

Exhibit G

Materials Analysis

Umatilla-Morrow County Connect Project



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Application for Site Certificate

May 2025

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ACRONYMS AND ABBREVIATIONS

AST	Aboveground Storage Tank
CFR	Code of Federal Regulations
EFSC or Council	Energy Facility Siting Council
UEC	Umatilla Electric Cooperative
kV	kilovolt
OAR	Oregon Administrative Rule
ODEQ	Oregon Department of Environmental Quality
PCB	polychlorinated biphenyl
UMCC	Umatilla-Morrow County Connect Project
Project or UMCC	Umatilla-Morrow County Connect Project
Project Order	First Amended Project Order, <i>In the Matter of the Application for Site Certificate for the Umatilla-Morrow County Connect Project</i> (April 04, 2024)
SPCC	Spill Prevention, Control, and Countermeasures
SDS	safety data sheet

1.0 INTRODUCTION

Exhibit G describes the hazardous and non-hazardous materials to be used as part of the Umatilla-Morrow County Connect Project (Project) and Umatilla Electric Cooperative (UEC) plan for managing said materials.

2.0 APPLICABLE RULES AND SECOND AMENDED PROJECT ORDER PROVISIONS

2.1 General Standards

General Standard of Review Oregon Administrative Rule (OAR) 345-022-0000; Soil Protection OAR 345-022-0022.

2.2 Site Certificate Application Requirements

OAR 345-021-0010(1)(g) provides Exhibit G must include:

- (A) *An inventory of substantial quantities of industrial materials flowing into and out of the proposed facility during construction and operation.*
- (B) *The applicant's plans to manage hazardous substances during construction and operation, including measures to prevent and contain spills.*
- (C) *The applicant's plans to manage non-hazardous waste materials during construction and operation.*

2.3 Project Order Provisions

The Project Order states that all paragraphs of OAR 345-021-0010(1)(c) apply to the Project. The Project Order also includes the following discussion: bold text highlights details not already included in the OARs listed in section 2.2.

Discussion: Exhibit G must include an inventory of substantial quantities of industrial materials flowing into and out of the proposed facility site during construction and operation of the proposed facility, **including but not limited to, metals, oils, and fuels. Quantities of waste materials must be inventoried, and methods of disposal should be described in Exhibits G and W.** **The applicant must identify any hazardous materials that will be used or stored at the site** and describe plans to manage those materials during construction and operation of the proposed facility, including measures to prevent and contain spills.

The applicant must also describe plans to manage non-hazardous waste materials during construction and operation. Exhibit G must identify any proposed fuel storage areas, vehicle maintenance areas, or other areas that could be used to store hazardous materials.

3.0 ANALYSIS

3.1 Analysis Area

The analysis area for Exhibit G includes all areas within the Project site boundary, which is defined as “the perimeter of the site of a proposed energy facility, its related or supporting facilities, all temporary laydown and staging areas, and all corridors and micro-siting corridors proposed by the applicant” (OAR 345-001-0010(55)). The Project site boundary is described in Exhibit C.

3.2 Industrial Materials Inventory

OAR 345-021-0010(1)(g)(A): An inventory of substantial quantities of industrial materials flowing into and out of the proposed facility during construction and operation.

The materials inventory covered each of the Project features, including transmission towers, insulators, and conductors. For example, the planning of transmission tower locations was used to estimate the quantities of concrete that will be required.

Hazardous materials were determined using the known processes required for transmission line construction. Most of the hazardous materials are associated with fuel and other liquid materials required to operate vehicles and construction equipment. They will be brought on-site during construction or operations in service vehicles. Herbicides are not anticipated to be needed during the construction portion of this Project.

Table G-1 provides a list of industrial materials to be used during Project construction based on engineering estimates for the Project.

