



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 10

1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
ENVIRONMENTAL
CLEANUP

SEP 30 2013

Brigadier General Mark D. Kelly
Commander
354th Fighter Wing
354 Broadway Street, Unit 19A
Eielson Air Force Base, Alaska 99702-1899

Dear General Kelly:

The U.S. Environmental Protection Agency Region 10 has reviewed the fourth CERCLA Five-Year Review report for all Operable Units within the Eielson Air Force Base Superfund site, Fairbanks, Alaska. As required by the EPA policy dated August 1, 2011, if the signed final FYR is not available by the due date of the FYR (in this case, September 30, 2013), the EPA can either concur or make its independent findings and recommendations based on its review of the unsigned draft final DF FYR.

In this instance, the EPA reviewed the DF FYR report received by the EPA on August 28, 2013. The EPA has reviewed the DF FYR report for technical adequacy, accuracy, and consistency with the National Contingency Plan and the EPA guidance. Based on our review, the EPA concurs with the Air Force's site wide protectiveness deferred determination identified in the DF FYR. The EPA, however, does not concur with the individual protectiveness statements for some of the sources areas and OUs and is presenting its independent findings on remedy protectiveness for these OUs, as well as recommendations for future actions at each OU. EPA's findings and recommendations are based on the review of the site's administrative records, the DF 2013 FYR, and other available site information, including the limited amount of data collected since the last 2008 Five Year Review, such as the Installation Wide Monitoring Program 2012 monitoring event.

In the DF FYR, the Air Force disclosed that it has either not fully implemented or had stopped implementing portions of the remedies for some of the OUs. The EPA and ADEC were aware that the remedy for Garrison Slough had not been fully implemented due to the discovery of munitions during the remedial action. But our review of the DF FYR identifies other portions of remedies at other OUs were either not implemented or discontinued without providing appropriate justification or documentation. In addition, review of site data, as well as new data provided by the Air Force, indicates contamination exists at some OUs that has not been addressed by the existing remedies and further investigation is needed to determine if this contamination warrants a cleanup action. At the very least, all these issues call into question the long term protectiveness of many of the remedies at the site. Reinstating monitoring and changes to the IC/LUC program have allowed the EPA to agree that the site remedies are protective in the short term, but much work needs to be done for the remedies to be protective in the long term. EPA's overall recommendation is to modify all the RI/FS's at all OUs, as detailed in the enclosure to fully characterize the nature and extent of the contamination at the site, conduct additional risk assessments, and evaluate remedial alternatives, leading to ROD amendments for the site OUs. The EPA acknowledges that the Air Force has reinstated groundwater monitoring on a site

wide basis, including installation of new monitoring wells, to correct the problems with ROD implementation in this area. We also acknowledge that the base has prepared a base wide draft IC/LUC work plan and has implemented improvements to its IC/LUC program to correct known deficiencies. We are, however, disappointed that the EPA had to go to dispute for over a year to get these IC/LUC deficiencies addressed.

Finally, the EPA and ADEC are disappointed with the quality of the draft final report. The report is over 2000 pages long, the issues and recommendations tables are unnecessarily repetitive, and reach conclusions that remedies are protective in the long term that aren't supported by the information presented in the document. This has required the EPA and our regulatory partner, ADEC, to spend considerable time and effort reviewing and commenting on the document.

EPA's site wide protectiveness statement follows. Findings, protectiveness determinations, and recommendations by OU are provided in the enclosed table. The recommendations included in this enclosure will be tracked by the EPA and sent to Congress. Due dates have been assigned to these recommendations.

EPA's Sitewide Protectiveness Statement

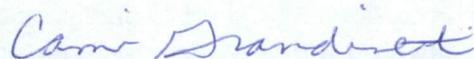
An overall protectiveness determination for the Eielson Air Force Base site cannot be made until further information is obtained, RI/FSS (including risk assessments) are completed, and additional remedial actions are implemented, as appropriate. The remedies at the site are protective of human health and the environment in the short term because potential exposure to contaminated soil and groundwater continues to be prevented by base IC/LUCs. For the remedies to remain protective in the long term, additional work must be undertaken to further characterize the nature and extent of contamination and to determine if the risks presented warrant a remedial action.

