



DEPARTMENT OF
ECOLOGY
State of Washington

Response to Comments

Draft Focused Feasibility Study for the Pasco Landfill

Facility Site ID: 575

Cleanup Site ID: 1910

Public comment period held:

September 12 – October 26, 2018

Summary of a public comment period and responses to comments

December 2018

Publication and Contact Information

This document is available on the Washington State Department of Ecology's website at <https://fortress.wa.gov/ecy/gsp/CleanupSiteDocuments.aspx?csid=1910>.

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Toxics Cleanup in Washington State

Accidental spills of dangerous materials and past business practices have contaminated land and water throughout the state. The Washington State Department of Ecology (Ecology) Toxics Cleanup Program works to remedy these situations, which range from cleaning up contamination from leaking underground storage tanks, to large, complex projects requiring engineered solutions.

Contaminated sites in Washington State are cleaned up under the Model Toxics Control Act (MTCA, [Chapter 173-340 Washington Administrative Code](#)), a citizen-mandated law passed in 1989. This law sets standards to ensure toxics cleanup protects human health and the environment and includes opportunities for public input.

Public Comment Period Summary

Ecology held a comment period from September 12 through October 26, 2018, for the draft Focused Feasibility Study (FFS) Report for the Pasco Landfill cleanup site. We received two versions of the FFS from two groups of potentially liable persons (PLPs). The studies evaluate final cleanup options for all areas of the Pasco Landfill. We held a public meeting on September 26 at 6:30 p.m. at the Virgie Robinson Elementary School, which was attended by about 25 people.

We received six sets of comments, which we address in the Response to Comments section that begins on page 2. We extended the original comment period end date of October 12 for two weeks based on a request from the Franklin County Commissioners. After considering the comments, Ecology has made the draft report final without further changes.

Pasco Landfill Background

The Pasco Landfill is about 1.5 miles northeast of the City of Pasco, north of the intersection of Kahlotus Road with U.S. Highway 12. The landfill property covers nearly 250 acres and is surrounded by agriculture and commercial businesses. The Basin Disposal transfer station on Dietrich Road is at the southern end of the landfill. The landfill no longer accepts waste and is closed to the public. Gates, fencing, and signs restrict access to this active cleanup site.

The landfill opened in 1958. Waste was burned in trenches until 1971, when the site became a sanitary landfill. From 1972 to 1975, the landfill accepted industrial waste. Some was delivered in 55-gallon drums and disposed in two zones. Some was delivered as bulk liquids and placed into large evaporation lagoons. Some paper industry sludges were placed into a separate repository. The unlined municipal solid waste (MSW) landfill closed in 1993. A separate lined solid waste landfill area (New Waste, Inc.) was constructed north of the MSW Landfill in 1993 and closed in 2002. Though located within

the overall limits of the Pasco Sanitary Landfill Inc. property boundary, the New Waste Landfill is not considered a contributor of environmental impacts, and is not considered a part of the Pasco Landfill cleanup.

Index of Comments Received

Everyone who submitted comments is listed below in alphabetical order by their last name or organization, followed by the date we received their comments and the pages on which their comments are printed as received. Contact information (postal and email addresses and phone numbers) has been omitted.

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| Industrial Waste Area Generators Group III (IWAG) | October 26 | 10-15 |
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Response to Comments

Benton-Franklin Health District, October 9, via email

Thank you for the opportunity to review and comment on the above referenced study. Upon review of the documents BFHD has no comment regarding the proposed actions with the exception of those activities being considered for Zone A. BFHD has no preference in the proposed options that meet Ecology's minimum criteria, specifically options A-5 through A-7 and A-9. BFHD has concerns for the potential health and safety ramification for each of the options as follows:

1. Detailed safety plans will be necessary to insure worker safety while removing the existing waste from Zone A. These plans must be developed to prevent spontaneous combustion and insure that all employees are provided the appropriate protective equipment.
2. Detailed safety plans with approval from local emergency management and EMS agencies to insure public safety from any potential fire/explosion occurring as a result of this work.
3. Plans to address free product on the groundwater surface below Zone A seem insufficient to prevent further degradation of groundwater.
4. Multiple options include removal of soil below Zone A to differing depths yet no consideration appears to exist to remove contaminated soil to the groundwater surface. Excavating and removing all waste and contaminated soils would seem to be most protective of human health and groundwater.

Choosing a final remediation plan is imperative to addressing the increasing degradation of the waste in Zone A. Concerns with elevated temperatures, and the inability of the current treatment system to capture waste products prior to reaching groundwater must be addressed. It should be noted that contamination of groundwater originating from this site has been going on for decades and the selection of a final remediation plan is long overdue. Upon selection of a final remedy, implementation should be required within 180 days with major milestones identified and timelines attached to each. The continuation of the status quo at this site cannot be tolerated in the interest of public health and safety.

Ecology's response: Thank you for your comments. We have numbered our responses following your numbered comments.

