

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 24 November 2021.

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Seattle District, Ravensdale LLC, NWS-2021-919.
Name of water being evaluated on this JD form: Trench E

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Washington County: King City: Ravensdale

Center coordinates of site (lat/long in degree decimal format): Lat: 47.3398 N, Long: -121.978941 W

Universal Transverse Mercator: _____

Name of nearest waterbody: Ravensdale Creek.

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: N/A.

Name of watershed or Hydrologic Unit Code (HUC): 17110013 Duwamish, WA.

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc.) are associated with this action and are recorded on a different JD form. List other JDs: _____

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date: 24 November 2021.

Field Determination. Date(s): _____.

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain: _____.

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are no** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: _____ linear feet _____ width (ft) and/or _____ acres.

Wetlands: _____ acres.

c. Limits (boundaries) of jurisdiction based on: **Pick List and **Pick List****

Elevation of established OHWM (if known): _____.

2. Non-regulated waters/wetlands (check if applicable):³

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: **Trench E is a strip coal mine excavation that is part of a reclamation plan and is therefore considered active and is a preamble non-water of the U.S. See Section I.V.B. for additional information.**

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW

Identify TNW: _____.

Summarize rationale supporting determination: _____.

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": _____.

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both.

If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:

Watershed size: _____ **Pick List**

Drainage area: _____ **Pick List**

Average annual rainfall: _____ inches

Average annual snowfall: _____ inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Project waters are **Pick List** aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: _____.

Identify flow route to TNW⁵: _____.

Tributary stream order, if known: _____.

(b) General Tributary Characteristics (check all that apply):

Tributary is: Natural

Artificial (man-made). Explain: _____.

Manipulated (man-altered). Explain: _____.

Tributary properties with respect to top of bank (estimate):

Average width: _____ feet

Average depth: _____ feet

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Average side slopes: **Pick List**.

Primary tributary substrate composition (check all that apply):

- | | | |
|---|--|-----------------------------------|
| <input type="checkbox"/> Silts | <input type="checkbox"/> Sands | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles | <input type="checkbox"/> Gravel | <input type="checkbox"/> Muck |
| <input type="checkbox"/> Bedrock | <input type="checkbox"/> Vegetation. Type/% cover: _____ | |
| <input type="checkbox"/> Other. Explain: _____. | | |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: _____.

Presence of run/riffle/pool complexes. Explain: _____.

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope): _____ %

(c) Flow:

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime: _____.

Other information on duration and volume: _____.

Surface flow is: **Pick List**. Characteristics: _____.

Subsurface flow: **Pick List**. Explain findings: _____.

Dye (or other) test performed: _____.

Tributary has (check all that apply):

- | | |
|---|---|
| <input type="checkbox"/> Bed and banks | |
| <input type="checkbox"/> OHWM ⁶ (check all indicators that apply): | |
| <input type="checkbox"/> clear, natural line impressed on the bank | <input type="checkbox"/> the presence of litter and debris |
| <input type="checkbox"/> changes in the character of soil | <input type="checkbox"/> destruction of terrestrial vegetation |
| <input type="checkbox"/> shelving | <input type="checkbox"/> the presence of wrack line |
| <input type="checkbox"/> vegetation matted down, bent, or absent | <input type="checkbox"/> sediment sorting |
| <input type="checkbox"/> leaf litter disturbed or washed away | <input type="checkbox"/> scour |
| <input type="checkbox"/> sediment deposition | <input type="checkbox"/> multiple observed or predicted flow events |
| <input type="checkbox"/> water staining | <input type="checkbox"/> abrupt change in plant community |
| <input type="checkbox"/> other (list): _____ | |
| <input type="checkbox"/> Discontinuous OHWM. ⁷ Explain: _____. | |

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

- | | |
|--|--|
| <input type="checkbox"/> High Tide Line indicated by: | <input type="checkbox"/> Mean High Water Mark indicated by: |
| <input type="checkbox"/> oil or scum line along shore objects | <input type="checkbox"/> survey to available datum; |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings; |
| <input type="checkbox"/> physical markings/characteristics | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges | |
| <input type="checkbox"/> other (list): _____ | |

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: _____.

Identify specific pollutants, if known: _____.