Consistent with EPA's August 1, 2011 memorandum "Program Priorities for Federal Facility Five-Year Reviews," the Five-Year Review Guidance Section 1.3.3 has been superseded and the future Five-Year Review dates will be based on the completion date for this review to assure that the due dates will not change if the reports are early or late. The due date for the next Five-Year Review is September 30, 2018.

The EPA is aware that the Air Force is working to correct the deficiencies found in the draft final document, however, it will take considerable effort to provide a well-written, succinct, quality document. The EPA expects its detailed comments on the DF FYR report will be fully addressed, including corrections to protectiveness statements, such that the final report can be approved by the EPA.

If you have any questions about this or would like to discuss in more detail, please contact Deb Yamamoto at (206) 553-7216 or by email at yamamoto.deb@epa.gov.

Sincerely,



Cami Grandinetti
Program Manager

Remedial Cleanup Program

Enclosure

cc: Mr. Bob Shirley, Air Force
Mr. Dave Beistel, AirForce
Ms. Deb Yamamoto, EPA
Mr. Aaron Lambert, EPA
Ms. Jackie Kramer, EPA
Mr. John Halverson, ADEC
Mr. Kim Deruyter, ADEC
Mr. Eric Breitenburger, ADEC

Table 1

Issues and Recommendations Identified in the draft final Fourth Five Year Review for Eielson Air Force Base, Fairbanks Alaska, as modified for CERCLIS

Operable Unit 1 The primary remedy components in the RODs for this OU are product skimming, bioventing/SVE, ground water monitoring, ICs, as well as supplemental soil and groundwater monitoring at Blair Lakes.						
Issue Category	Issue	Comments	Affects Protectiveness (Y/N)		Recommendation	Milestone Date
			Current	Future		
COC and COPC Monitoring	No groundwater monitoring was conducted between 2008 and 2012 although required by the OU 1 ROD. Supplemental soil sampling required by the ROD has not been performed at source areas SS50-52. Review of the original RI/FS indicates some source areas that were considered "no further action" (NFA) had COCs dropped from further investigation without proper foundation or documentation.	Groundwater monitoring resumed in 2012 at ST20 and ST48 showed that concentrations of contaminants were decreasing, but still far above MCLs. Monitoring showed the plumes are not well defined and confirmed additional COCs in groundwater, including the discovery of TCE above MCLs at ST49. Passive Soil Gas Sampling conducted in 2012 at SS50-52 detected elevated VOCs.	N	Y	<p>Modify the RI/FS for OU1 and conduct additional investigations, including, but not limited to, vapor intrusion and risk assessments. Fill in data gaps as identified during the Five Year Review (FYR) and monitoring conducted in 2012. Include in the RI/FS the results of COC audits and CSM updates, soil gas and VI investigations, including work conducted at source areas determined to be NFA in the ROD. The results of the RI/FS shall be included in the next Five Year Review. The schedule for primary and secondary documents must be consistent with the schedule in the Site Management Plan (SMP).</p> <p>Report results of COC audits and CSM Updates in the Five Year Review Addendum.</p>	September 2018
Remedy Performance	Data collected during the 2012 monitoring event indicated cleanup levels in groundwater still have not been achieved. Further, sampling results identified additional COCs in	Product skimming at ST20, ST48 and SS50-52 was successful in diminishing the thick layer of product and reducing the concentrations of contaminations in groundwater. Bioventing/SVE at	N	Y	As part of the modified RI/FS evaluate alternatives to address achieving ground water restoration goals in a reasonable timeframe. As appropriate, evaluate remedies for new COCs identified in various media.	September 2018