- 1. Health and safety plans are a required part of any cleanup plan. The PLPs will identify all hazards associated with the proposed cleanup work in all areas of the site, including Zone A. We will work with the PLPs to ensure that these plans are adequately comprehensive and address a wide variety of potential hazards and health concerns. Ecology personnel will be onsite routinely during the work to determine if plans are being followed. Both worker safety, which will include protective equipment, and the safety of the surrounding community will be fully considered and planned.*
- 2. We have communicated with local emergency management and EMS agencies throughout the cleanup process and will continue to update them as the cleanup action plan is drafted and implemented.*
- 3. Ongoing monitoring for free product is occurring at several wells within and surrounding Zone A. To date, free product has been detected at one monitoring well installed near the north-central portion of Zone A. Groundwater sampling over the past year from wells located along the downgradient perimeter of Zone A has not identified the presence of free product or significant changes in contaminant concentrations. After the drums and other waste debris are removed, there will no longer be a source for further free product to leak and impact soil and groundwater. An absorbent "sock" has been installed in the one well containing free product. This device passively captures and retains about one liter of free product before it needs to be replaced. Periodically, the socks containing a certain quantity of absorbed free product are removed, and new socks are installed. While currently used in only one monitoring well, these absorbent socks are actively removing free product from a potentially "worst-case" location beneath Zone A.*
- 4. Several different cleanup options for Zone A soil and groundwater are under consideration that involve removing and treating contaminated soil. The final cleanup remedy for Zone A will be required to meet Washington's threshold cleanup requirements as specified in MTCA.*

We are working with the PLPs to develop an appropriate, timely, and comprehensive cleanup process that complies with the required local, state, and federal requirements. A detailed project schedule, including major milestones and deliverables, will be included in the forthcoming draft Cleanup Action Plan (dCAP). The dCAP will be included as an exhibit within the final administrative order developed for this cleanup site.

Leonard Dietrich, October 26, submitted online

Introduction

On September 12, 2018, the State of Washington Department of Ecology (“Ecology”) invited the public to comment on the draft Focused Feasibility Study (“FFS”) reports submitted by parties comprising the Industrial Waste Area Group III (“IWAG”) and the Landfill Group (“LFG”). Specifically, Ecology is seeking input on final cleanup remedy for each waste area at the Pasco Sanitary Landfill NPL Site (“Site”). According to Ecology, information from public input along with the draft FFS reports and interim cleanup actions will be considered in preparing the final cleanup plan for the Site.

In response to Ecology’s invite for public comment, following are my comments on the cleanup alternatives in general and to Zone A more specifically. Primarily, my comments intend to convey my concern as a member of the public and a resident of the Pasco community that Ecology select a cleanup remedy that brings finality to the cleanup of the Site to the fullest extent practicable, in accordance with federal and state law.

Final cleanup remedy to meet thresholds under federal and state law

My understanding is that under the federal law, Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”), and its state equivalent Model (“MTCA”), protecting human health is a primary cleanup threshold. Also, compliance with cleanup standards is an additional statutory requirement.

In addition, in selecting a cleanup remedy, Ecology must meet the following significant requirements: 1) select and use permanent solutions to fullest extent practicable; 2) provide a reasonable restoration time frame; and, 3) consider public concerns. Therefore, compliance with cleanup standards is the minimum requirement for a cleanup remedy. The overarching objective in selecting a cleanup remedy is to protect human health through a permanent solution to the fullest extent practicable that is implemented in a reasonable time frame.

Concerns with selecting cleanup alternatives

As a member of the public and a resident of the Pasco community, my overarching concern is that the selected cleanup remedy for each waste area will not only meet cleanup standards but will be a remedy that protects human health. My concern is that groundwater contamination has been a long-term issue at the Site and could remain an issue if sources of groundwater impacts remain at the Site. In fact, according to Ecology, groundwater impacts were first observed in 1985 and have been observed as late as this year. Therefore, to protect human health from future groundwater contamination, Ecology will have to select a remedy that eliminates the potential for groundwater contamination.

Also, to eliminate the threat of potential groundwater contamination, Ecology will have to select a remedy that offers a permanent solution. My concern is that the cleanup

alternatives for Zone A (A-5 through A-7) will allow some existing sources of groundwater contamination to be repackaged (for example, drums with liquid waste wrapped in plastic) and relocated at a facility on the Site. For a source of potential groundwater contamination to remain at the Site allows for future releases to groundwater as the packaging and the on-site facility infrastructure degrade over time. It does not seem to be a permanent solution for a site that has had issues with groundwater contamination for several decades. Ecology should consider a remedy that does not repackage existing sources of potential groundwater contamination and allows them to remain at the Site. In other words, I am concerned that a selected remedy is not a permanent solution if it allows existing sources of groundwater contamination to remain on Site.

In addition, Ecology should select a cleanup remedy that provides a reasonable restoration time frame. My concern is whether it is possible to achieve a reasonable restoration time frame at the Site if a cleanup remedy allows the sources of groundwater contamination to remain at the Site? Would the Site ever be restored, much less in a reasonable time, if the sources of groundwater contamination remain at the Site? After all, Zone A was closed in 1975 and yet after decades of interim actions to address groundwater contamination and trying to remediate potential sources, groundwater continues to be impacted by contamination at the Site – to this day.

In summary, I want Ecology to select a cleanup remedy that is the most reliable, effective, permanent solution that is protective of the human health.

