

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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THE STATE
of ALASKA
GOVERNOR MICHAEL J. DUNLEAVY

December 2, 2024

Electronic Delivery Only
Lance Raymore
Federal Aviation Administration
222 W. 7th Ave, Box 14
Anchorage, AK 99513-7587

Re: DEC Review and comments, *Final FAA Skwentna Post-Remedial Action Report, Skwentna, Alaska*. Dated May 2024

Dear Mr. Raymore:

The Alaska Department of Environmental Conservation (ADEC) has reviewed the aforementioned final report which summarizes remedial actions and release investigation activities performed between 2019 and 2023 at the following Federal Aviation Administration (FAA) contaminated sites in Skwentna, Alaska.

- FAA Skwentna Station - Simultaneous Broadcast Range with Adcock Antenna Aboveground Storage Tank (SBRA AST) – Hazard ID 1504
- FAA Skwentna Station - Control Tower Fuel Building – Hazard ID 26326
- FAA Skwentna Station - Non Directional Beacon (NDB) Tank Farm – Hazard ID 1505
- FAA Skwentna Station - Pesticide Sprayer Area – Hazard ID 26325
- FAA Skwentna Station - Dump No. 1 – Hazard ID 1506

The report summarizes site characterization, cleanup, and risk assessment work over the five phases of this project. In July 2024 the FAA revised the report to incorporate comments and recommendations made by DEC. The attached FAA response to comments and final report are approved as written.

DEC agrees with recommendations for additional work detailed below at the following areas of concern (AOCs):

- SBRA AST (NDB3): Continued groundwater monitoring.
- NDB Tank Farm (NDB1): Additional groundwater investigation and monitoring including installation and sampling of additional down-gradient wells, additional sampling of landspread soils.
- Dump No. 1 (SAN1): Additional excavation of shallow material, sampling of sediment and porewater adjacent to the Skwentna River.

DEC tentatively agrees with the report recommendations that no further action is required at the following AOCs which will be evaluated for closure:

- Control Tower Fuel Spill (CTRC01)
- Pesticide Sprayer / Drum Ara (RTH6)

Thank you for your assistance in protecting human health and the environment, if you have any questions please feel free to contact me at (907) 334-5939 or via email at michael.hooper@alaska.gov.

Michael Hooper
Environmental Program Specialist

Enclosure: Final Response to Comments Table

Cc via email: Janice Wiegers, ADEC
Ted Wu, ADEC

DEC Comments on *Draft FAA Skwentna Post-Remedial Action Report* Dated May 2024
 Comments by Michael Hooper, Ted Wu

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Section 1.0 Introduction			
1	Pg 1-1; Section 1.1 Background	<p>What is FAA’s future plans for the remaining 39 acres of land owned in Skwentna following completion of remedial actions? For planning future usage it would be useful to describe which AOCs will transfer to which stakeholders.</p>	<p>Accept with clarification. The NDB Site is the only active site remaining on FAA land. The remaining sites are on CIRI-owned land with no land restrictions. The NDB site is primarily within the airport right-of-way, which will necessarily imply land use restrictions, regardless of future ownership. The future usage of the remaining FAA land has not yet been determined.</p> <p>The primary use of the 39 acres is for the location of a weather camera system, Remote Communications Outlet, and a rotating beacon light. The rotating beacon light is owned by the State of Alaska, Airports. The navigational aids located on this property do not require the entire 39 acres. However, when there was a flood that removed approximately 1000 feet of the east end of the runway, the FAA’s 39 acres was a valuable source of free fill material to the State of Alaska, Airports when they made repairs to the runway, extending the west end, and building a road around the northern side of the runway. Unless the State of Alaska, Airports requests to take ownership of the land, it is like to stay withdrawn by the FAA until such a time that seeing what the weather is doing, and</p>