(iv) **Biological Characteristics. Channel supports (check all that apply):**

- | |
|--|
| <input type="checkbox"/> Riparian corridor. Characteristics (type, average width): _____. |
| <input type="checkbox"/> Wetland fringe. Characteristics: _____. |
| <input type="checkbox"/> Habitat for: |
| <input type="checkbox"/> Federally Listed species. Explain findings: _____. |
| <input type="checkbox"/> Fish/spawn areas. Explain findings: _____. |
| <input type="checkbox"/> Other environmentally-sensitive species. Explain findings: _____. |
| <input type="checkbox"/> Aquatic/wildlife diversity. Explain findings: _____. |

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: _____ acres

Wetland type. Explain: _____.

Wetland quality. Explain: _____.

Project wetlands cross or serve as state boundaries. Explain: _____.

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: _____.

Surface flow is: **Pick List**

Characteristics: _____.

Subsurface flow: **Pick List**. Explain findings: _____.

Dye (or other) test performed: _____.

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain: _____.

Ecological connection. Explain: _____.

Separated by berm/barrier. Explain: _____.

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: _____.

Identify specific pollutants, if known: _____.

(iii) Biological Characteristics. Wetland supports (check all that apply):

Riparian buffer. Characteristics (type, average width): _____.

Vegetation type/percent cover. Explain: _____.

Habitat for:

Federally Listed species. Explain findings: _____.

Fish/spawn areas. Explain findings: _____.

Other environmentally-sensitive species. Explain findings: _____.

Aquatic/wildlife diversity. Explain findings: _____.

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately (_____) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)

Size (in acres)

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed: _____.

C. SIGNIFICANT NEXUS DETERMINATION

1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: _____.

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: _____.
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: _____.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

- TNWs: _____ linear feet _____ width (ft), or _____ acres.
 Wetlands adjacent to TNWs: _____ acres.

2. **RPWs that flow directly or indirectly into TNWs.**

- Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide rationale indicating that tributary flows perennial: _____.
- Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: _____.

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: _____ linear feet _____ width (ft).
 Other non-wetland waters: _____ acres.

Identify type(s) of waters: _____.

3. **Non-RPWs⁸ that flow directly or indirectly into TNWs.**

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: _____ linear feet _____ width (ft).
 Other non-wetland waters: _____ acres.

Identify type(s) of waters: _____.

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
 Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: _____
- Wetlands directly abutting an RPW where tributaries typically flow “seasonally.” Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: _____

Provide acreage estimates for jurisdictional wetlands in the review area: _____ acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: _____ acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: _____ acres.

7. **Impoundments of jurisdictional waters.⁹**

⁸See Footnote # 3.

⁹To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from “waters of the U.S.,” or
- Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
- Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
- from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- which are or could be used for industrial purposes by industries in interstate commerce.
- Interstate isolated waters. Explain: _____.
- Other factors. Explain: _____.

Identify water body and summarize rationale supporting determination: _____

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: _____ linear feet _____ width (ft).
- Other non-wetland waters: _____ acres.
Identify type(s) of waters: _____.
- Wetlands: _____ acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 - Prior to the Jan 2001 Supreme Court decision in “*SWANCC*,” the review area would have been regulated based solely on the “Migratory Bird Rule” (MBR).
- Waters do not meet the “Significant Nexus” standard, where such a finding is required for jurisdiction. Explain: _____.
- Other: (explain, if not covered above): **Trench E is a preamble non-water of the U.S.**

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): _____ linear feet _____ width (ft).
- Lakes/ponds: _____ acres.
- Other non-wetland waters: _____ acres. List type of aquatic resource: _____.
- Wetlands: _____ acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the “Significant Nexus” standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): _____ linear feet _____ width (ft).
- Lakes/ponds: _____ acres.
- Other non-wetland waters: _____ acres. List type of aquatic resource: _____.
- Wetlands: _____ acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Trench E Reclamation and Restoration Wetland, Aquatic Area, and Fish and Wildlife Habitat Assessment dated 17 November 2020: King County Sensitive Areas Map (A1), USFWS National Wetland Inventory Map (A2), DNR Stream Typing Map (A3), WDFW SalmonScape Map (A4), WDFW Priority Habitat and Species Map (A5), and NRCS Soil Survey (A6).
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: _____.
- Corps navigable waters’ study: The waterbody is on the Section 10 Navigable Waterway List for Seattle District.