Ecology's response: Thank you for sharing your comments and concerns as a local resident. We share your desire to protect human health and the environment, more specifically – by preventing future groundwater contamination. Using information from the PLP's FFS documentation and other site information, Ecology will develop a dCAP that addresses cleanup actions throughout the entire Pasco Landfill site. This includes removing and properly disposing/treating the waste and contaminants within Zone A. The selected remedy will permanently stop drums from leaking their contents to groundwater.

We understand that your preference is for excavated waste to be disposed of off-site. We will consider this as we develop the dCAP. If any excavated waste remains on-site, its disposal would meet current regulations, which include being in a double-lined cell that can detect and contain leaks.

In accordance with Washington's cleanup law, the final cleanup will be designed so that groundwater quality can be restored in a reasonable time frame.

Franklin County Commissioners, October 9, via email

I want to thank you, Chuck and Erika for making the presentation at today's Commissioner meeting a reality on relatively short notice. I believe the presentation went

well given the time constraints on a busy meeting agenda day. Our commissioners would respectfully request a 2 week extension of the public comment period which I believe will be October 26, 2018. Charles indicated that we would simply need to make this request in writing and that email would suffice.

Thank you for your efforts on this challenging project and we look forward to successful remedies in the near future.

Ecology's response: We encourage and appreciate local government involvement in cleanups in their community. Our decision to extend the public comment period in response to Franklin County's request helps ensure that important input is received from the local community where the cleanup work has, and will continue to, occur.

Franklin County Commissioners, October 26, via email

This letter provides comments concerning the Focused Feasibility Study (FFS) for the Pasco Sanitary Landfill. Franklin County is a potentially liable party (PLP) in this matter and has previously responded to protect public health and safety by enactment of institutional controls at the Department's request in order to safeguard against threats from groundwater contamination and other potential pathways. Franklin County is concerned that the Department is moving forward with a remedy which may increase threats to public health and safety by creating an entirely new exposure pathway in transporting excavated wastes through the community. We believe that the conditions at the site and measures taken by the PLP's do not justify such a removal remedy or the substantially higher costs thereof.

The Pasco Sanitary Landfill has been a designated NPL site for decades. The investigation into the conditions at the Landfill have been ongoing and deliberate in nature. We are concerned about several items including the process by which Ecology has moved for the need for removal action at this site.

The FFS was published by the IWAG and Landfill Groups and recommended a less intrusive preferred remedial action including continuation of the Soil Vapor Extraction (SVE) system which has removed and destroyed over a million pounds of waste material from Zone A. However, in the fact sheet announcing the public comment period on the FFS, Ecology precipitously determined that the recommended alternative in the FFS was inadequate and concluded that it would not meet MTCA requirements. Ecology's fact sheet provided no explanation or analysis to support this determination and has disallowed public comment on this critical determination.

We are concerned about the sudden acceleration of the remedial action process and disregard for the procedures set forth in the MTCA regulations. Ecology has apparently decided that conditions warrant entry of a consent decree to implement a remedy prior to issuance of a draft cleanup action plan and response to comments to the FFS as provided

for in Ecology's regulations. See WAC 173-340-380. We do not see imminent threats which justify such rash action without following the process set forth in the regulations, including consideration of public comment.

The recent acceleration of the timetable for entering into a consent decree to implement a remedy is concerning to Franklin County. The interim actions taken by the PLPs, including the adoption of institutional controls by Franklin County, have resulted in a diminished ground water plume such that contamination from the ground water pathway is controlled and no longer remains outside the boundaries of the landfill. Thus, the contamination meets the point of compliance established by Ecology's regulations for groundwater contamination. This has been done by extracting and destroying hazardous substances through the SVE system. The SVE system has therefore been effective in eliminating or reducing a substantial pathway of concern that could have exposed the public to contamination via groundwater.

In addition, interim actions have allowed Ecology and the PLP's to closely monitor site conditions to ensure that there is not combustion occurring within Zone A. It is our understanding that the top experts retained by the IWAG group disagree with Ecology's determination that combustion is occurring. We are concerned that the opening of Zone A could introduce oxygen into Zone A and could unnecessarily promote conditions where combustion becomes more likely. We also believe that public comment on this issue would be beneficial to inform Ecology's decision-making for the site.

We believe that the SVE alternative is destroying hazardous substances without subjecting the public to undue risk. Ecology's current intention appears to be to remove waste that is in place and send it off site for treatment, storage or disposal. The transportation of the hazardous wastes placed within Zone A introduces a new element of risk. Franklin County and the surrounding area has witnessed traffic accidents involving semis and other transporters which, under Ecology's recommended course, could in the future include hazardous wastes from Zone A. We believe that the risks of such an alternative in transporting waste through Franklin County are unjustified given the availability of on-site destruction of the hazardous substances via the SVE alternative in the FFS preferred remedy. Ecology's position as to the need for excavation is not explained or justified in the fact sheet or other documents received to date. There have been no technical documents issued that explain the basis for Ecology's determination that there is an active fire in Zone A, that the SVE will not meet MTCA criteria, including a reasonable restoration time frame. We believe that the process needs to continue to deliberately assess risks and alternatives before requiring expenditure of double or triple the remedial action costs recommended by the FFS preferred alternative. We therefore ask Ecology to work with Franklin County and the other PLPs moving forward to achieving a safe and effective remedy for cleaning up the Pasco Sanitary Landfill site. We believe that Ecology should accept public comment to address the public's views on

whether the SVE system can adequately protect the environment in a timely and cost effective manner, which was ruled out when the comment period was first announced.