TABLE G-1 CONSTRUCTION MATERIALS INVENTORY FOR PROJECT CONSTRUCTION OF PROPOSED AND ALTERNATE ROUTES

MATERIAL	ULTIMATE DISPOSITION	UNITS	QUANTITY			
			PROPOSED ROUTE A	ALTERNATIVE ROUTE B	ALTERNATIVE ROUTE C	ALTERNATIVE ROUTE D
Structures and Wire						
Concrete for Foundations	Remains on-site as structure footings	cubic yards	4,465.3	4,167.7	4,368.5	3,379.7
Pier Foundation – Anchor Bolt Cage (Avg. weight = 2.5 tons each)	Remains on-site as structure footings	number	57	52	54	43
230-kV Steel structures (Avg. weight = 20 tons each)	Used on-site for power transmission	number	101	101	102	92
230-kV Conductor x2 1272 54/19 kcmil ACSS-HS285 "Pheasant" (Avg. weight = 1.634 lbs per ft)	Used on-site for power transmission	miles	190.0	189.4	188.9	177.8
7/16 inch Steel OHGW (Avg. weight = 0.399 lbs/ft)	Used on-site for power transmission	miles	0.50	0.50	0.50	0.50
NM-58/67/726 OPGW – 96 Fiber (Avg. weight = 0.537 lbs per ft)	Used for communications for system operations	miles	32.6	32.5	32.4	30.5
Deadend and Suspension Insulator bells	Used on-site for power transmission	number	4,920	4,656	4,776	4,464
Tangent Braced Post and Jumper Post Insulators	Used on-site for power transmission	number	462	474	480	378
Multi-use Areas						
Aggregate Base for Multi-use Areas	Used for temporary working surface Reclaimed for use on local access roads unless otherwise requested by landowner to remain	cubic yards	0-240	0-240	0-240	0-240
Multi-use area fencing (temporary)	Removed and recycled or disposed of	feet	0-1,200	0-1,200	0-1,200	0-1,200
Access Roads, Stream Crossings, and Restoration						
Pit run gravel	Remains on-site as fill	cubic yards	None Anticipated	None Anticipated	None Anticipated	None Anticipated
Aggregate base	Remains on-site as road surface, structural backfill for direct embedded structures, culvert backfill	cubic yards	0-240	0-240	0-240	0-240
Geotextile stabilization fabric	Used on-site for construction	miles	None Anticipated	None Anticipated	None Anticipated	None Anticipated
Concrete for stream crossing structures	Remains on-site for permanent access	cubic yards	None Anticipated	None Anticipated	None Anticipated	None Anticipated
Culverts (HDPE, Concrete and Corrugated Metal)	Remains on-site for drainage and stormwater control	number	None Anticipated	None Anticipated	None Anticipated	None Anticipated
Channel Spanning Structures (Temporary)	Removed and recycled or disposed of	number	None Anticipated	None Anticipated	None Anticipated	None Anticipated
Silt fence or fiber roll	Used for sediment control	miles	0-30	0-30	0-30	0-30
Spill absorbent material	Used to contain liquid spills if needed	containers	0-10	0-10	0-10	0-10

Native grass seed	Used for erosion control, reseeding, and restoration	acres	0-80	0-80	0-80	0-80
Fencing and Gates						
Barbed wire fence	Replace damaged fence or add per landowner request	feet	None Anticipated	None Anticipated	None Anticipated	None Anticipated
Barrier fence	Replace damaged fence or add per landowner request	feet	None Anticipated	None Anticipated	None Anticipated	None Anticipated
Gates	Remains on-site for access control	number	None Anticipated	None Anticipated	None Anticipated	None Anticipated
Liquid or Hazardous Materials						
Herbicide	Used on transmission rights-of-way for weed control	gallons	None Anticipated	None Anticipated	None Anticipated	None Anticipated

Notes: kV=kilovolt, kcmil=thousand circular mils, lbs per ft=pounds per foot, OHGW=overhead ground wire, OPGW=optical ground wire, HDPE=high-density polyethylene, TBD – to be determined

Concrete will be obtained from commercial sources where available. To date, an assessment of the availability of concrete and aggregates for the Project has not been completed.

