May 4, 2021

To Whom It May Concern;

I am writing with comments on the DEP Draft Decision of Approval with Conditions of WMDSM license application #S-010735-WD-YB-N.

The draft decision does not include adequate evidence that Waste Management's new landfill proposed for Norridgewock would be in compliance with Maine's licensing criteria.

Surface Water Pollution

The draft licensing decision mentions a DEP review memorandum dated August 6, 2019 which noted exceedances of certain contaminants in Mill Stream. The draft decision includes the assumption that because the concentrations of contaminants did not increase downgradient, the exceedances were probably not the result of the landfill. However, no data is shown to support the assumption that the current landfill, which abuts the stream, had no impact on degredation of Mill Stream water quality.

There appears to be a clear connection between groundwater and surface water at the site in Norridgewock. The landfill would include at least one stream crossing beneath it, with another stream along the edge. The presumed downgradient receptor to groundwater from the new landfill area area is Mill Stream and other unnamed streams that flow around the landfill and meander in many directions through extensive wetlands prior to discharging to the Kennebec River.

Normandeau Associates of Bedford, New Hampshire measured water levels and reviewed stream locations at the proposed landfill site between 2017 and 2019, during periods of significant drought in the region.

Waste Management has not provided adequate data that the proposed landfill would meet licensing criteria that the facility will not pollute any water of the state and will not unreasonably adversely affect surface water quality or cause an unreasonable threat to the quality of a classified body of surface water.

Habitat Destruction

Construction of the landfill would require destruction of over ten acres of freshwater wetlands, all located on a delta of land between the Kennebec and Sandy rivers. The landfill would also destroy large areas of deer wintering yards.

Destruction of wetlands and construction of the proposed landfill would increase risk of pollution to surface water and streams that flow into the Kennebec or Sandy Rivers.

The Kennebec River is designated as critical habitat for the endangered Atlantic Salmon. Much of the Kennebec headwaters are excellent habitat for salmon spawning, especially the Sandy River where much investment has been made by the state to rebuild the Atlantic Salmon population. The Madison wastewater facility discharges the landfill leachate into the Kennebec, directly upstream from the confluence with the Sandy River.

Licensing of the proposed new landfill poses a serious threat critical habitat for endangered Atlantic Salmon in the Kennebec River watershed.

Waste Management has not provided adequate data that the proposed landfill would meet licensing criteria that the facility must not unreasonably adversely affect protected natural resources and rare, threatened and endangered plant and animal species.

Leachate Discharge to River

Millions of gallons per month of toxic leachate would be created by the proposed landfill, with volumes increasing if increased precipitation occurs and if sludge waste streams grow.

Leachate would be trucked to wastewater treatment facilities which discharge into the Kennebec River.

Waste Management contracts with Sappi Paper in Hinkley to take up to 400,000 gallons per day of landfill leachate and the Anson-Madison Sanitary District to take up to 56,000 gallons per day of leachate from its current Crossroads landfill facility in Norridgewock.

In 2019 the DEP tested fish for PFAS levels at six locations along the Kennebec river, along with several locations on the Androscoggin and Kennebunk river.

The highest levels of PFAS in the 2019 study were found in Kennebec fish caught at the testing location below the Shawmut Dam. The testing site is located just downstream from the Sappi wastewater facility where the greatest volumes of Waste Management's landfill leachate have been released into the Kennebec for years.

Treatment for many toxins likely to be found in landfill leachate, including PFAS and PFOS, is not done by the Madison or SAPPI wastewater treatment facilities.
New landfills being licensed in NH and VT are subject to much more significant testing and treatment requirements of leachate for toxins, including PFAS/PFOS.

Waste Management has the ability to pretreat its leachate, as is demonstrated by the fact that it pretreats the leachate at its Turnkey Landfill in New Hampshire.

No testing or treatment of landfill leachate for PFAS/PFOS would be required under the draft license.

Lack of requirements for treatment of the leachate in Norridgewock increases risks of contamination both to groundwater supplies and surface waters.