	soil and groundwater not considered for remedies in the original RODs.	ST20 and ST48 was successful in reducing groundwater contaminants concentrations. The DFFYR and 2012 monitoring, however, show groundwater cleanup levels still have not been achieved. Remedies in the RODs were not intended to address the additional COCs in soil, soil vapor and groundwater discovered during the 2012 monitoring event.				
Institutional Controls	The DFFYR acknowledge there were multiple deficiencies in the IC program at the base, including lack of maps documenting the extent of groundwater plumes. No IC s were required for ST49 but MCLs currently are exceeded in groundwater at this location.	As part of dispute resolution, the Air Force submitted a draft IC/LUC workplan to correct IC/LUC deficiencies, including preparation of new groundwater plume maps, and development of processes and procedures to prevent exposure to contaminants. An IC is in place to prohibit ingestion of groundwater in areas of contamination. No groundwater is being consumed in the vicinity of ST 49.	N	Y	Prepare ESD or ROD amendment to include ICs for groundwater at ST49. Submit final base wide IC/LUC plan per the IC/LUC settlement agreement, including a signed Fighter Wing Instruction for the entire base.	March 2015 March 2014
OU 1 Protectiveness Statement - EPA has determined that the remedy currently in place at OU1 is protective in the short term for groundwater because the Air Force has submitted an updated IC/LUC plan and has implemented practices and procedures that demonstrate ICs/LUCs are in place to prevent groundwater use and exposure. However, based on the 2012 data collected, it is unclear whether the remedy is protective for soil contact and vapor inhalation due to new contaminants that have been discovered. EPA's protectiveness determination is deferred until additional investigations have been conducted, including risk assessments, to determine if the current remedies are protective or additional actions are warranted.						

Operable Unit 2 The primary remedy components in the RODs for this OU are product skimming, bioventing/SVE, supplemental soil sampling, groundwater monitoring, ICs, and a TI waiver for lead at ST13 and DP26.

Issue Category	Issue	Comments	Affects Protectiveness (Y/N)		Recommendation	Milestone Date
			Current	Future		
COC and COPC Monitoring	No groundwater monitoring was conducted between 2008 and 2012. Monitoring in 2012 determined some contaminants still above MCLs, groundwater plumes are not defined, and data in some of the new wells indicate high levels of contamination. 2012 sampling confirmed additional COCs in groundwater above MCLs and these COCs were not addressed by ROD remedies.	Groundwater monitoring resumed in 2012 and showed that concentrations of contaminants were decreasing but remain above MCLs.	N	Y	<p>Modify the RI/FS for OU2 and conduct additional investigations, including, but not limited to, vapor intrusion and risk assessments. Fill in data gaps as identified during the Five Year Review (FYR) and 2012 monitoring event. Include in the RI/FS the results of COC audits and CSM updates, soil gas and VI investigations, and additional work at source areas determined to be NFA in the RODs. The results of the RI/FS shall be included in the next Five Year Review. The schedule for primary and secondary documents must be consistent with the schedule in the SMP.</p> <p>Report results of COC audits and CSM updates in the Five Year Review Addendum.</p>	<p>September 2018</p> <p>March 2015</p>
Remedy Performance	The groundwater cleanup levels have not been achieved. Remedy performance affected by extensive historical fuel spill discovered in 2012. Remedy for ST16 called for supplemental soil sampling but documentation can be found if this was ever conducted. Investigations in 2004 and 2012 show extensive fuel contamination in soil and groundwater near ST 16 that has not been fully delineated. A Phase 2 Source Evaluation	<p>Product skimming and bioventing at ST10/SS14, and ST13/DP26 were successful in diminishing the thick layer of product and reducing contaminants in groundwater, but groundwater remains above cleanup levels.</p> <p>The ST19 remedy required only ICs and groundwater monitoring but new information indicates there may be extensive fuel contamination in soil and groundwater beyond what was previously reported. Road oiling</p>	N	Y	In the modified RI/FS for this OU, evaluate alternatives to address achieving ground water restoration goals in a reasonable timeframe at ST10/SS14 and ST13/DP26. Conduct additional investigation for the new COCs identified in various media. Conduct additional soil sampling at ST16 as required by the ROD and include in the RI/FS. As part of the modified RI/FS, evaluate extent of fuel spill in soil and groundwater at ST 19 to determine if additional remediation is warranted. Include the sampling for PCB storage areas in the RI/FS.	September 2018