Finally, we recognize Ecology's determination that Franklin County is a potentially liable party, based on a single invoice for disposal of 110 drums at the site. There is anecdotal evidence to suggest that these drums were rinsed and empty when disposed of. We also point out that Ecology urged Franklin County to continue permitting of the site as an industrial waste disposal facility when Franklin County sought to close it. At that time, on November 30, 1973, Ecology's director John A. Biggs wrote to Franklin County urging it to permit acceptance of industrial wastes on an interim basis pending identification of an alternative site and represented that Ecology would "carry on an adequate monitoring and surveillance program and accept full responsibility for the prevention of any environmental hazards resulting from the operation."

We hope that Ecology continues to accept this responsibility and recognizes the comparatively insignificant contribution by Franklin County in terms of volume and toxicity of hazardous substances at the site. Despite its minimal role in contributing such substances, Franklin County shares the commitment to protection of the environment in developing remedial actions at the site. The County has supported interim actions including development of institutional controls to protect the public and environment. We believe Ecology should identify Franklin County's responsibility as a de minimis party and resolve this matter by settling in a manner that allows a specific identification of the County's responsibility so that the County can apply for remedial action grants to fund the public's share of responsibility, if any, without undue burden on County taxpayers. We believe such a resolution would be consistent with Ecology's prior commitment to the County to take responsibility for resulting environmental hazards from landfill operations.

We look forward to hearing your response.

***Ecology's response:** Ecology does not support SVE as the long-term remedy because subsurface conditions at Zone A continue to worsen after more than 20 years of SVE operation. These conditions include an active subsurface fire, the presence of hazardous substances (non-aqueous phase liquid [NAPL]) on groundwater, considerable uncertainty over the cleanup time frame for an SVE-only remedy, and the inability to operate the SVE system more aggressively without increasing combustion concerns. To learn more about the IWAG experts' and Ecology's positions on subsurface combustion in Zone A, please see the IWAG's April 2017 [Zone A Combustion Evaluation Report](#) and a September 2017 [Ecology response letter](#). These documents have been available on our website since late 2017.*

The unstable conditions pose potentially serious threats to human health and the environment. These conditions, and the associated threats, have been openly discussed with Franklin County Fire District No. 3 and with Franklin County Emergency Management. Ecology has been diligent

in its efforts to work with the PLPs to help minimize these threats through various stopgap measures. These measures, however, cannot permanently or quickly remedy the broader concerns associated with Zone A.

We explained the reasons we don't support an SVE-only remedy for Zone A on pages 1–3 of the public comment period announcement, but we appreciate the opportunity to further explain why SVE alone is no longer viable in case others had questions about it. Our statement on this in the announcement was not meant to preclude comments on that cleanup option. Rather, it was to provide the public with a broad description, written for a generally non-technical audience, about SVE's inability to meet Washington state's minimum cleanup requirements. All members of the interested public were encouraged to comment on this option, as the Commissioners did, and we will consider your comments.

The IWAG FFS included nine alternatives for Zone A. Alternatives A-1 through A-4 are SVE-based alternatives. The FFS did not properly assess the limitations of SVE when compared against other remedial alternatives involving excavation and removal of the leaking drums. Ecology does not agree with the IWAG's analysis presented in the FFS, as it portrayed SVE as being equal to other Zone A alternatives in terms of protecting human health and the environment, permanence, and reasonable cleanup time frame – which it is not.

There is significant uncertainty about the exact number, content, and condition of the drums in Zone A. No meaningful or defensible cleanup time frame can be developed for an SVE-only cleanup option given these uncertainties. Also, SVE is only designed to capture and remove volatile organic compounds (VOCs). While a large percentage of the waste materials disposed at Zone A are believed to contain VOCs, other chemicals also are present. These other chemicals are less effectively captured and removed by an SVE-based cleanup approach. During 20 years of operations, SVE has removed one million pounds of VOCs that previously leaked from the buried drums into surrounding waste debris and soil. While this is a substantial accomplishment, several million pounds of liquid wastes may remain within Zone A.

Recent site data show that uncontrolled, ongoing releases of chemicals continue as the drums deteriorate over time. SVE cannot control these releases. Attempts to enhance the capture of VOCs by increasing SVE airflow rates have worsened existing underground fire concerns and appear to increase the rate of drum failure, as shown by the presence of NAPL on groundwater. Once the NAPL reaches groundwater, SVE is not an effective remediation technology. Increasing SVE flow rates to more effectively capture VOCs also creates a greater risk for subsurface fires within and around Zone A.

Some existing SVE wells show measurable performance declines caused by a buildup of residue encrustation and liquid within the wells. No alternative remediation system is readily available if the current SVE system continues to show performance decline and ultimately fails. In addition, the ongoing SVE operations require a regenerative thermal oxidation (RTO) system to treat the vapors and gases that are collected. The RTO treatment unit operates under a strict air quality permit. Permit requirements for vapor treatment and emission to the atmosphere potentially will

become stricter over time, further limiting the ability of the SVE system to effectively manage any large-scale drum release event.

