Responsiveness Summary
Olympic View Sanitary Landfill

December 14, 2010

A public comment period was held between October 29 and November 29, 2010 on the following Olympic View Sanitary Landfill documents:

- Remedial Investigation Report
- Feasibility Study
- Revised Public Participation Plan
- Draft Cleanup Action Plan
- SEPA Checklist
- SEPA Determination of Non-Significance

Details of the site are available at the Washington State Department of Ecology (Ecology) website: http://www.ecy.wa.gov/programs/tcp/sites/olympicView/olympicView_hp.html

Ecology received comments by email from two individuals. Although one email was received the day after the comment period closed, it is included and addressed in this summary. The comments and Ecology's responses are provided below. The emails are provided at the end of the Responsiveness Summary.

No changes will be made to the Remedial Investigation Report, Feasibility Study, Public Participation Plan, Draft Cleanup Action Plan, or SEPA documentation as a result of these comments. The Draft Cleanup Action Plan will become final.

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Comments from Claude Williams, Puget Sound Clean Air Agency:

1st - Any changes to the Gas Collection System need to be run through this agency to see if a new air permit is required or not. This is especially true if the leachate evaporator is going to be re-established, or if changes will be made to the number and sizes of flares to be used.

2nd - Do not forget you have a former MTCA site (which was a burn , then a small landfill, and finally a trailer park), just South of the Olympic View Sanitary Landfill. At the time it was evacuated it was called the Norseland Mobile Home Park. Be sure to monitor your underground water streams both up and down gradient of this facility. Hopefully, some of that is already being done for you.

3rd - A reminder that Olympic View seldom took detailed surveys of where they put asbestos. When I pointed that out they said that the whole landfill was an asbestos landfill, and they accepted that in the future they would have to "suit up" every time they drilled into it. Well, they are not the owners anymore, but we still have to take that into account.
Near the end of its life the landfill was taking 250 tons per year of asbestos waste from the Puget Sound Naval Shipyard during the height of the submarine "recycling" era. To the best of my knowledge, all of that asbestos was all going to Olympic View Sanitary Landfill.

There is a WHOLE LOT of asbestos in that landfill. Especially in those last lifts. Please take that into account in your safety plans.

Ecology Response:

1. Puget Sound Clean Air Agency issued the facility an order of approval for installing a new flare in May 2010. According to facility representatives, they have no plans to re-establish leachate evaporation or make changes to the operating system and they understand future modifications will require communication with Puget Sound Clean Air Agency.
2. Groundwater is routinely monitored both upgradient and downgradient of the landfill. To date, no contaminants associated with upgradient sources have been detected.
3. Thank you for the reminder about the presence of asbestos in the landfill. Work activities at the landfill that have the potential for exposing waste will require appropriate safety precautions.

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Comments from Ken Van Biskirk, community member:

Both the OVSL and Norseland mobile home park were listed by the EPA in 1993, yet I see no reference to Norseland in any of the background information. Since both drain into the Union River Valley I wonder if Norseland was cleaned up and what are followup measures for it? Why isn't it included in the overall site plan?

Was there any follow-up sediment/groundwater studies on the Union River that were conducted in the late 1990's?

At what depth has the ground water been impacted? Have all the streams been identified? Are the aquifers mapped?

How often are the onsite wells and neighbors wells monitored? I would hope quite often given OVSL's and Norseland's proximity to the Critical Aquifer Recharge Area in the Union River Valley.
Is tributary 512 the same as the NE fork of the Union River?

I would also like to offer some information that should be included in the process. Background information that I think should be included in any planning documents are:
Kitsap Sun http://web.kitsapsun.com/packages/toxic/lostsite.html#hood
Mason County comprehensive plan map of critical aquifer recharge area in the Union River Valley and in the Belfair UGA.