	work plan was developed for soil sampling at both PCB storage areas, but no results could be found.	sites that were NFA in the ROD were not addressed in the FYR but the Air Force has agreed they need further investigation for potential for PCB contamination. The two PCB storage areas need additional investigation to confirm whether there is a concern with contamination in the soil.				
Institutional Controls	The DFFYR acknowledge there were multiple deficiencies at source areas ST10/SS14, ST11, ST13/DP26, ST18, ST19, SS31, and LF05 including lack of maps documenting the extent of groundwater plumes. No IC requirements were required for ST11 and ST16 but MCLs currently are exceeded in groundwater at these locations.	As part of dispute resolution, the Air Force has submitted a draft IC/LUC workplan to correct IC/LUC deficiencies, including preparation of new groundwater plume maps, and development of processes and procedures to prevent exposure to contaminants. An IC is in place to prohibit ingestion of groundwater in areas of contamination. No groundwater is being consumed in the vicinity of ST11 and ST16.	N	Y	Prepare ESD or ROD amendment to include ICs for groundwater at ST11 and ST16. Submit final base wide IC/LUC plan per the ROD and IC/LUC settlement agreement, including a signed Fighter Wing Instruction for the entire base.	September 2014 March 2014
<p>OU 2 Protectiveness Statement - EPA has determined that the remedy currently in place at OU2 is protective in the short term for groundwater because the Air Force has submitted an updated IC/LUC plan and has implemented practices and procedures that demonstrate ICs/LUCs are in place to prevent groundwater use and exposure. However, based on the 2012 data collected, it is unclear whether the remedy is protective for soil contact and vapor inhalation due to new contaminants that have been discovered. EPA's protectiveness determination is deferred until additional investigations have been conducted, including risk assessments, to determine if the current remedies are protective or additional actions are warranted.</p>						

Operable Unit 3. The primary remedy components in the 1995 ROD included monitoring and ICs only at WP45/SS57, ST56 and SS61; active remediation at DP44 including SVE, ICs and monitoring; The 1998 ROD amendment changed the remedy at DP44 to monitoring and ICs only.

Issue Category	Issue	Comment	Affects Protectiveness (Y/N)		Recommendations	Milestone Date
COC/COPC Monitoring	Monitoring required under the ROD was not conducted between 2008 and 2012. Monitoring resumed in 2012 and data confirmed gaps exist in delineating the extent of the groundwater plumes at this OU. PSG sampling indicates elevated VOCs in soil gas. Sampling also indicates other COCs (e.g., PAHs) not identified in the ROD and ROD amendment have been found at this OU.	Additional work conducted at WP45/SS57 has delineated the groundwater plume but indicates that TCE in groundwater still exceeds MCLs. New contaminants found at some of the source areas indicate data gaps exist. A COC audit and CSM updates are underway. Additional work is necessary to fully characterize extent of contamination in soil, soil gas and groundwater at this OU to determine if additional remedial actions are warranted.	N	Y	The RI/FS for this OU was modified to conduct additional investigations at WP45/SS57. Expand the modified RI/FS for WP45/SS57 to include other source areas and conduct additional investigations, including VI, to fully characterize contamination. Include COC audit and CSM updates in the expanded RI/FS. Report results of the RI/FS for all source areas in the next FYR. Report results of COC audits and CSM updates in the Five Year Review Addendum.	September 2018 March 2015
Remedy Performance	Remedy was groundwater monitoring and ICs. These are discussed in other sections. 2008 Five Year Review recommended a TI waiver for groundwater at ST56.	Further evaluation determined that a TI waiver at this location is premature.	N	Y	Make a final determination in the RI/FS whether a TI waiver is necessary at ST56.	September 2018
Institutional Controls	The remedy required ICs for this OU. Various deficiencies in the IC/LUC program have been identified.	The Air Force has submitted a draft IC/LUC plan and implemented practices and procedures to correct deficiencies.	N	Y	Submit a final IC/LUC plan for the base, including a signed Fighter Wing Instruction.	March 2014