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			communication with radios is replaced by a much more advanced technology.
Section 4.0 Field Activities			
2	Work Plan Deviations	Please add a section regarding deviations from the work plan, this section was included in the scope of work for the report in the appendix.	Accept. A new Section 4.15, Work Plan Deviations, will be added. The following bullets will be added, <ul style="list-style-type: none"> • Additional quantities of material were excavated from the Dump No. 1 site in 2022 following the discovery of previously unidentified buried material in 2021. ADEC was informed of the additional buried material and approval was received for the additional removal. • ISCO was applied to the SBRA AST (NDB3) site excavation base and sidewalls. This was documented in a workplan addendum and approval was received from ADEC before application.”
Section 5.0 Simultaneous Broadcast Range with Adcock Antenna SBRA AST (NDB3)			
3	Pg. 5-4; Section 5.10 Conclusions and Recommendations	DEC Agrees with the recommendation to continue groundwater monitoring at the SBRA AST AOC. The groundwater gradient should be surveyed	Accept.
Section 6.0 Control Tower Fuel Spill (CTRCO1)			
4	Pg. 6-2; Section 6.7 Conclusions and Recommendations	DEC agrees with the recommendation and will evaluate the CT Fuel Spill AOC for closure.	Accept.
Section 7.0 Non-Directional Beacon Tank Farm			
5	Pg 7-7; Section 7.7 Landspreading	Please add a table of landspread sample results	Accept. Landspread sample results will be added to Section 7.7. New tables 7-4 and 7-5 will be added.
6	Pg 7-7; Section 7.7 Landspreading	The landspread soils should be resampled periodically until there is statistical confidence in the concentration	Accept. Conclusions will be revised to recommend that landspread soils are

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		being below DEC cleanup levels for all COCs based on ISM replicate results.	resampled periodically until there is statistical confidence that the residual contaminant concentration are less than ADEC cleanup levels for all COCs based on ISM replicate results. The following will be added to the end of Section 7.14 and 12.3, <i>“The landspread at the NDB Tank Farm (NDB1) was sampled when established in 2021 and was sampled in 2023 to track remedial progress. The 2023 calculated 95% UCL for GRO identified a PSL exceedance remaining in landspread soil. It is recommended that landspread soils are resampled periodically until there is statistical confidence that the residual contaminant concentration is less than PSLs for all COCs based on ISM replicate results.”</i>
7	Figure 7-3 Well Placement	DEC recommends additional monitoring wells generally down-gradient of MW-08 and MW-09R to the north and east of each well to monitor contaminant migration, especially with groundwater conditions changing after application of ISCO.	Accept. Recommendations will be revised to recommend installation of additional monitoring wells downgradient of MW-08 and MW-09R to the east of each well. Please note that possible locations to install wells to the north are limited by the runway right of way and active runway utilities. The text will be revised as follows, <i>“To complete the remediation at the NDB Tank Farm (NDB1), it is recommended that groundwater be evaluated long term with the existing groundwater monitoring well network, and the addition of three wells to the east and north of MW-08 and MW-09.”</i>
8	Pg 7-15; Section 7.14 Conclusions	DEC generally agrees with recommendation for additional groundwater monitoring but additional wells should be added.	Accept. See response above.