UEC and its contractors will be required to follow the specific written procedures in the Spill Prevention, Control, and Countermeasures (SPCC) Plan when oil and oil-filled equipment and other hazardous or regulated liquids are being handled. However, no transformers or other equipment containing oil are proposed as part of this Project.

Estimated volumes of water to be used for all purposes, including concrete batching and dust abatement, are presented in Exhibit O.

Table G-2 provides a list of materials estimated for use on the Project for a typical five-year period. Construction phase and up to the first 5 years of project operation materials are variable and dependent upon the maintenance or repair events that occur. It is possible that no materials would be required during a typical five-year period. However, Table G-2 provides for minimal replacement of materials that are sometimes lost, damaged, or stolen, including insulators, copper wire, or culverts. Operations phase materials will be delivered to the required location at the time needed. There are no plans to regularly store materials or maintain inventories of materials on-site during the operations phase.

TABLE G-2 MATERIALS INVENTORY FOR OPERATIONS (TYPICAL FIVE-YEAR ESTIMATE)

MATERIAL	ON-SITE STORAGE	ULTIMATE DISPOSITION	UNITS	QUANTITY
Transmission Line Components				
Insulator bells	No	Used to replace broken insulators	number	150
Copper Wire for Tower Grounds	No	Used to replace damaged or stolen copper wire grounding	feet	1,000
Road Maintenance				
Aggregate base	No	Used for road repair/stabilization	cubic yards	None anticipated
Culvert	No	Used to repair washed out or failed culverts	each	None anticipated

3.3 Hazardous Substance Management

OAR 345-021-0010(1)(g)(B): The applicant's plans to manage hazardous substances during construction and operation, including measures to prevent and contain spills.

Hazardous materials were determined using the known processes required for transmission line construction. Most of the hazardous materials are associated with fuel and other liquid materials required to operate vehicles and construction equipment. They will be brought on-site during construction or operations in construction or service vehicles. No explosive material will be used during this Project. No on-site fueling is anticipated at this time. Table G-3 provides a summary of hazardous materials that will be used for the Project.

Project activities will involve certain hazardous materials, including motor vehicle fuel, lubricants, and automotive fluids used primarily in construction vehicles during the construction phase. No storage of these hazardous materials on-site is proposed.

The construction contractor will maintain an inventory of all hazardous materials used in vehicles and corresponding safety data sheets (SDS). The construction contractor will maintain copies of the required SDS for each hazardous material and will ensure they are readily accessible during each work shift, to all employees when they are in their work areas. SDSs will also be kept in Project vehicles. The SDS will provide basic emergency response information for small and large releases of each hazardous material. If bulk hazardous materials are used, the Emergency Response Guidebook, produced by the United States Department of Transportation, will also be used to prepare for emergencies.

TABLE G-3 HAZARDOUS MATERIALS STORAGE DURING PROJECT CONSTRUCTION AND OPERATIONS

MATERIAL	PROJECT NEED	UNITS	ESTIMATED QUANTITY	STORAGE METHOD
Construction Phase				
Liquid or hazardous materials				
Gasoline	Used on-site for operation vehicles	gallons	1,200	Stored in operation vehicles
Diesel fuel	On-site vehicle fuel	gallons	1,200	Stored in operation vehicles
Motor oil, Gear Oil, and other Lubricating Oils	Used on-site for construction vehicles	gallons	500	Stored in operation vehicles or mechanic vehicles
Antifreeze	Used for operation vehicles	gallons	30	Stored in operation vehicles
Transmission fluid	Used for operation vehicles	gallons	30	Stored in operation vehicles
Operations Phase (Typical Five-Year Estimate)				
Gasoline	Used on-site for operation vehicles	gallons	1,200	Stored in operation vehicles
Motor oil	Used for operation vehicles	gallons	30	Stored in operation vehicles
Antifreeze	Used for operation vehicles	gallons	30	Stored in operation vehicles
Transmission fluid	Used for operation vehicles	gallons	30	Stored in operation vehicles

Note: Quantities reflect the maximum expected volume on the Project at any one time.