OU3 Protectiveness Statement EPA has determined that the remedy currently in place at OU3 is protective in the short term for groundwater because the Air Force has submitted an updated IC/LUC plan and has implemented practices and procedures that demonstrate ICs/LUCs are in place to prevent groundwater use and exposure. However, based on the 2012 data collected, it is unclear whether the remedy is protective for soil contact and vapor inhalation due to new contaminants that have been discovered. EPA's protectiveness determination is deferred until additional investigations have been conducted, including risk assessments, to determine if the current remedies are protective or additional actions are warranted.

Operable Unit 4 The primary remedy components identified ICs and monitoring at DP25, a cover and monitoring at SS35, and bioventing/SVE, monitoring and ICs at ST 58. The 1998 ROD amendment changes the remedy at SS35 to monitoring of surface water, sediments, and aquatic organisms only (no cover required) and monitoring, ICs and a TI waiver for lead in groundwater (no bioventing required) at ST58.

Issue Category	Issue	Comment	Affects Protectiveness (Y/N)		Recommendations	Milestone Date
COC/COPC Monitoring	Monitoring required in the ROD was not conducted between 2008 and 2012. Monitoring resumed in 2012 and data collected confirmed gaps exist in delineating the extent of the groundwater plumes at various source areas. PSG sampling indicates elevated VOCs in soil gas. Sampling also indicates other COCs not identified in the ROD and ROD amendment have been found at this OU.	A COC audit and CSM updates are underway. Additional work is necessary to fully characterize extent of contamination in soil, soil gas and groundwater at this OU to determine if additional remedial actions are warranted.	N	Y	Expand the modified RI/FS for WP45/SS57 to include other source areas and conduct additional investigations to fully characterize contamination in all media. Include the results of soil gas and VI investigations, the COC audit and CSM updates in the expanded RI/FS. Report results of the RI/FS in the next FYR. Report results of COC audits and CSM updates in the Five Year Review Addendum.	September 2018 March 2015
Remedy Performance	COCs at some OUs still exceed remediation goals.		N	Y	Evaluate the need for active treatment at some source areas to achieve groundwater remediation goals.	September 2018
Institutional Controls	The remedy required ICs at some of the source areas in this OU. Various deficiencies in the IC/LUC program have been identified. No ICs identified for SS35.	The Air Force has submitted a draft IC/LUC plan and implemented practices and procedures to correct deficiencies.	N	Y	Submit a final IC/LUC plan for the base, including a signed Fighter Wing Instruction. Evaluate SS35 for a ROD Amendment or ESD for ICs.	March 2014 September 2014

Operable Unit 4 Protectiveness Statement EPA has determined that the remedy currently in place at OU4 is protective in the short term for groundwater because the Air Force has submitted an updated IC/LUC plan and has implemented practices and procedures that demonstrate ICs/LUCs are in place to prevent groundwater use and exposure. However, based on the 2012 data collected, it is unclear whether the remedy is protective for soil contact and vapor inhalation due to new contaminants that have been discovered. EPA's protectiveness determination is deferred until additional investigations have been conducted, including risk assessments, to determine if the current remedies are protective or additional actions are warranted.

Operable Unit 5 The primary component of the 1995 remedy included a cover for LF03/FT09 for the portion of the land fill where disposal of waste occurred before 1980 and a RCRA cover for the portion of the landfill where disposal occurred after 1980 along with ICs and groundwater monitoring. The ROD amendment in 1998 modified the remedy for LF03/FT09 to a hybrid landfill closure.