Waste Management has not provided adequate data that the proposed landfill would meet licensing criteria that the facility will not constitute a hazard to health or welfare, will not pollute any water of the state, and will not unreasonably adversely affect surface water quality or cause an unreasonable threat to the quality of a classified body of surface water.

Groundwater Pollution

Waste Management's Geologic and Hydrogeologic Assessment conducted by Golder Associates of Manchester, New Hampshire claims that “There is no hydraulic connection between groundwater in the Phase 14 area and the significant sand and gravel aquifers because groundwater flow in all hydrostratigraphic units in the Phase 14 area is primarily to the south-southwest, away from the aquifers.”

Golder Associate's assessment of hydrogeology was done in 2017 and 2019, with limited testing again in 2020, all periods of significant recorded drought in Kennebec county.

There is not adequate data to back up these claims. If upon further study a hydraulic connection is found between groundwater in the new landfill area and significant sand and gravel aquifers, the risk to the Public water supply in Norridgewock, private wells, and to the Kennebec river itself are significant.

Inadequate Liner

The draft license approval would allow the new landfill to be constructed with a single liner. The only other new landfills being licensed in the northeast (in NH and VT), neither of which are as close to water bodies as the proposed landfill in Norridgewock, are being built with two layers of geosynthetic liners.

If the single-layer geosynthetic liner is damaged, compacted clay would be the primary tool to prevent contamination of groundwater. The use of compacted clay as a liner has not been shown to be effective in long-term prevention of landfill leachate leaks.

A 2003 study by Rowe, Sangam, and Lake, evaluated the integrity of a geomembrane – compacted clay composite liner system used to contain landfill leachate for 14 years. Field observations of the geomembrane revealed many defects, including holes, patches, and cracks. Physical, chemical, and mechanical tests conducted on samples collected from five different locations of the liner suggest that samples continuously exposed to sunlight or high temperatures experienced the greatest degradation. Contaminant modeling of the liner suggests that the geomembrane liner most likely stopped being effective as a contaminant barrier to ionic species sometime between
0 and 4 years after the installation.

DEP comments from Feb 14, 2020 call into question whether the hydrogeology assessment provides adequate evidence of preventing contamination of groundwater. The letter refers to statements in WM's application, that the underlying "Presumpscot clay is “almost impermeable and greatly impedes flow” and “the bedrock would be protected by this naturally occurring Presumpscot clay”.

The DEP comments specify that, "The Presumpscot Formation is known as an aquitard, but caution is recommended at assuming that groundwater below an aquitard would be protected from contamination. Current understanding of aquitards is that fracturing, unobserved sand lenses, root systems or other pathways can allow for rapid migration of contamination across and aquitard. MEDEP has experience suggesting that, “impermeable clay” deposits have allowed for the transport of contaminants to sensitive aquifers below them. The fact that usable monitoring wells were installed within the Presumpscot Formation indicates that it may allow for the transport of water through it."

Instead of taking action to effectively prevent groundwater contamination that could occur due to this underlying clay, WM instead applied for a Variance to allow it to build the landfill out of compliance with current licensing criteria.

Waste Management has not proven that either the natural geologic conditions or the groundwater monitoring system will effectively function to ensure protection of aquifers.

Waste Management has not provided adequate data that the proposed landfill would meet licensing criteria that the facility will not constitute a hazard to health or welfare, will not pose an unreasonable threat to the quality of a significant sand and gravel aquifer, will not pose an unreasonable threat to the quality of an underlying fractured bedrock aquifer, and will not pose an unreasonable risk that a discharge to a significant ground water aquifer will occur.

Inadequate Leak Detection

The landfill will lack an ongoing electrical leak detection system, with the only requirement for leak detection occurring prior to the landfill going into operation. Once waste materials start piling up in the landfill, no leak detection system will be required.

A variety of leak detection systems are available and in use by the industry to monitor the liners for leaks after the landfill is in operation. Systems using electro-chemical sensing units for liner leak detection and location are able to to monitor the liner 24/7 and notify the operator of leaks immediately.

The draft license would only require a use of an electrical leak detection system prior to there being the greatest likelihood of leaks. In order to provide any protection against risk of groundwater contamination by leachate, a leak detection system needs to be active through the life of the landfill.