Ecology Response

The OVSL Site operated as a municipal solid waste landfill from 1963 to 2002. It operated under various names and owners and expanded over time. The original disposal area was unlined, but as new state regulations were enacted, new disposal areas were built with bottom liners, leachate and gas collection systems, and impermeable covers, in compliance with the more stringent requirements. Groundwater at the site has been monitored since 1975 and will continue being monitored until cleanup standards are met and the 30-year post-closure period is over. (The length of the post-closure care period can be decreased by the health district if the owner demonstrates that human health and the environment will be protected, or increased by the health district if they determine that a longer post-closure care period is needed to protect human health and the environment.)

In addition to the ongoing quarterly groundwater monitoring, several investigations have been conducted to evaluate the landfill's impact on surface water, sediments, and groundwater in the area downgradient of the landfill. These investigations are summarized in the Remedial Investigation Report.

Ecology developed cleanup levels for the constituents of concern at the OVSL Site. These are listed and discussed in the Draft Cleanup Action Plan. The following table will give you an idea of the level of groundwater contamination at the site compared to the cleanup standards and to drinking water standards.

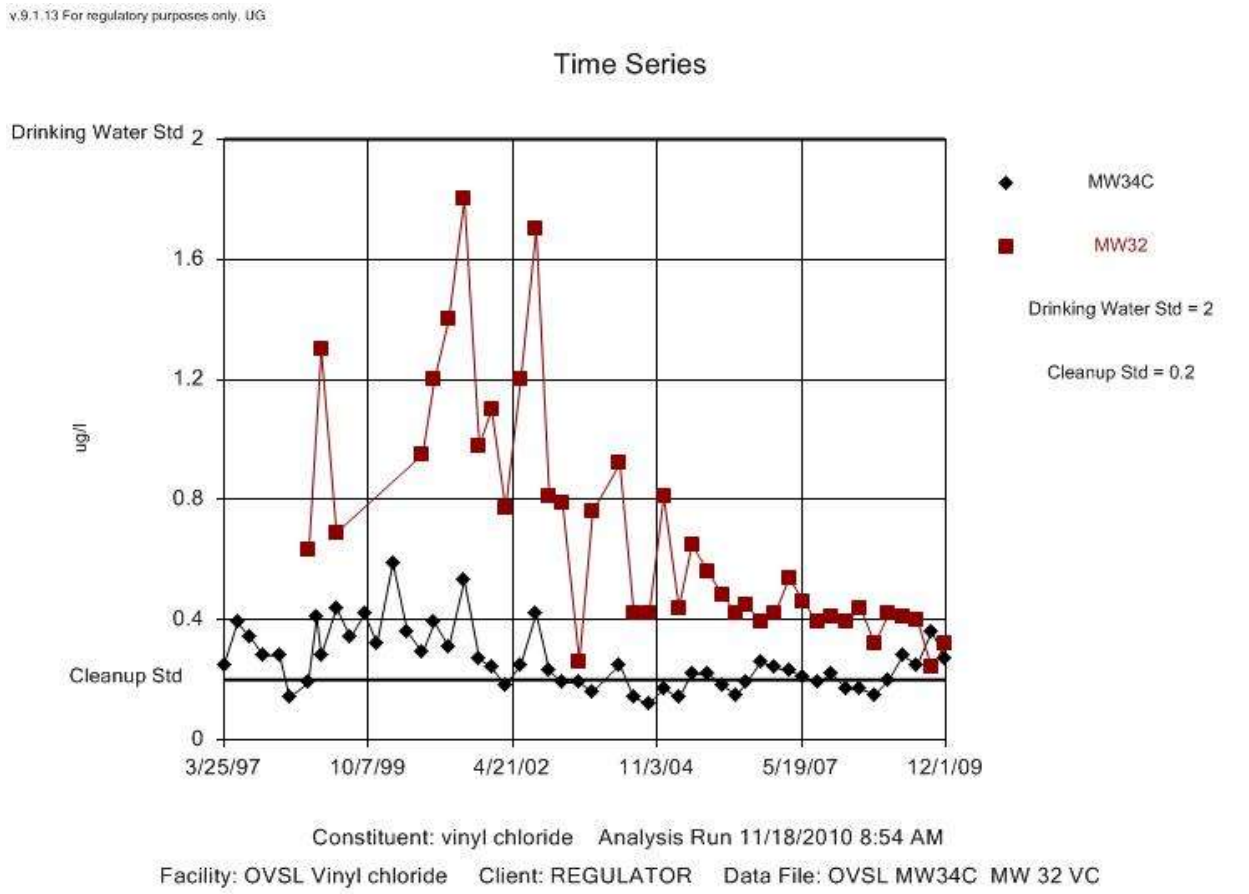
September 2010 Ground Water Results at OVSL That Exceed Cleanup Standards