We share your concerns about the surrounding community. We hope the information we've shared helps the Commissioners understand why, from Ecology's perspective, SVE is not a viable long-term cleanup option. Health and safety plans are a required part of any cleanup plan. We will work with the PLPs to ensure appropriate health and safety plan(s) for removing waste from Zone A are developed. Ecology personnel will be onsite routinely during the work to determine if plans are being followed. Both worker safety, which will include protective equipment, and the safety of the surrounding community will be fully considered and planned. All waste shipments leaving the site will meet Department of Transportation requirements and be performed by a licensed hazardous material transporter.

With respect to the Pasco Landfill cleanup work, Ecology's actions have been (and will continue to be) conducted in strict compliance with Washington law. The dCAP will describe the various cleanup components and regulatory acceptability of each. The Commissioners, along with the public, will have an opportunity to comment on the dCAP before the final cleanup work begins.

We acknowledge your perspectives about Franklin County's role as a PLP for the Pasco Landfill site based on the documentation you have referenced. In response to your proposal that Franklin County be designated as a de minimis party responsible for cleanup, we recommend that your counsel discuss this further with our Assistant Attorney General (AAG) John Level. Mr. Level can articulate Ecology's and the AAG's position on this matter, including the criteria and legal considerations involved with de minimis settlement decisions for other PLPs.

IWAG, October 26, via email

This letter provides the Industrial Waste Area Generator Group III ("IWAG") response to the Washington Department of Ecology ("Ecology") invitation for public comment on documents prepared under Agreed Order DE 9240 for the Pasco Sanitary Landfill NPL Site (the "Site") that describe final remedial action alternatives for the Site. Those documents consist of the Pasco Landfill Draft Final Focused Feasibility Study, dated August 2017, prepared by Anchor QEA for the IWAG and Bayer CropScience ("BCS") (the "IWAG/BCS FFS"), the Revised Draft Focused Feasibility Study Report [for the] MSW Disposal Areas, dated August 2017, prepared by Aspect Consulting, Inc. for the Landfill Group ("LFG") (the "LFG FFS"), the Ecology September 2018 Pasco Landfill Cleanup fact sheet ("FFS Fact Sheet"), and other relevant correspondence. On behalf of the IWAG, we provide the following comments on those documents and pertinent matters.

I. IWAG Response to Washington State Department of Health (“WDOH”) Comments

Comment 1. The IWAG disagrees with the recommendation presented in the WDOH’s statements that alternatives E-2 and E-3 for Industrial Waste Area Zone E are the most protective of future groundwater contamination.

The wastes located in Zone E, which have been under a RCRA cover since 2002, achieve the most stringent cleanup levels for VOCs [volatile organic compounds] in soil in the State of Washington. With the installation of the Municipal Solid Waste cover and gas collection system in 2002, VOC’s measured in the groundwater monitoring wells adjacent to Zone E decreased to below draft cleanup levels. There have been no exceedances of any draft cleanup level in the groundwater associated with Zone E since 2004. Alternative E-1, the preferred remedy for Zone E, which maintains the RCRA cover over the waste coupled with ongoing monitoring, provides the necessary protection to human health and the environment.

II. IWAG Comments on LFG FFS

Comment 2. The IWAG is concerned about many topics within the LFG FFS, some of which are not in full alignment with Site data, do not take into account omitted Site data, or are in conflict with IWAG conclusions presented in the IWAG/BCS FFS.

Additionally, the IWAG does not accept many of the opinions of the LFG FFS authors concerning differences between the two FFS documents offered in a November 14, 2017 Aspect Consulting memorandum (among other LFG-sponsored correspondence) and, in particular, those differences that relate to the Industrial Waste Areas of the Site. The IWAG has decided to forego providing a full set of detailed comments on the LFG FFS and other materials in order to focus on advancing the overall goal of Site cleanup. This decision should not be construed as IWAG’s concurrence with or acceptance of the LFG FFS (or other LFG-sponsored correspondence) or a waiver related to any of these issues. The IWAG reserves its rights and positions to be asserted in any context in the future.

III. IWAG Comments on IWAG/BCS FFS

Comment 3. The IWAG has achieved significant milestones in site cleanup over the past 26 years.

Since its creation in 1992, IWAG has worked closely with Ecology Eastern Regional Office (“ERO”) staff, within the MTCA framework, to investigate, characterize and remediate the Site. Through interim action agreed orders, the IWAG installed the soil vapor extraction (“SVE”) system, which, since 2001, has extracted over one million pounds of VOCs and significantly improved groundwater conditions at and

downgradient of the Site. The IWAG, in conjunction with some other Site PLPs, also undertook steps in the 1990s to protect downgradient property owners including provision of bottled water and subsequent extension of the municipal water system along "A" Street in East Pasco, and implementation of institutional controls, which include annual beneficial user surveys performed by the City of Pasco. Most importantly, the interim actions at the Site have resulted in the draft cleanup levels established by Ecology for groundwater being achieved at wells a short distance downgradient from the edge of the buried drums in Zone A since 2012.