If hazardous waste is stored or generated on-site, UEC and its contractors will comply with ODEQ requirements for storage of hazardous materials and cleanup and disposal of hazardous waste on all lands associated with the Project. ODEQ Hazardous Waste and Materials Statutes are found in Oregon Revised Statutes Chapters 465 and 466.

Pesticides and herbicides are not currently planned to be used during this Project.

The Project is not anticipated to generate any quantities of hazardous waste. Hazardous waste may include small remnants of hazardous substances remaining in containers. Accidental spills or leaks of motor fuel, vehicle fluids, or chemicals may also result in small quantities of hazardous waste. Hazardous waste spills will be cleaned up promptly. Spill kits containing items such as absorbent pads will be located on equipment and in each multi-use area containing hazardous materials to ensure a quick response to spills. If hazardous spills in excess of reportable quantities, as identified in OAR 340-142-0050, contact the ground surface, ODEQ and the Oregon Department of Energy will be notified, and excavation of contaminated soil initiated.

If necessary, Persons responsible for handling or transporting hazardous materials for the Project will be familiar with State Fire Marshal and ODEQ laws, policies, procedures, and mitigation measures related to handling and transportation. In the event that hazardous material is needed, hazardous materials, hazardous waste, and cleanup equipment will be stored in approved containers until they can be properly transported and disposed of at an approved treatment, storage, and disposal facility. Any hazardous waste will be disposed of by a licensed contractor.

UEC does not anticipate that it will need an SPCC Plan for any of its Project facilities or activities during construction and operation. However, to the extent required by ODEQ statutes or regulations, UEC has an operations SPCC Plan if storage of materials triggers that requirement. Explosives (considered a class of hazardous material) will not be used during completion of this Project.

3.4 Non-Hazardous Solid Waste Management

OAR 345-021-0010(1)(g)(C): The applicant's plans to manage non-hazardous waste materials during construction and operation.

UEC will fully comply with applicable non-hazardous waste handling and disposal regulations on all lands associated with the Project during construction and operations. Solid waste will be stored in a manner that does not constitute a fire, health, or safety hazard until it can be hauled off for recycling or disposal, as appropriate. Exhibit V provides details on the types and amounts of waste, and procedures and systems for handling and disposal of non-hazardous waste materials.

4.0 CONCLUSIONS

Exhibit G includes the information required by OAR 345-021-0010(1)(g).

5.0 COMPLIANCE CROSS-REFERENCES

Table G-4 identifies the location within the application for site certificate of the information responsive to the application submittal requirements in OAR 345-021-0010(1)(g) and the relevant Project Order provisions.

TABLE G-4. COMPLIANCE REQUIREMENTS AND RELEVANT CROSS-REFERENCES

REQUIREMENT	LOCATION
OAR 345-021-0010(1)(g)	
(g) Exhibit G. A materials analysis including:	
(A) An inventory of substantial quantities of industrial materials flowing into and out of the proposed facility during construction and operation;	Exhibit G, Section 3.2
(B) The applicant's plans to manage hazardous substances during construction and operation, including measures to prevent and contain spills; and	Exhibit G, Section 3.3
(C) The applicant's plans to manage non-hazardous waste materials during construction and operation;	Exhibit G, Section 3.4
Project Order	
The Department uses the materials analysis to identify any hazardous materials whose management and storage could affect the cost of site restoration because of the possibility of spills. The applicant shall include in the application any proposed fuel storage areas, vehicle maintenance areas, or other areas that will be utilized for activities that could result in a spill of a hazardous substance. Additionally, identify the expected storage locations and quantities of hazardous materials expected to be used during construction and operation of the facility.	Exhibit G, Section 3.3
The ODEQ Hazardous Waste program implements requirements of the EPA and is a federally delegated program. The applicant shall comply with ODEQ regulations concerning the storage and management of hazardous materials and the clean-up and disposal of hazardous waste; however, note that compliance with federally delegated programs is outside EFSC jurisdiction.	Exhibit G, Section 3.3