Well Category	Well ID	Ammonia (mg/L)	Arsenic (mg/L)	Iron (mg/L)	Manganese (mg/L)	Vinyl Chloride (µg/L)	Trichloroethene (µg/L)
Compliance Wells	MW-43				0.11		
	MW-42	4.7	0.0017	23	4.3		
	MW-39	0.39	0.0015	33	0.49		
	MW-34C		0.0013	1.2	0.85	0.26	
	MW-34A		0.00052				
Performance Wells	MW-19C	0.5	0.00415		1.1		1.9
	MW-4		0.00099		1.1		
	MW-23A		0.00078	1.4	2.4		
	MW-24		0.00056		1.9		
	MW-2B1	1.4		2.5			
Downgradient Wells	MW-29A		0.00186	3.7	1.2		
	MW-32		0.0101	0.89	2.9	0.31	
	MW-33C		0.0027		0.14		
	MW-36A		0.00102				
Cleanup Std		0.19	0.00046	0.3	0.05	0.2	1
Drinking Water Std		None	0.01	0.3 *	0.05 *	2	5

* Standards for iron and manganese are "secondary", meaning they are based on aesthetic qualities and not health effects.
mg/L = milligrams per liter or parts per million
µg/L = micrograms per liter or parts per billion

The Table shows the most recent ground water results from samples collected in September 2010. The Table lists the wells and the constituents above the cleanup standard. The Table also shows the cleanup standard and the drinking water standard. Many of the cleanup standards are below the drinking water standards to be protective of the water resource.

The following graph shows vinyl chloride concentrations over time at MW-34C and MW-32 compared to the cleanup standard and the drinking water standard (shown at top of graph). It shows a decreasing trend.



The following paragraphs address the specific questions.

Question: Both the OVSL and Norseland mobile home park were listed by the EPA in 1993, yet I see no reference to Norseland in any of the background information. Since both drain into the Union River Valley I wonder if Norseland was cleaned up and what are followup measures for it? Why isn't it included in the overall site plan?

Response: The Norseland Site was not discussed in the OVSL documents because no effects from the Norseland Site or other nearby properties have been identified at the OVSL site. Data from groundwater monitoring wells at OVSL's upgradient (eastern) property boundary show no indication of offsite contaminant sources. The source of impacts to groundwater beneath the OVSL property is the landfilled waste.

A remedial investigation/feasibility study was completed for the Norseland Site in the late 1990s. Under a consent decree, the responsible parties constructed a compacted soil cover, monitored groundwater, and maintained the cover and monitoring systems. To protect the cover, restrictions were placed on the type of activities that can take place on the property. In 2008,

Ecology conducted a periodic review of the Norseland Site and determined it could be delisted. The delisting process is scheduled to occur when staff resources are available. For more information about the Norseland Site, please contact the Ecology Site Manager, David South, at 425-649-7200 or dsou461@ecy.wa.gov.

Question: Was there any follow-up sediment/groundwater studies on the Union River that were conducted in the late 1990's?

Response: In 1997, under contract to the U.S. Environmental Protection Agency (EPA), Ecology & Environment (E&E) conducted a Site Inspection (SI) at OVSL. The SI included reviewing existing site information, collecting groundwater, surface water, and sediment samples, and preparing a report. The report findings are summarized in the following paragraphs.