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

- U.S. Geological Survey Hydrologic Atlas: _____.
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Cumberland WA 1953 (HTMC, 1976 ed.) Scale 1:24000; Wenatchee WA 1957 (HTMC 1973 ed.) Scale 1:250000; Snoqualmie Pass WA 1975 (HTMC, 1977 ed.) Scale 1:100000
- USDA Natural Resources Conservation Service Soil Survey. Citation: _____.
- National wetlands inventory map(s). Cite name: NWI Map for subject property accessed November 2021.
- State/Local wetland inventory map(s): _____
- FEMA/FIRM maps: _____.
- 100-year Floodplain Elevation is: _____ (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): Historic Aerial Imagery accessed via NETROnline, November 2021; Aerial Imagery accessed via Google Earth, November 2021
or Other (Name & Date): _____.
- Previous determination(s). File no. and date of response letter: _____.
- Applicable/supporting case law: _____.
- Applicable/supporting scientific literature: _____.
- Other information (please specify): _____.

B. ADDITIONAL COMMENTS TO SUPPORT JD:

Trench E is a water filled depression created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel. Trench E is part of a reclamation plan and is therefore considered active and not abandoned. Therefore, Trench E is a pre-emptive non-water of the U.S.

Trench E is a linear, 100-foot deep strip coal mine excavation that is located within the high-voltage transmission line corridor on King County Tax Parcel Number 0121069001. Trench E is surrounded by artificially created (mined) steep slopes and cliffs. The bottom of Trench E (approximately 0.25 acre) is unvegetated and artificially holds water year-round due to the deep nature of the excavation to the underlying bedrock and the lack of any outlet. Along the edges of the permanently-flooded portion of Trench E, vegetation is dominated by Himalayan blackberry, with lesser amounts of big-leaf maple, Scotch broom, black cottonwood, willow species, and reed canarygrass. Two representative data plots were excavated within Trench E to document the non-wetland conditions within the excavated trench. Based on the topography (closed depression) and geology (non-permeable bedrock) of Trench E, no surface or groundwater inflow or outflow occurs. Based on a review of the WDFW SalmonScape mapping tool, EPA WATERS Layer accessed via Google Earth, and King County iMap, there are no natural or artificial surface water features that would allow for a hydrologic connection between Trench E and a potential water of the U.S. The Icicle Creek Engineers study, which was completed by a Licensed Engineering Geologist and Licensed Hydrogeologist, concluded that Trench E is an excavated, closed depression. Trench E does not receive hydrology from surface water or groundwater, nor does outflow from Trench E occur. Based on a review of historic topographic maps dating back to 1913, there were no natural waterbodies located within the review area historically. Therefore, there is no evidence to suggest that Trench E is an impoundment of jurisdictional water.

A review of USGS topographic maps from 1953, 1957, and 1975 and historical aerial images from 1936, 1952, and 1964 indicates that Trench E was artificially mined from a non-wetland site commencing in the mid-1940s. The aerial image from 1936 was taken prior to the strip mining of Trench E and shows that, prior to excavation, the Trench E area was uniformly forested and indiscernible from the surrounding upland forest. No indications of potential wetlands or aquatic areas such as surface water, wetness signatures, riparian areas, plant community transitions, deciduous patches of forest, or unvegetated concave surfaces are observable in the 1936 photograph at the location of Trench E. Not until mining actions later commenced actions, evidenced in the 1952 and 1964 aerials, can the Trench E area be distinguished from the surrounding upland environment. The 1952 and 1964 aerial photographs clearly document the artificial nature of the deep excavation along the coal seam within Trench E. In the 1960s, excavation was completed.

Water quality data collected in Trench E in August 2020 is consistent with an artificial coal mine pit. The existing, degraded water quality conditions represent stagnant surface water in an open strip mine that is not capable of maintaining native aquatic life per established water quality criteria. Extensive algal mats were also observed in the pit, indicative that even aquatic insect and amphibian use of the site are likely limited to non-existent. The preponderance of evidence supports the finding that the degraded water quality conditions present in Trench E result in minimal habitat value to aquatic organisms. Furthermore, the mine pit may act as a habitat sink due to a lack of sufficient dissolved oxygen and other water quality degradations.