Issue Category	Issue	Comment	Affects Protectiveness (Y/N)		Recommendations	Milestone Date
COC/COPC Monitoring	Monitoring required in the ROD was not conducted between 2008 and 2012. Monitoring resumed in 2012 and COPCs added to the monitoring program exceed MCLs and ADEC cleanup levels. Data gaps related to the nature and extent of contamination have been identified at various source areas.	A COC audit and CSM updates are underway. Additional work is necessary to fully characterize extent of contamination in soil, soil gas and groundwater at this OU to determine if additional remedial actions are warranted.	N	Y	Expand the modified RI/FS for WP45/SS57 to include OU5 source areas and conduct additional investigations to fully characterize contamination. Include the results of soil gas and VI investigations, the COC audit and CSM updates in the expanded RI/FS. Report results of the RI/FS in the next FYR.	September 2018
					Report results of COC audits and CSM updates in the Five Year Review Addendum.	March 2015
Remedy Performance	Landfill O&M Plan is not in place to detail how remedy is maintained.	The requirements of Title 18 Alaska Administrative Code (AAC) Section 60 have not been addressed and are an ARAR.	N	Y	Develop an O&M Plan, determine how many OU5 landfills need to be included in the plan, and determine compliance with Title 18 AAC 60.	June 2016
Institutional Controls	The remedy required ICs. Various deficiencies in the IC/LUC program have been identified.	The Air Force has submitted a draft IC/LUC plan and implemented practices and procedures to correct deficiencies.	N	Y	Submit a final IC/LUC plan for the base, including a signed Fighter Wing Instruction.	March 2014

Operable Unit 5 Protectiveness Statement EPA has determined that the remedy currently in place at OU5 is protective in the short term for groundwater because the Air Force has submitted an updated IC/LUC plan and has implemented practices and procedures that demonstrate ICs/LUCs are in place to prevent groundwater use and exposure. However, based on the 2012 data collected, it is unclear whether the remedy is protective for soil contact and vapor inhalation due to new contaminants that have been discovered. EPA's protectiveness determination is deferred until additional investigations have been conducted, including risk assessments, to determine if the current remedies are protective or additional actions are warranted.

Operable Unit 6 The remedy in the 1994 ROD was monitoring and institutional controls for a single source area, WP38.						
Issue Category	Issue	Comment	Affects Protectiveness (Y/N)		Recommendations	Milestone Date
COC/COPC Monitoring	Monitoring at this OU was discontinued in 2004 and no documentation could be found to justify this decision. Groundwater monitoring resumed in 2012 and groundwater contamination exceeds the MCL. Data collected in 2012 demonstrated that the horizontal extent of the groundwater contamination at WP38 is not well defined. PSG sampling indicates elevated VOCs in soil gas.	The 2008 FYR recommended the VI pathway be investigated. This work is just now beginning.	N	Y	Modify the RI/FS for OU6 and conduct additional investigations, including, but not limited to, vapor intrusion and risk assessments. Fill in data gaps as identified during the Five Year Review (FYR) and 2012 monitoring event. Include in the RI/FS the results of COC audits and CSM updates, soil gas and VI investigations, and additional work at source areas determined to be NFA in the RODs. The results of the RI/FS shall be included in the next Five Year Review. The schedule for primary and secondary documents must be consistent with the schedule in the SMP. Report results of COC audits and CSM updates in the Five Year Review Addendum.	September 2018 March 2015
Remedy Performance	Although concentrations of contaminants have decreased, remediation goals in groundwater have not been achieved.	The 2008 FYR recommended the Air Force evaluate applicable and emerging technologies to reduce the time to reach remedial goals in groundwater.	N	Y	The review of technologies is complete. Complete follow on work in the form of a feasibility study to evaluate a range of alternatives for this OU. Include this work in the RI/FS for the OU.	September 2018
Institutional Controls	The remedy required ICs for this OU. Various deficiencies in the IC/LUC program have been identified, such as failure to notify the regulatory agencies of a land use change.	The Air Force has submitted a draft IC/LUC plan and implemented practices and procedures to correct deficiencies.	N	Y	Submit a final IC/LUC plan for the base, including a signed Fighter Wing Instruction.	March 2014
Operable Unit 6 Protectiveness Statement EPA has determined that remedy currently in place at OU 6 is protective in the short term for groundwater because the Air Force submitted an updated IC/LUC plan and has implemented practices and procedures that demonstrate ICs/LUCs are in place to prevent groundwater use and exposure. However, based on the 2012 data collected, it is unclear whether the horizontal and vertical extent of the plume is known, and it is unclear whether the remedy is protective for soil contact and vapor inhalation due to new contaminants that have been discovered. EPA's protectiveness determination is deferred until additional investigations have been conducted, including risk assessments, to determine if the current remedies are protective or additional actions are warranted.						