Sediment and surface water. The landfill's consultants, Ecology, and local agencies collected sediment and surface water quality data in the landfill vicinity from 1984 to 1996. In 1997 during the SI, E&E reviewed the existing data and then collected and analyzed additional samples from the Union River, its tributaries, and wetlands in the landfill vicinity. The findings were:

- No elevated concentrations of Volatile Organic Compounds (VOCs) or Semi-Volatile Organic Compounds (SVOCs) were detected in sediment or surface water samples.
- One sediment sample on the Union River had an elevated level of Aroclor 1260 (a PCB); however, the result was considered an anomaly because samples at upgradient locations on the river, that were still downgradient of the landfill, did not have detected concentrations of this PCB.
- No inorganic elements were detected at elevated concentrations in sediment or surface water samples from the Union River, the East Fork Union River, of Tributary 512.
- Several inorganic elements were detected at elevated concentrations in sediment and surface water samples from the wetlands adjacent to the landfill.

The Health District and Ecology required further investigation of the wetlands adjacent to the landfill and a study was conducted by Entrix for OVSL in 2000. The Remedial Investigation Report summarizes the EPA Site Investigation and the wetlands investigation conducted by Entrix.

Groundwater. E&E collected 13 samples from residential wells. Two were upgradient background locations and 11 were downgradient and east of Old Belfair Highway. The report concluded, "The impact to the residential well groundwater is not conclusive, but it does appear that manganese may have migrated to these wells." Manganese was detected in three of the 11 downgradient wells at concentrations exceeding the secondary maximum contaminant level

(MCL) for drinking water. Secondary MCLs are based on potential taste and odor impacts, not on health effects.

Residential wells were also sampled before and after the 1997 SI as discussed below.

Question: At what depth has the ground water been impacted? Have all the streams been identified? Are the aquifers mapped?

Response:
Aquifer mapped. The aquifers have been mapped. The aquifer beneath the OVSL property boundary is within a glacial outwash sands and gravel unit that is 300 feet thick in the eastern portion of the site and pinches out to the west. Within this glacial outwash unit the aquifer (the water bearing zone) is approximately between 50 feet to the west to 250 feet thick to the east. This information has been collected from 59 wells and borings drilled since the mid 1980s at the site.

Because of the thickness of the aquifer, water quality samples have been collected at multiple depths within the aquifer since the early 1990s. There are 10 well clusters at the OVSL site. Well clusters are more than one well at one location that are screened at different depths in the aquifer. Some of these well clusters monitor intervals from the top of the aquifer to approximately 100 to 200 feet below ground surface.

Depth of impacts. Generally, the chemical concentrations decrease with depth. Parameters that exceed the cleanup standards have been found in deeper zones of the aquifer in a couple of wells screened approximately 90-100 feet below ground surface downgradient of the landfill. In the Table above, the deeper wells are MW-19C and MW-34C. The parameters are vinyl chloride, trichloroethene, arsenic, iron, manganese and ammonia.

The monitoring program during this cleanup effort will continue to monitor those wells that show contamination to assess the effectiveness of the cleanup action plan. Until the cleanup standards have been met, the landfill is required to monitor the ground water wells listed in the Environmental Monitoring Plan. Under this cleanup effort, the cleanup standards must be met for three years to be considered clean. Once considered clean, the Kitsap County Health District will oversee the landfill as post closure care and monitoring continue.

Streams identified. The streams in the vicinity of the landfill have been mapped and are shown on the figure from the Remedial Investigation Report on page 9 .

Question: How often are the onsite wells and neighbors wells monitored? I would hope quite often given OVSL's and Norseland's proximity to the Critical Aquifer Recharge Area in the Union River Valley.

Response: OVSL, Inc. samples the onsite groundwater monitoring wells quarterly in accordance with the Environmental Monitoring Plan. Ecology and the Kitsap County Health District review the quarterly and annual monitoring reports submitted by OVSL, Inc.