In the IWAG/BCS FFS, the IWAG concluded, through its application of the remedy selection criteria in the MTCA regulations, that all of the interim actions implemented to date – the SVE system, a robust geomembrane cover system, institutional controls, and extensive monitoring – in combination with proposed enhancements to the SVE system would, taken together, be a suitable final remedy at the Site. Ecology, in turn, has more recently concluded SVE alone is no longer a valid remedy for Zone A. Ecology has expressed the intent to require removal of drums from Zone A as part of the final remedy to address Ecology's concerns that the drums might catch fire or explode and, if left contained in place, could require continued SVE operation for an uncertain period of time. To avoid the cost and delay of a protracted process with Ecology to resolve technical differences, and to quickly get the Site remedy finally decided and implemented, the IWAG informed Ecology in June 2018 that it is willing and ready to institute a drum removal in Zone A as a key component of the final remedy provided the IWAG can reach agreement with Ecology on the scope of work and schedule. The IWAG has agreed to, and is pursuing in collaboration with Ecology, an expedited process to define the scope of work for the final remedy for Zone A, and all other areas of the Site, to be captured in a consent decree.

Comment 4. The Site investigations and interim actions by the IWAG are supported by high quality technical documents authored by qualified and experienced environmental consultants.

Over the years, the Site has presented technical challenges in terms of site characterization and management. For instance, the 2013 combustion event with the MSW Balefill Area raised questions regarding the combustion's origin and extent and required a significant effort to extinguish¹. Additionally, the IWAG and its expert team conducted comprehensive investigations of subsurface conditions within Zone A. The IWAG team and Ecology considered the resulting information and reached different conclusions about conceptual site models for Zone A and perceptions of risk associated with the elevated subsurface temperatures in Zone A². The IWAG recognizes there have been alternative technical opinions and conclusions put forward by Ecology regarding

¹ See Section 2.3.2.7 IWAG/BCS FFS.

² See Appendix K *Zone A Heating Evaluation Memorandum*, IWAG/BCS FFS.

those and other investigations at the Site including most recently in an October 22, 2018 letter from Assistant Attorney General John Level to Franklin County (“October 22 Letter”). Throughout the IWAG’s involvement at the Site, the IWAG has retained top level consultants to assist in investigating and monitoring Site conditions and implementing and maintaining the interim remedial actions at the Industrial Waste Areas of the Site. The IWAG has invested tremendous resources to address Site conditions. Over its 26-year history at the Site, the IWAG has participated in good faith and stands behind the work performed by its technical consultants, including the IWAG/BCS FFS, its appendices, and Zone A studies, as providing complete and accurate characterizations of the Site conditions. The IWAG will devote that same high-quality work and commitment to the development and implementation of the final remedial actions for the Site. Protection of human health and the environment, and worker and community safety, have been and will continue to be the IWAG’s paramount objectives at the Site.

Comment 5. Recent Site data confirm Zone A conditions are stable and do not require immediate action.

Ecology’s September 2018 FFS Fact Sheet states “the conditions in Zone A...have become more unstable since the draft FFS.” Site data in fact confirm that Site conditions remain stable and temperatures have been reduced to below 160°F. Thus, the data do not support the Fact Sheet’s characterization of these conditions and the implication that they require an immediate drum removal action. Further, the IWAG disagrees with many of the statements in the October 22 Letter that similarly characterize site conditions and comment on the operations of the SVE system.

The IWAG has previously expressed its views to Ecology about the draft/final FFS Fact Sheet and related Ecology public presentation materials and will further address those views below. When the technical issues alluded to in the FFS Fact Sheet were initially identified, the IWAG responded promptly with Site sampling, retention of experts, work plans, and reports to address the issues on a number of fronts with Ecology in an orderly, rigorous process. Over the last several months, Site data demonstrates that subsurface temperatures at Zone A have stabilized and are slowly decreasing. And when NAPL was identified at the Site, the IWAG presented Ecology with a proposed work plan to investigate its extent, which was subsequently deferred by Ecology. We understand this deferral was primarily based upon Ecology’s view that a drum removal will address the NAPL. While the IWAG does recognize that waste incompatibility will be an issue when the drums are removed and managed, the IWAG does not find it reasonable to believe that drums buried deep in the landfill for over 40 years without a single known incident related to waste incompatibility now pose a present and serious risk of explosion or fire.

Despite the disagreements stemming from respective interpretations of technical data, the IWAG remains ready with Ecology to plan and implement a safe drum removal. The IWAG understands that it will be critical to carefully expose, characterize and manage drums and other excavated materials in a safe manner to avoid creating a waste incompatibility problem during the drum removal activities. In correspondence to Ecology dated September 24, 2018 the IWAG submitted draft work plans prepared by drum removal experts over the last several months for such a removal³. With those drafts as a starting point, the IWAG looks forward to working with Ecology and other PLPs to develop a drum removal scope of work, to be included in the Cleanup Action Plan and Consent Decree, that provides for proper waste characterization and handling and all other elements of a safe and effective resolution of Zone A as part of the Pasco Site final remedy.

