry*.

Implement the IDP if you see…

Strange, different, or interesting looking dirt, rocks, or shells.

Human activities leave traces in the ground that may or may not have artifacts associated with them. Examples are:

- "Unusual" accumulations of rock (especially fire-cracked rock).
- "Unusual" shaped accumulations of rock (such as a shape similar to a fire ring).
- Charcoal or charcoal-stained soils, burnt-looking soils, or soil that has a "layer cake" appearance.
- Accumulations of shell, bones, or artifacts. Shells may be crushed.
- Look for the "unusual" or out of place (for example, rock piles in areas with otherwise few rocks).

Shell Midden pocket in modern fill discovered in sewer trench.

Underground oven. Courtesy of DAHP.

Shell midden with fire cracked rock.

Hearth excavated near Hamilton, WA.

Implement the IDP if you see…

Historic period artifacts (historic archaeology considered older than 50 years).

Examples are:

- Agricultural or logging equipment. May include equipment, fencing, canals, spillways, chutes, derelict sawmills, tools, etc.
- Domestic items including square or wire nails, amethyst colored glass, or painted stoneware.

Left: Top to Bottom: *Willow pattern serving bowl and slip joint pocket knife discovered during Seattle Smith Cove shantytown (45-KI-1200) excavation.*

Right: *Collections of historic artifacts discovered during excavations in eastern Washington cities.*

Implement the IDP if you see…

Historic period artifacts (historic archaeology considered older than 50 years).

Examples are:

- Railway tokens, coins, and buttons.
- Spectacles, toys, clothing, and personal items.
- Items helping to understand a culture or identity.
- Food containers and dishware.

Main Image: *Dishes, bottles, workboot found at the North Shore Japanese bath house (ofuro) site, Courtesy Bob Muckle, Archaeologist, Capilano University, B.C. This is an example of an above ground resource.*

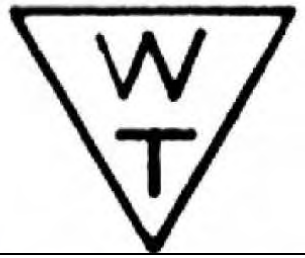
Right, from Top to Bottom: *Coins, token, spectacles and Montgomery Ward pitchfork toy discovered during Seattle Smith Cove shantytown (45-KI-1200) excavation.*

Implement the IDP if you see…

- Old munition casings – if you see ammunition of any type – ***always assume they are live and never touch or move!***
- Tin cans or glass bottles with an older manufacturer's technique – maker's mark, distinct colors such as turquoise, or an older method of opening the container.

Far Left: .303 British cartridge found by a WCC planting crew on Skagit River. Don't ever touch something like this!
Left: Maker's mark on bottom of old bottle.

Right: *Old beer can found in Oregon. ACME was owned by Olympia Brewery. Courtesy of Heather Simmons.*



Logo employed by Whithall Tatum & Co. between 1924 to 1938 (Lockhart et al. 2016).

Can opening dates, courtesy of W.M. Schroeder.

Implement the IDP if you see…

You see historic foundations or buried structures.

Examples are:

- Foundations.
- Railroad and trolley tracks.
- Remnants of structures.

Counter Clockwise, Left to Right: *Historic structure 45KI924, in WSDOT right of way for SR99 tunnel. Remnants of Smith Cove shantytown (45-KI-1200) discovered during Ecology CSO excavation, City of Spokane historic trolley tracks uncovered during stormwater project, intact foundation of historic home that survived the Great Ellensburg Fire of July 4, 1889, uncovered beneath parking lot in Ellensburg.*

Implement the IDP if you see...

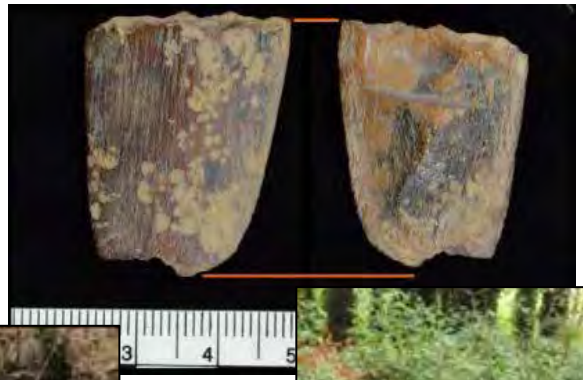
Potential human remains.

Examples are:

- Grave headstones that appear to be older than 50 years.
- Bones or bone tools--intact or in small pieces. It can be difficult to differentiate animal from human so they must be identified by an expert.
- These are all examples of animal bones and are not human.

Center: *Bone wedge tool, courtesy of Smith Cove Shantytown excavation (45KI1200).*

Other images (Top Right, Bottom Left, and Bottom) Center: Courtesy of DAHP.



Directly Above: This is a real discovery at an Ecology sewer project site.

What would you do if you found these items at a site? Who would be the first person you would call?

Hint: *Read the plan!*