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	and Recommendations Groundwater Monitoring		
9	Pg 7-15; Section 7.14 Conclusions and Recommendations Landspread Soils	The conclusions and recommendations section does not discuss the landspread. The last sampling event had too high of data variability for DEC to approve closure and unrestricted use of the landspread soil. Please revise section to add these details.	Accept. The conclusions and recommendations will be updated to include the following, <i>“The landspread at the NDB Tank Farm (NDB1) was sampled when established in 2021 and was sampled in 2023 to track remedial progress. The 2023 calculated 95% UCL for GRO identified a PSL exceedance remaining in landspread soil. It is recommended that landspread soils are resampled periodically until there is statistical confidence that the residual contaminant concentration is less than PSLs for all COCs based on ISM replicate results.”</i>
Section 8.0 AOC 4: Pesticide Sprayer / Drum Area (RTH6)			
10	Pg 8-3; Section 8.5 Conclusions and Recommendations	DEC agrees with the recommendation and will evaluate the Pesticide Sprayer / Drum Area AOC for closure.	Accept.
Section 9.0 AOC 5 Dump No. 1 (SAN1)			
11	Pg 9-6; Section 9.6 Groundwater Monitoring	Current monitoring wells do not capture groundwater from the known current and previous areas of soil contamination. DEC recommends additional monitoring wells closer to the riverbank bordering the reconstructed bank and east pesticide dig areas.	Clarification. Source area well MW-EX3R and MW-A6 are within 20 feet from the slough and are within previously impacted areas. Photos 58 and 59 in the photograph log show the proximity of MW-EX3R to the riverbank. If necessary, temporary wellpoints or porewater samples collected at the riverbank, or slough surface water samples would be a better

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			representation of water concentrations directly adjacent to the riverbank.
12	Pg 9-7; Section 9.8 Conceptual Site Model	<p><i>“Since there are no buildings at the site and no volatile compounds were detected in samples from Dump No. 1, the vapor intrusion pathway and outdoor air exposure pathway are both incomplete for current and future receptors.”</i></p> <p>What is the future planned usage of this land? Naphthalene is considered a volatile compound according to DEC’s Vapor Intrusion Guidance.</p>	<p>There are no known future land restrictions at this site, which is owned by CIRI. This paragraph will be rewritten as follows, <i>“There are currently no buildings at the site, however land use is not restricted and naphthalene was detected in samples from Dump No. 1. The vapor intrusion pathway is considered complete for future receptors and the outdoor air exposure pathway is considered potentially complete for current and future receptors.”</i></p> <p>The graphic and scoping forms were updated.</p>
13	Pg 9-8; Section 9.9 Ecological Risk Assessment	<p><i>“Additional investigation or active management is recommended to further understand and/or reduce these predicted unacceptable risks.”</i></p> <p>Does active management mean additional remedial actions such as excavation?</p> <p>Additional comments on the Ecological Risk Assessment are Provided at the end of this comment matrix</p>	<p>Accept. Additional investigation or active management includes the implementation of the proposed excavation of shallow soil and sampling of riverbank sediment and porewater. The following will be added to the end of the section and to section 12.5, <i>“Recommended additional investigation includes sampling sediment and porewater along the riverbank and implementing the shallow excavation at the debris mound.”</i></p>
14	Pg 9-8; Section 9.10 Conclusions and Recommendations	<p>DEC agrees with recommendations for additional excavation at the Debris Mound to remediate human health exceedances.</p> <p>For other dump exposure units with contamination remaining below the groundwater table additional down-gradient groundwater monitoring is recommended.</p>	<p>Accept. Please see response to comment regarding additional monitoring wells/water monitoring.</p>

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		See Comments on ERA at the end of this comment matrix. Because contamination has been shown to reach the groundwater interface near the river, DEC also recommends conducting sediment sampling at the riverbank as part of risk assessment.	Accept. Sediment sampling will be added to recommendations. The following will be added to the end of Section 9.10 and section 12.5, <i>“Recommended additional investigation includes sampling sediment and porewater along the riverbank and implementing the shallow excavation at the debris mound.”</i>
Section 12.0 Conclusions and Recommendations			
15	General	Please update this section to include DEC comments and recommendations given above.	Accept. Responses will be updated.
Appendix H: Conceptual Site Model			
16	Dump No. 1 (SAN1) CSM	Under the Ingestion of wild and farmed food #3 question, the “Are site contaminants located where they would have the potential to be taken up into biota?” box is not checked but one of the main concerns for the site is DDT and related metabolites can bioaccumulate into fish for consumption. Please revise.	Accept. The box will be checked.
Appendix J: Ecological Risk Assessment			
17	ERA Pg 2; Section 2.1.2 Current and Future Use	<p><i>“The Dump No. 1 Site is not maintained and is not anticipated to be developed for commercial, residential, or recreational use.”</i></p> <p>The statement is not consistent with dump No. 1 (SAN1) conceptual site model (CSM) in Appendix A for the human health receptors documented. Please ensure the information is consistent with the CSM.</p> <p>It is not clear why the human health pathway was removed. Section 9.8 CSM also noted, “Possible receptors are site visitors, trespassers, recreational users, subsistence harvesters,</p>	<p>Accept. Please note that Human Health Risk Assessment is beyond the scope of an ERA.</p> <p>The text will be revised to state that the Dump No. 1 Site has no land restrictions.</p>