Comment 6. While the IWAG respectfully disagrees with Ecology’s current assessment of Site conditions, the IWAG shares the same clean up goals with Ecology and is committed to working diligently with Ecology to achieve an expeditious final remedial action for all areas of the Site.

On June 25, 2018, Ecology provided a draft of its FFS Fact Sheet to the IWAG, the LFG and BCS, requesting feedback on the document. The IWAG provided the following comments on the draft, which are excerpted below and incorporated by this reference into these comments:

The IWAG will not be providing suggestions for specific Fact Sheet text revisions because to do so would require very substantial revisions that likely would not be adopted by Ecology. For the record, the IWAG fundamentally disagrees with the Fact Sheet’s description of Site conditions and circumstances, and especially disagrees with the Fact Sheet’s conclusions about Zone A and the FFS alternatives for Zone A remedies. The IWAG’s decision to forego providing suggestions about specific text revisions should not be interpreted by Ecology or others as IWAG’s agreement with any of the Fact Sheet’s contents. Among many issues raised by the Fact Sheet’s contents, the IWAG particularly objects to the inclusion in the Fact Sheet of the last two sentences of the fourth paragraph of the first section, stating: “Our [Ecology’s] plan is to remove drums and contamination from Zone A. In addition to making site conditions safer and more stable, this interim action will simplify the identification of a future, final cleanup remedy for Zone A.”

Accordingly, without waiver of its general objection to the Fact Sheet’s contents, the IWAG requests that the two sentences quoted above be deleted.

³ Letter from the IWAG (J. Sanscrainte and R. Bakemeier) to Ecology (M. Bellon, J. Pendowski, K. Falconer, and J. Level), September 24, 2018.

The IWAG remains committed to cooperate and collaborate with Ecology in addressing Pasco Landfill Site conditions, and in framing a path forward to implement appropriate Site remedies consistent with Site conditions and the requirements of MTCA⁴.

The final FFS Fact Sheet issued by Ecology removed the statement cited above, but included other references to an interim action drum removal at Zone A. Since issuance of the final FFS Fact Sheet, Ecology and the IWAG have begun working toward completion of the Zone A drum removal as a final remedial action pursuant to MTCA's Cleanup Action Plan and Consent Decree provisions. The IWAG reiterates its ongoing commitment to working collaboratively with Ecology and other PLPs in an expedited process to develop the documents necessary to support an Agency final remedy decision for the Site, to include a drum removal remedy for Zone A⁵.

Last, the IWAG notes that the October 22 Letter was distributed to many, but not all, the PLPs for the Site. In an email to Assistant Attorney John Level sent on October 2, 2018, Robb Bakemeier provided the IWAG's updates and corrections to Mr. Level's PLP Contact List. We request that all correspondence related to the FFS and the ongoing discussions Ecology and the Assistant Attorney General are conducting with some of the PLPs regarding the final remedial actions for Zone A and all other areas of the Site be provided to all the parties on the PLP Contact List to afford them opportunity to participate in such discussions.

Ecology's response: Thank you for your comments. We have numbered our responses following your numbered comments.

- 1. We agree that Alternative E-1 meets Washington state's threshold requirements for environmental cleanups. Ecology also acknowledges that the various remedial alternatives for Zone E presented in the draft FFS potentially will vary in terms of their overall long-term protectiveness of groundwater. The PLPs' proposed remedial alternative (Alternative E-1) relies strongly on the ongoing integrity and functionality of the existing cover system to satisfy certain minimum cleanup requirements. WDOH has indicated a preference for a more aggressive cleanup alternative that potentially reduces the likelihood of future groundwater impacts due to potential contaminant releases from Zone E wastes. Past and current groundwater monitoring near Zone E has found low-level detections of selected VOCs. Some of these past VOC detections have been close to, or slightly above, draft cleanup levels. In view of ongoing uncertainty over the source(s) causing these low level VOC detections, Ecology has required the PLPs to include a contingent remedy (ONP-1) for groundwater in the vicinity of Zone C/D and Zone E if contaminant*

⁴ Email communication from R. Bakemeier to E. Bronson, July 2, 2018. See also Email communication from R. Bakemeier to C. Gruenenfelder and E. Bronson, September 25, 2018, regarding the final FFS Fact Sheet and related Ecology public presentation materials.

⁵ Letter from the IWAG (J. Sanscrainte and R. Bakemeier) to Ecology (M. Bellon, J. Pendowski, K. Falconer, and J. Level), September 24, 2018.

concentrations remain elevated above final cleanup levels.

Although Ecology's use of eComments allows everyone to see comments as they are submitted, our intent in using it is not to encourage individuals or groups to respond to other's comments. Rather, it is to provide immediate access to comments until our responses are published.