There is no indication in the draft licensing decision that potential for groundwater contamination would be effectively prevented by the proposed landfill operations. The lack of adequate monitoring requirements creates an unreasonable risk that a discharge to a ground water aquifer will occur.

Waste Imports Incentivized

The Norridgewock landfill is the only in Maine licensed to take "special waste," and one of very few in the northeast. Approving 48 new acres of landfill space for these unwanted wastes will allow waste producers in surrounding states to avoid taking necessary action to find better waste to manage these high risk materials.

WMI's Norridgewock facility has previously been licensed to take in medical waste. Trucks from the medical waste processing facility Oxus have been seen going to the Norridgewock facility. Medical and laboratory waste is imported from surrounding states and Canada for processing by Oxus in Pittsfield, Maine. It is not clear from the application whether WM's new landfill will be licensed to take medical or lab waste, and if so, how much.

Other northeast states, including NH, MA, NY, CT, VT, and NJ, have enacted bans on disposing of organics (variously septage, municipal and industrial waste water sludge, compostable materials, liquid waste) in landfills. Sludge materials are often the most likely to include contamination by PFOS and PFAS and pharmaceuticals.

Approving this new landfill site would create new capacity for out-of-state waste, particularly special waste and sludge that is prohibited from landfill disposal in the states where it is generated.

Adding major landfill capacity with no enforceable limits on growth will only serve to make it more profitable to landfill of materials in Maine instead of taking potentially more costly steps of composting, recycling, and developing other methods of materials management.

The application does not demonstrate how the company would be in compliance with the licensing criteria that operation of the landfill will be consistent with Maine's solid waste management hierarchy.

Fire Hazards

Depending on the type and volume of wastes are disposed of in the new facility and how gas production is managed, the risk of landfill fires is likely increase.

Two acres of the northeast corner of the Crossroads landfill set on fire in the summer of 2018. According to local reports, construction and demolition debris chips used as cover on a portion of the Crossroads landfill spontaneously combusted, requiring response from multiple departments and State helicopters, resulting in the injury of several local firefighters, and a plume of toxic smoke that issued from the smoldering landfill for weeks.

In the summer of 2020 there was another fire at the Crossroads landfill, reportedly in the same section of the landfill where the 2018 fire happened. Waste Management did not notify neighbors of this fire.

Waste Management has stated that these fires were both ignited by hot embers contained within inadequately quenched biomass ash received at the facility, that originally appeared quenched when delivered. According to WM, the facility delivering the ash has improved its ash quenching procedures, and that hot loads will be delivered to a paved section of the landfill in the future.

The draft licensing decision does not include any additional requirements to prevent fire. Drenching a large load of hot ash derived from burning biomass does not guarantee that a fire will not occur, especially if it later comes in contact with dry chips and waste piles.

Placing the hot load on a concrete pad does not guarantee that sparks and debris could not become wind-borne and potentially ignite a nearby waste pile. Expansion of the gas piping, processing, and storage infrastructure also increases risks of explosions if a fire spreads, and ongoing underground fires that can damage liners and pipelines.

The Fire Prevention Plan does not address the fact that an increase in landfill size will also increase the volume of materials, including hot loads of ash and combustible CDD waste. Furthermore, with greater gas generation, the chance of fires occurring within the landfill increase, even without addition of hot loads of biomass/CDD ash.

There is no requirement in the draft licensing approval for testing or repair of liners or pipelines that could be damaged by a landfill fire.

Depending on what materials are disposed of in the new facility and how gas production is managed, the risk of landfill fires is likely increase.

Lack of an effective Fire Prevention plan constitutes a hazard to health of local people and increase risk of air contamination and contamination of groundwater.

Waste Management has not provided adequate data that the proposed landfill would meet licensing criteria that the facility will not contaminate the ambient air, will not create a nuisance, and will not constitute a hazard to health or welfare.

Due to the lack of evidence of ability to ensure compliance with multiple licensing criteria, Waste Management's license application should be denied.

Thank you for taking the time to review these Public comments.

Sincerely,
Hillary Lister
Athens, ME 04912