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		construction workers, and residents (future only).”	
18	ERA Pg 5; Section 3.1 Selection of EUs for Risk Assessment	<p>The 2019 Risk Assessment Work Plan noted 0-2 feet bgs for soil and 0-6 feet bgs for plants and mammals, while the draft report used 0-2 and 0-3 feet bgs, respectively. Please document the reasoning for the deviation from the work plan or include the 0-6 feet bgs as noted in the workplan.</p>	<p>Acknowledged. The following text will be added as the second sentence in the third paragraph of Section 3.1: <i>“Samples collected from the upper 3 feet was selected because shallow soils better represent exposure for ecological receptors most likely to utilize the Site. Wildlife capable of digging burrows greater than 3 ft bgs (e.g., marmot) are not expected because there is no appropriate alpine habitat present (ADFG, 2024). The upper soil intervals are the most biologically active and therefore plant root systems are concentrated within this interval. Increasing the depth of soil will in effect dilute the potential risk effects from COPECs present in the upper 2-3 feet of soil.”</i></p>
19	ERA Pg 6; Section 3.1 Selection of EUs for Risk Assessment	<p>“No sediment samples were taken from within the slough” was noted in the draft report but the risk assessment work plan indicated screening of sediment (0-0.5 feet bgs) would be performed. The exposure area “Aquatic habitat of the adjacent Skwentna River – sediment and surface water” was also documented in the workplan.</p> <p>Given the migration from past erosion and proximity to the river bank the extent of the pesticide released into the sediments in the Skwentna River seem warranted. 18 AAC 75.335. Site characterization. (a) Before proceeding with site cleanup under the site cleanup rules, a responsible person shall characterize the extent of hazardous substance contamination at the site.</p>	<p>Accept with clarification. The riverbank was excavated to a level even with and within the slough area and sampled at the excavation base. This statement will be revised to state that sediment samples were collected from the excavation base along the edges of the slough within the potential area of aquatic habitat in the Reconstructed Bank, Western Pesticide Dig, and Eastern Pesticide Dig excavations.</p>

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20	ERA Pg 10; Section 4.2 Tier I SLERA	<p>The screening values provided in “Tables J-1 through J-3” as noted are truncated to DDT and related metabolites. Please include location of complete screening information with maximum residual concentration for contamination reported from the analytical methods.</p> <p>The workplan noted that PCBs were detected during 2010 investigation. Residual contamination reported in analytical methods in soil remaining on the site should be used.</p> <p>Tables J-1 through J-3 should footnote the location of the raw data used to generate the tables.</p>	<p>Accept with clarification. Please refer to Appendix E in the Main Report.</p> <p>A footnote will be added to J-1 through J-3 with location of raw data.</p>
21	ERA Pg 10; Section 4.2.1 Selection of Screening Levels for Soil	<p>One of the site-specific concerns was the potential for the bioaccumulative residual pesticide in soil to erode and migrate to a more sensitive pathway, which is the adjacent anadromous stream channel to the Skwentna river for consumption of the resource by anglers.</p> <p>The current extent of the pesticide that have already migrated to the sediment surface water body would also be a concern and was included as an exposure unit (EU) in the workplan (Aquatic habitat of the adjacent Skwentna River – sediment and surface water).</p>	<p>Accept with clarification. Please see the response to comment 19. The excavation was advanced into the slough to remove remaining impacted areas.</p>
22	ERA Pg 11; Section 4.2.3 Selection of Screening Levels for Groundwater Evaluated as Surface Water	<p>The surface water screening value should also include complete human health pathways for screening from EPA Human Health Water Quality Criteria.</p> <p>EPA National Recommended Human Health Water Quality Criteria for freshwater in</p>	<p>Clarification. The objective of the SLERA is to provide ecological risk characterization for historical releases related to the Dump No. 1 Site only. Therefore, screening levels relevant to ecological receptors were selected.</p> <p>No edits to the text have been made.</p>