- 2. Ecology recognizes that the various PLP groups maintain different opinions about conditions within the Industrial Waste Areas. Our FFS fact sheet cited these differences as the primary reason why the IWAG and LFG submitted separate draft FFS reports.*
- 3. We are committed to working with the IWAG and all PLPs to develop a final cleanup plan for the entire Pasco Landfill NPL Site. This currently includes developing a draft Scope of Work for a Consent Decree and a dCAP that Ecology staff will prepare.*
- 4. Ecology's stated position about Zone A conditions, including the technical rationale supporting this position, is well documented. Interested parties are encouraged to review the [public notice for the FFS comment period](#), and the IWAG's April 2017 [Zone A Combustion Evaluation Report](#) and a September 2017 [Ecology response letter](#). We agree that the top goals for Pasco Landfill cleanup are protecting human health and the environment, and maintaining worker and community safety.*
- 5. We stand by our assessment of Zone A conditions, including legitimate concerns about the composition and potential stability of the hazardous waste buried there. We agree that removing these drummed wastes, (along with certain categories of contaminated mixed debris and soil) will (1) eliminate concerns about potential long-term chemical leakage from the drums, (2) greatly reduce the potential for waste-related contaminants to impact groundwater, (3) eliminate the potential for future combustion events, and (4) promote a faster cleanup of groundwater contamination caused by past leakage and releases. As noted in response no. 3, we look forward to working collaboratively with all PLPs to develop a site-wide Cleanup Action Plan that can be implemented in accordance with the terms and conditions of a Consent Decree.*
- 6. As you noted, we modified the public notice for the FFS comment period in response to the IWAG's comments. The information mailed to the local community was accurate in terms of assumptions that were in place at the time of its distribution.*

Washington Department of Health, October 15, via email

The Industrial Waste Area Group III and Bayer Crop Science, and the Landfill Group, have each submitted a Draft Focused Feasibility Study (FFS) of cleanup alternatives for the Pasco Landfill NPL Site to the Washington State Department of Ecology (Ecology). Ecology is seeking public comments and input on the various cleanup options presented in the FFS to help determine which future actions will be taken. As part of this process, the Washington State Department of Health (DOH) conducted a review and provided recommendations with regards to health risk reductions expected from the various cleanup alternatives. Uncertainties exist and must be noted with any large and complex project. It is difficult to model the effectiveness of soil removal, soil

treatment, capping, and enhanced and monitored natural recovery, as well as make predictions on environmental conditions spanning decades. Alternatives that rely on a combination of technologies without reliance on a single technology would likely have the greatest flexibility responding to unforeseen or changing conditions.

In determining a recommendation for a particular cleanup alternative, DOH first considers whether threshold criteria would be met to protect human health. Given that all cleanup scenarios achieve some public health protection, additional considerations were given to the long term effectiveness, permanence of the solution, amount of reduction in toxicity and mobility, volume of soil to be treated or removed, practicality in implementation, and uncertainties associated with the various alternatives. While costs were considered, they were not a determining factor in DOH's recommendation.

After reviewing the FFS on the Pasco Landfill NPL Site, DOH recommends that for Zone A no action alternative, alternatives A-1 through A-4 and A-8 not be considered because these alternatives leave the drums in place, and we are concerned about the potential for thousands of these drums to leak and future increase groundwater contamination. From a health perspective, DOH recommends alternatives A-5, A-6, A-7, and A-9 as the approaches most protective of future groundwater contamination.

DOH recommends for Zone B no action alternative, alternatives B-1 and B-2, not be considered because of our concern about the potential for future groundwater contamination. From a health perspective DOH recommends Zone B alternatives B-3, B-4, and B-5 to be the approaches most protective of future groundwater contamination.

DOH recommends for Zone C/D no action alternative and alternative CD-1, not be considered because of our concern about the potential for future groundwater contamination. From a health perspective DOH recommends Zone C/D alternatives CD-2 and CD-3 to be the approaches most protective of future groundwater contamination.

DOH recommends for Zone E no action alternative and alternative E-1, not be considered based because of our concern about the potential for future groundwater contamination. From a health perspective DOH recommends Zone E alternatives E-2, and E-3 to be the approaches most protective of future groundwater contamination.

DOH recommends for on-property groundwater no action alternative not be considered based on time period. From a health perspective DOH recommends Zone on-property groundwater alternative ONP-1 to be the most reasonable approach.

DOH recommends for MSW Landfill from a health perspective alternatives MSW-1, MSW-2, and MSW-3 to be reasonable approaches. DOH recommends for balefill and inert waste areas from a health perspective alternative BA-1 to be reasonable approach.

DOH recommends for Burn trenches from a health perspective alternatives BT-A, BT-B, and BT-C to be reasonable approaches.

Ecology's response: Thank you for sharing WDOH's preferred cleanup options. The criteria you used to recommend alternative cleanup options that provide enhanced groundwater protection largely aligns with Ecology's overall goals. However, we are also required by law to weigh the environmental benefits against the costs associated with cleanup alternatives.

We share your concern about future drum leaks in Zone A, which is why Ecology will be requiring the removal of drums and a certain amount of soil and residual contamination within the underlying mixed debris and soil. Additional treatment also will be performed after the drums and debris are removed to capture, destroy, or immobilize any residual contaminants still present beneath Zone A. A protective cover also will be installed over the area after these removal actions are completed to minimize infiltration and prevent exposure.

For zones B, C/D, and E, the PLPs' preferred options (B-1, CD-1, and E-1) all meet Washington's threshold cleanup requirements under MTCA. We must consider the cost of removing the cover systems, excavating the waste, and disposing of it off-site against the benefits achieved by removing the waste.

The no action alternatives don't meet threshold requirements, so we will not consider them for any of the zones.