Site Wide Operable Unit The remedy for this OU is limited to Source Area SS67, a portion of Garrison Slough and a nearby trench. The primary components of the remedy include excavation of contaminated soils and sediments, engineering controls, ICs and monitoring.

Issue Category	Issue	Comment	Affects Protectiveness (Y/N)		Recommendations	Milestone Date
COC/COPC Monitoring	No monitoring was conducted from 2001 to 2007. 2008 sampling detected a PCB hotspot at 20 times the RAO. New information indicates other potential sources of PCBs may exist.	The 2008 FYR deferred protectiveness until more information was collected, including reevaluating risk assessment exposure assumptions, investigating the possible of other sources, and evaluating other remedies. Due to slow progress in conducting this work, in 2011 EPA requested the Air Force to modify the RI/FS for the sitewide OU and submit a schedule for primary and secondary documents	N	Y	Complete the modified RI/FS for Garrison Slough, including: conducting additional investigations into other potential sources of contamination; sampling of fish tissue to determine trends; sampling of sediments throughout the length of Garrison Slough; developing a revised risk assessment and assessing the need for further action, including completion of sediment removal in the Slough. Include in the RI/FS the results of the COC audit and CSM updates for potential sources areas, including SS62. Report results of COC audits and CSM updates in the Five Year Review Addendum.	September 2018 March 2015
Remedy Performance	The excavation of soil from a portion of the slough was not completed due to the discovery of ordnance. Fish tissue RAOs have not been achieved.	Ordnance was removed, but the Air Force did not complete the excavation of contaminated soils in the Slough.	N	Y	Evaluate remedial alternatives in the FS, including completion of contaminated sediment removal required in the 1996 ROD.	September 2018
Institutional Controls	ICs to prevent fish consumption have been implemented. Various deficiencies in the IC/LUC program have been identified. Additional ICs on soil may be necessary at source areas to Garrison Slough.	The Air Force has submitted a draft IC/LUC plan to correct deficiencies.	N	Y	Submit a final IC/LUC plan for the base, including a signed Fighter Wing Instruction. Provide additional ICs for source areas as necessary.	March 2014 September 2018

Sitewide Operable Unit Protectiveness Statement EPA has determined that the remedy currently in place at the Sitewide Operable Unit is protective in the short term because the Air Force has implemented ICs to prevent fish consumption and engineering controls to prevent fish passage. However, RAOs for fish tissue have not been achieved, and there is a need to collect additional data throughout the entire Slough. This data is needed to determine if additional sources exist and to determine whether additional action to achieve RAOs is needed; ICs for source areas to Garrison Slough may be needed, and these concerns affect the protectiveness of the remedy over the long term. EPA's protectiveness determination is deferred until the modified RI/FS is completed, and a determination has been made on the need for additional action.

Acronyms:

COC – Contaminant of Concern

COPC – Contaminant of Potential Concern

CSM – Conceptual Site Model

DFFYR – Draft Final Five Year Review

ESD – Explanation of Significant Difference

FRG – final remediation goal

IC /LUC – Institutional Control/Land Use Control

MCL – Maximum Contaminant Level

O&M – Operation and Maintenance

OU - Operable Unit

NFA – No further Action

PCB – polychlorinated biphenyl

PSG – passive soil gas sampling

RAO – Remedial Action Objective

RCRA – Resource Conservation and Recovery Act

RI/FS – Remedial Investigation/Feasibility Study

ROD – Record of Decision

SVE – Soil Vapor Extraction

TCE – Trichloroethylene

TI – Technical Impracticability

VOC – Volatile Organic Compound