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		<p>EPA Update of Human Health Ambient Water Quality Criteria: DDT June 2015 captured in the Table 2 below. The respective values are at a cancer risk of 1X10⁻⁶.</p> <p>Table 2. Summary of EPA's Previously Recommended (2002) and Updated (2015) Human Health Ambient Water Quality Criteria (AWQC) for DDT</p> <table border="1" data-bbox="579 448 1289 526"> <thead> <tr> <th></th> <th>2002 Human Health AWQC</th> <th>2015 Human Health AWQC</th> </tr> </thead> <tbody> <tr> <td>Water and Organism</td> <td>0.00022 µg/L</td> <td>0.000022 µg/L</td> </tr> <tr> <td>Organism Only</td> <td>0.00022 µg/L</td> <td>0.000022 µg/L</td> </tr> </tbody> </table>		2002 Human Health AWQC	2015 Human Health AWQC	Water and Organism	0.00022 µg/L	0.000022 µg/L	Organism Only	0.00022 µg/L	0.000022 µg/L	
	2002 Human Health AWQC	2015 Human Health AWQC										
Water and Organism	0.00022 µg/L	0.000022 µg/L										
Organism Only	0.00022 µg/L	0.000022 µg/L										
23	ERA Pg 15; Section 4.4.1 Ecological Effects Characterization	<p>The discussion of allometric scaling from cited literature was reviewed in EPA (2021) document, “<i>Allometric Scaling of Terrestrial Wildlife Oral Toxicity Measurements and Comparison of Ecological to Human Health Assessment Contexts.</i>” The EPA document noted the following, “allometric scaling models developed for both human and wildlife risk assessment are all based on acute toxicity data.” (An extended quote from this source can be found in Appendix B.) However, Allard et al. did not discuss the pharmacokinetic basis for allometric scaling of chronic toxicity in U.S. EPA (2011).” Additional detail regarding appropriateness on application are captured in the citation, thus not further discussed here in the comment.</p> <p>Allometric scaling would be considered in Step 3 of the Ecological Risk Assessment Guidance for Superfund (U.S. EPA, 1997). DEC Risk Assessment Procedures Manual (2018) is adopted in regulation by reference and shall be followed if setting an approved site-specific alternative cleanup level under 18 AAC 75.340 (f). If allometric scaling is considered burdensome relative to</p>	Accept. The text will be revised to “ <i>In the SLERA, selected TRVs will be based on the available test species that are most comparable to wildlife receptors. Allometric scaling to adjust toxic responses to wildlife receptors will only be performed as part of the refined SLERA and only in a situation where the ratio of wildlife receptor to test species body weights exceeds 15.</i> ”									

