
To: Dave Bowers, Montana Department of Environmental Quality

From: Colin McCoy, Tetra Tech Inc. (EMI Unit)

Date: November 23, 2020

Subject: Preliminary Cost Estimates for Proposed Changes to the Montana Pole and Treating Plant Selected Remedy

Tetra Tech, Inc. (Tetra Tech) has prepared this memorandum for the Montana Department of Environmental Quality (DEQ) as a summary of the preliminary estimated cost difference for proposed changes to the remedy selected in the 1993 Record of Decision (ROD) for the Montana Pole and Treating Plant (the site). The proposed changes, identified in detail in the 2020 Explanation of Significant Differences (ESD), include construction of a Corrective Action Management Unit (CAMU) to contain soils with concentrations of dioxin and pentachlorophenol (PCP) above ESD-updated action levels. The contaminated soils will come from the Land Treatment Unit (LTU) and other areas on the site south of the highway.

These changes are expected to increase the cost of the remedy by approximately \$1.7M. Overall cost of the remedy since the ROD has exceeded \$34M. The proposed changes identified in the ESD represent less than a 5% increase in the cost of the remedy. Costs of offloading soils currently on the LTU and reclaiming the areas of the site south of the highway would be incurred under the ROD even without construction of the CAMU. The additional costs of changes proposed in the ESD are identified and estimated in Exhibit 1.

The cost estimate in Exhibit 1 is not the Engineer's final construction cost estimate, but a rough order-of-magnitude estimate for ESD cost comparison purposes based on volumes estimated from LTU offload 30% design.

The scope of additional construction based on the ESD includes the following:

1. Excavation, transport to the CAMU, grading, and compaction of 13,300 cubic yards (CY) of LTU berm soils with PCP concentrations exceeding 2,000 micrograms per kilogram ($\mu\text{g}/\text{kg}$).
2. Excavation, transport to the CAMU, grading, and compaction of 10,120 CY of soil with dioxin concentrations exceeding 0.03 $\mu\text{g}/\text{kg}$ from areas identified in the 2017 Data Gap investigation—near the location of the former Oaas residence and along the west and north sides of the LTU retention pond.
3. Excavation, transport to the CAMU, grading, and compaction of 17,000 CY of previously offloaded soils with PCP concentrations exceeding 2,000 $\mu\text{g}/\text{kg}$. These soils were offloaded from the LTU and are outside the CAMU boundary.
4. Construction of a CAMU, including site preparation, installation of the HDPE liner and drainage net, and construction of the cap with finish grading, boundary fence, and revegetation.

Montana Pole Treating Plant ESD Preliminary Cost Estimate

Exhibit 1

Cost Item	Quantity	Unit	Unit Cost	Cost Source	Cost
Capital Costs					
Clearing and Grubbing CAMU Area	17.1	Acre	\$6,242.60	RS Means - 311110100160	\$106,645.28
LTU Berm Excavation, Hauling, Grading, and Compaction					\$154,379.75
Excavation	13,300	BCY	\$1.31	RS Means - 312316435300	\$17,423.00
Off Road Haul Trucks, Short Haul	16,625	LCY	\$2.66	RS Means - 312323205090	\$44,222.50
Grading	16,625	LCY	\$3.31	RS Means - 312213200280	\$55,028.75
Compaction, Including Water	11,970	CCY	\$3.15	RS Means - 312323235100, 312323239000	\$37,705.50
Other Removal Areas Excavation, Hauling, Grading, and Compaction (former Oaas residence, area West of Retention Pond)					\$117,467.90
Excavation	10,120	BCY	\$1.31	RS Means - 312316435300	\$13,257.20
Off Road Haul Trucks, Short Haul	12,650	LCY	\$2.66	RS Means - 312323205090	\$33,649.00
Grading	12,650	LCY	\$3.31	RS Means - 312213200280	\$41,871.50
Compaction, Including Water	9,108	CCY	\$3.15	RS Means - 312323235100, 312323239000	\$28,690.20
Previously Offloaded Areas Excavation, Hauling, Grading, and Compaction					\$197,327.50
Excavation	17,000	BCY	\$1.31	RS Means - 312316435300	\$22,270.00
Off Road Haul Trucks, Short Haul	21,250	LCY	\$2.66	RS Means - 312323205090	\$56,525.00
Grading	21,250	LCY	\$3.31	RS Means - 312213200280	\$70,337.50
Compaction, Including Water	15,300	CCY	\$3.15	RS Means - 312323235100, 312323239000	\$48,195.00
CAMU Capping Costs					\$852,446.19
HDPE Liner	351,122	SF	\$0.75	Vender Quote - Northwest Linings	\$263,341.50
Drainage Net/Bio Barrier	351,122	SF	\$0.65	Vender Quote - Northwest Linings	\$228,229.30
Compaction – Capping, Including Water	35,112	CCY	\$3.35	RS Means - 312323235040, 312323239000	\$117,625.87
Fine Grading	39,014	SY	\$0.34	RS Means - 312216103312	\$13,264.61
Clean Fill Hauling	48,767	LCY	\$2.66	RS Means - 312323205090	\$129,720.07
Cap Clean Fill Excavation, Loading	39,014	BCY	\$2.57	RS Means - 312316435300, 312316421650	\$100,264.84
Site Revegetation					\$99,770.73
Revegetation – Seeding	30.3	Acre	\$3,291.20	RS Means - 329219131000	\$99,770.73
Dust Control	11	Day	\$2,033.00	RS Means - 312323202510	\$22,363.00
CAMU Fencing	2,500	LF	\$48.63	RS Means - 32311353010	\$121,575.00
Total Construction Costs					\$1,671,975.35

Notes:

RS Means costs sourced from RS Means Heavy Construction 2020

Bulking factor = 1.25; Compaction factor = 0.9

BCY = Bank cubic yards

CAMU = Corrective Action Management Unit

CCY = Compacted cubic yards

HDPE = High-density polyethylene

LCY = Loose cubic yards

LF = Linear feet

LTU = Land Treatment Unit

SF = Square feet

SY = Square yards