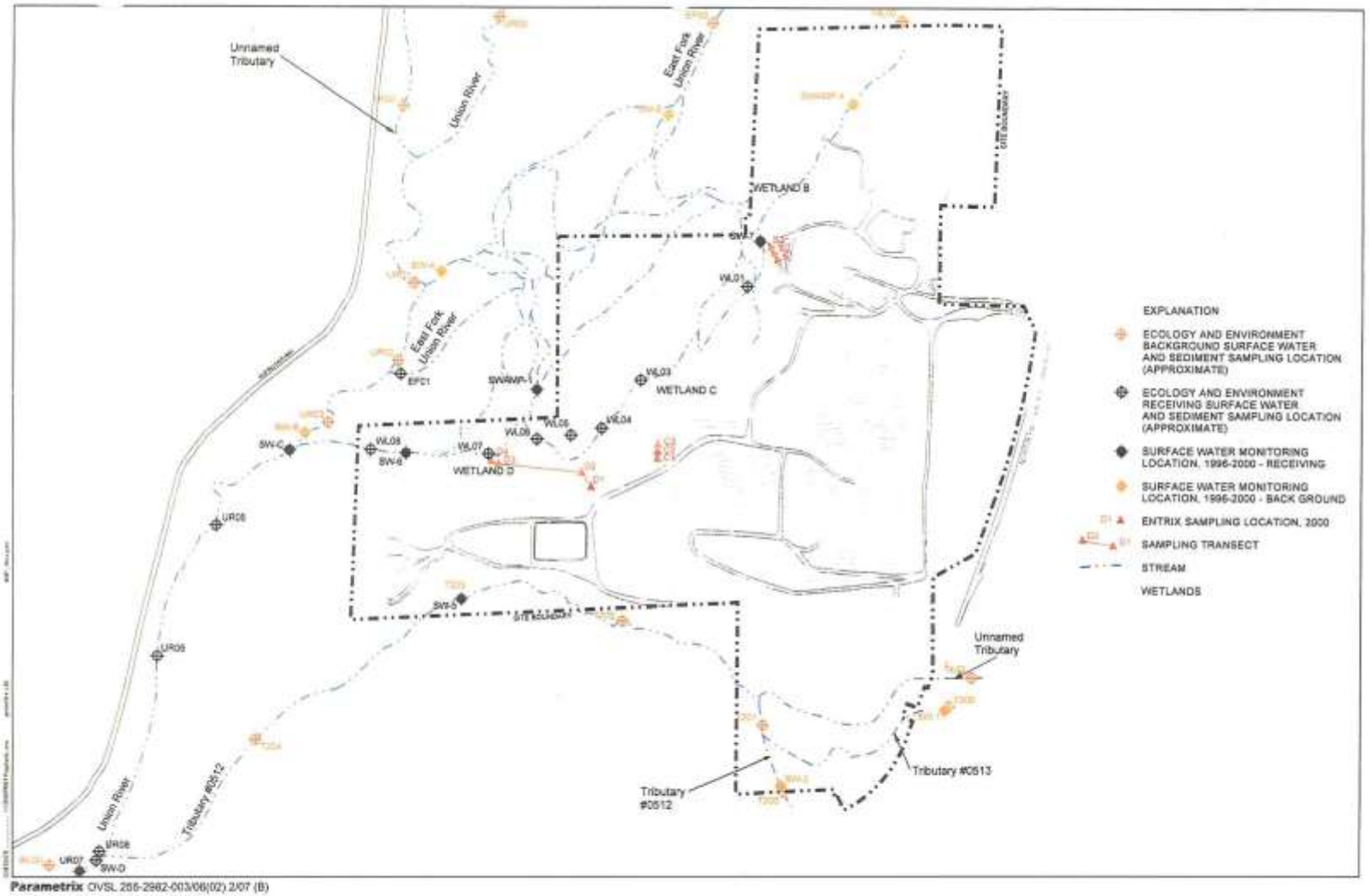
Offsite residential well sampling has occurred as follows:

- Late December 2005/early January 2006, nine residential wells were sampled by Parametrix for OVSL, Inc. as part of the Remedial Investigation.
- 1997, thirteen residential wells were sampled by Ecology & Environment for EPA.
- June 1995, three residential wells were sampled by Boateng and Associates, Inc.
- Early 1990s, eleven residential wells were sampled in compliance with a Bremerton/Kitsap County Health District requirement for new wells.
- 1989, four residential wells were sampled by Parametrix for OVSL, Inc.

No volatile organic compounds or semi-volatile organic compounds were detected in residential wells during any of the sampling events. The only constituents detected above maximum contaminant levels are iron and manganese. As mentioned before, the MCLs for iron and manganese are secondary, meaning they are odor and taste based, not health based. Iron was also detected in upgradient wells above the MCL. Iron and manganese are naturally found in soil at varying concentrations and it is common to detect iron and manganese in groundwater.

Question: Is tributary 512 the same as the NE fork of the Union River?

Response: Tributary 512 is located near the southern property boundary extending from the southeast corner of the property about 4,000 feet towards the southwestern corner of the property. Near the southwest corner of the property it trends southwest towards the Union River. It is also shown on the figure on the following page.



Parametrix OVSL 256-2962-003/06(02) 2/07 (B)

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SCALE IN FEET

Figure 6-1
Surface Water Sampling Locations
Olympic View Sanitary Landfill

Comment: I would also like to offer some information that should be included in the process. Background information that I think should be included in any planning documents are:
Kitsap Sun http://web.kitsapsun.com/packages/toxic/lostsite.html#hood
Mason County comprehensive plan map of critical aquifer recharge area in the Union River Valley and in the Belfair UGA.

Response: Thank you for providing this information. The 1997 Kitsap Sun article provides good historical context.

Comment Emails

From: Claude Williams [ClaudeW©pscleanair.org]
Sent: Monday, October 18, 2010 12:34 PM
To: Wall, Madeline (ECY)
Cc: Perkins, Sally (ECY); Steve Van Slyke; Agata Mcintyre; Stella Nehen; John Anderson; Robert Booher
Subject: Comments for Facility Site ID #: 79649975 Olympic View Sanitary Landfill -Draft Cleanup Action Plan
Attachments: OlyView Comment Request from Ecology. pdf

Madeline,
I have had the Olympic View Sanitary Landfill assigned to me since I started here at the Puget Sound Clean Air Agency in I have only three comments.

1st - Any changes to the Gas Collection System need to be run through this agency to see if a new air permit is required or not. This is especially true if the leachate evaporator is going to be re-established, or if changes will be made to the number and sizes of flares to be used.
2nd - Do not forget you have a former MTCA site (which was a burn, then a small landfill, and finally a trailer park), just South of the Olympic View Sanitary Landfill. At the time it was evacuated it was called the Norseland Mobile Home Park. Be sure to monitor your underground water streams both up and down gradient of this facility. Hopefully, some of that is already being done for you.
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v/r

Claude Williams,
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From: Ken and Peggy [dukeof@hctc.com]
Sent: Tuesday, November 30, 2010 9:54 AM
To: Wall, Madeline (ECY)
Cc: ibsen@hctc.com
Subject: Olympic View Sanitary Landfill comments

Madeline, I'm sorry we couldn't hold the VOICE meeting last week. Unfortunately the VOICE wont meet again until January 2011 and I don't know if you can extend the comment period.
I read through most of the material on the website and I have been unable to find answers to several questions.

Both the OVSL and Norseland mobile home park were listed by the EPA in 1993, yet I see no reference to Norseland in any of the background information. Since both drain into the Union River Valley I wonder if Norseland was cleaned up and what are followup measures for it? Why isn't it included in the overall site plan?
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Ken VanBuskirk
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