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		<p>value added, such scaling could be implemented when the ratio of body weights (assessment species/test species) exceeds a threshold ratio of 15 for application.</p> <p>References:</p> <ul style="list-style-type: none"> • U.S. EPA. (1997) Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments. Interim Final. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response • U.S. EPA. (2011) Recommended Use of Body Weight 3/4 as the Default Method in Derivation of the Oral Reference Dose. U.S. Environmental Protection Agency, Washington, D.C. • U.S. EPA (2021) Allometric Scaling of Terrestrial Wildlife Oral Toxicity Measurements and Comparison of Ecological to Human Health Assessment Contexts. U.S. Environmental Protection Agency, Cincinnati, OH. 	
24	ERA Pg 19; Section 4.6.1 Risk Estimation Approach	<p>Given the similar chemical, physical properties and toxicological endpoint of DDT and its metabolites would need to be summed for calculating a hazard index. The ecoSSL screening value from EPA is based on the summation of DDT and its metabolite. Please discuss and capture the information in the section.</p>	<p>Acknowledged. The following text will be added as Section 3.4: <i>“DDx’ represents the mixture of DDT and its metabolites, DDE and DDD, that may be present at the Dump No. 1 Site. It was calculated by summing the concentration of each metabolite. If the concentration of any metabolite was reported as ND, then the LOD was used in the summation.”</i></p>

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25	ERA Pg 20; Section 4.7; Ecological Risk Uncertainty Analysis	The statement on the elevated detection limit is generic and can apply to any site. Please document specific media and chemical(s) where the exceedance occurs and the magnitude of the difference to understand the level of site-specific uncertainty.	<p>Accept. See Section 5.1. HQs for individual sample locations are provided in Table J-4. This information provides details on occurrence and magnitude of exceedances. Additionally, refer to Section 4.7.1 for discussion of uncertainty related to distribution of DDT in Site soils.</p> <p>Calculated LODs for DDx will be removed.</p>
26	ERA Table J-1	The “Surface Soil Customary Use Threshold” would only apply to soil media when it’s above the other screening value. For DDD “USEPA Eco-SSL Mammal” 0.063 mg/kg would be selected screening level.	Acknowledged. The table has been revised.
27	ERA Table J-5	<p>The HQ can be round to 1 significant digit for the comparison in the table.</p> <p>If LOD from the analytical method is below the soil screening level the rational column can be indicated as BSL.</p>	<p>Acknowledged. HQs will be universally rounded to 1 significant digit.</p> <p>Acknowledged. The table will be revised to include indication where LOD is below screening level.</p>
28	ERA Table J-10	<p>Please document for exposure factors obtained from the literature if value is based off min, max, average or some statistical upper/ lower confidence. Please also include the range (min-max) for transparency into the variability of the value used.</p> <p>If there is large variability (e.g. home range can vary by sex, geography, and respective literature search) with the value provided based on the min/max of the source literature it is recommended that a 95% lower or upper confidence limit (the more conservative) be used to</p>	<p>Accept with clarification. Footnotes provide information on whether values represent mean, midpoint, minimum, etc. Ranges will be added.</p> <p>Exposure parameters selected were those were deemed most realistic based on quality of habitat, location of study, etc. Data sufficient to calculate 95% lower/upper confidence limits are generally not available.</p>

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		<p>ensure the reasonable maximum exposure is used in the assessment. Additional discussion should be provided in the report on the sensitivity of the parameters used in the refinement.</p> <p>Does the area of the dump 0.1 acres also factor in the other site-specific with remaining DDx residual concentrations for exposure?</p> <p>The assumption that the remaining locations visited by receptors contain no residual DDT or metabolites for exposure should be capture in the uncertainty section as the refinement is a sensitive parameter given the ratio of area use factor.</p>	<p>The objective of the SLERA is to provide ecological risk characterization for historical releases related to the Dump No. 1 Site only. The text has not been revised to include considerations of other parts of the site.</p>
29	ERA Table J-12	<p>The refinement in the table excluded the site-specific pathway from attachment J-6 (refined human health fish consumption pathway through residual contaminated sediment from attachment J-1). It is not clear how the pathway is getting addressed. If the pathway is relevant to the site, it should be discussed in the risk assessment report and conclusion section with the results provided from Table J-6.</p>	<p>Clarification. The objective of the SLERA is to provide ecological risk characterization for historical releases related to the Dump No. 1 Site only.</p>
		<i>End Comments</i>	