

Appendix H

**Responses to Written and Oral Comments
on the Draft SEIS**

Response

IV. THE SEIS DEMONSTRATES EPA’S FAILURE TO MEANINGFULLY REGULATE TECK COMINCO’S DISCHARGES OR ENFORCE THE DISCHARGE LIMITATIONS IMPOSED ON THE MINE.

7.041 The SEIS demonstrates EPA’s disingenuous attempts at regulating Teck Cominco, indicating a continued collusion with Teck Cominco. This is repeatedly demonstrated throughout the SEIS, and renders the SEIS legally inadequate, as demonstrated by the following sections:

7.042 Section 2.7: EPA’s preferred alternative is Alternative B, the choice of which the EPA attributes to its inability to require the construction of the concentrate pipeline or wastewater discharge pipeline to the Chukchi Sea (Alternative C, the environmentally preferable alternative). This is false. While the EPA cannot enforce the terms of the consent decree (which would involve building the pipeline in Alternative D), the NPDES permit could limit the right of the Red Dog Mine to expand to a scenario that involves discharging treated effluent into the Chukchi Sea, instead of through Outfall 001. Alternatively, it could make discharging into the Chukchi Sea the easier alternative to implement. The SEIS’s conclusory statement is especially egregious because Teck Cominco has already agreed to build the effluent pipeline under the terms of the consent decree. EPA is essentially creating an easy means for Teck Cominco to escape its undertaking under that agreement.

7.043 Section 3.5: The section on water resources is quite convoluted and it is difficult to believe that this is not intentional, making it as difficult as possible for the public to evaluate baseline conditions and anticipated water quality impacts. The quality of the water, and the effect that it has on the health of aquatic life, wildlife and humans is one of the most controversial issues related to the mine expansion, which may be the reason that EPA is reluctant to address it directly. In particular, Tables 3.5-6 and 3.5-7 are extremely difficult to understand, and understanding them is critical to gaining a clear understanding of the water quality at the mine. Additionally, on p. 3-62, the SEIS describes all median values of the Wulik River water quality as falling below the applicable WQS for the growth and propagation of fish, and other animals, but notes that at certain times water quality values exceed the lowest WQS, both upstream and downstream. First, whether the values are exceeded upstream is irrelevant, unless it can be shown that the values that exceed the WQS downstream are a direct result of the excesses upstream, and not a result of mining activities. 7.045 Second, the SEIS does not discuss the situation where water quality values exceed the lowest WQS in any more detail, creating the impression that water quality is better than it actually is. The public should be provided with information on which metals exceed the WQS, by how much, how often, for how long, and where. This information is especially important since it may affect the health and propagation of aquatic and wildlife, as well as the health of the local residents who subsist on those animals.

7.046 Section 3.5: Table 3.5-11 presents data on the projected discharge quality and instream water quality for Alternative A. The Table shows the projected discharge from Stations 151 and 150, but not from Station 160, which has the most stringent TDS standard (500 mg/L as opposed to 1000mg/L and 1500 mg/L).

Comment ID: 7.041

Response

The SEIS is not legally inadequate as demonstrated in the responses to the individual issues provided below.

Comment ID: 7.042

Response

The commenter is correct that EPA cannot enforce the terms of the Consent Decree. Teck Cominco applied for reissuance of its NPDES permit for continued discharge to Red Dog Creek. This would include proposed discharges associated with the Aqaluk Extension. EPA’s authority is limited to reissuing the permit or denying the application for reissuance. Since the SEIS analysis demonstrates that Teck can meet the limits in the reissued permit, we have no reason to deny reissuance of the Red Dog Creek discharge permit. The ROD will present the rationale for EPA’s decision to reissue the NPDES permit for the discharge to Red Dog Creek. There is nothing, however, in this decision that would preclude construction of the pipeline as envisioned in the Consent Decree. EPA does not have the authority alone to require construction of a pipeline and the marine discharge. This would necessitate permits and approvals from other government agencies including the National Park Service, Corps of Engineers, State of Alaska, and the Northwest Arctic Borough. If Teck had submitted to EPA a NPDES permit application or request for modification to replace the Red Dog Creek discharge with the Chukchi Sea discharge, EPA would have identified the marine discharge as the proposed action in the SEIS and issued a draft permit for public notice. However, Teck has not yet submitted such a permit application. EPA is in no way creating a means for Teck to escape its Consent Decree obligations. Rather EPA has evaluated the marine discharge in the SEIS and identified it as a component of the environmentally preferable alternative. In addition EPA encouraged Teck to apply for a marine discharge so that it could be identified as the proposed action in this SEIS. Teck instead decided to hold to the terms of the Consent Decree schedule under which they would apply for the marine discharge only after the NPDES permit for Red Dog Creek is issued and effective (i.e., not appealed or appeals resolved).

Comment ID: 7.043

Response

EPA believes the potential effects are clearly defined, including in the Water Quality Summary (Section 3.5.4). This includes a discussion of compliance with drinking water and aquatic life WQS. Effects on wildlife, aquatic life, and human health are specifically discussed in Sections 3.9, 3.10, and 3.13 respectively. EPA has made no attempt to avoid describing any of the potential impacts of the proposed action or alternatives.

Comment ID: 7.044

Response

Table 3.5-6 shows applicable WQS and Table 3.5-7 shows results of historic sampling programs carried out for various area streams and important mine outfalls. Sampling stations are depicted on Figures 3.15 and 3.16. Data in Table 3.5-7 can be compared to the data in Table 3.5-6 to evaluate relative degrees of water quality at specific stations and locations both associated with the mine, as well as stations away from the mine’s influence with respect to WQS. Important highlights of these comparisons are presented in the text and these tables are used to illustrate specific points. The comment did not specifically state what was unclear about these tables.

Comment ID: 7.045

Response

The text appropriately describes the data observed from the nine creeks that are crossed by the DMTS road. A majority of samples for all stations are below the most stringent WQS (i.e. for aquatic life) with some samples showing elevated levels that exceed WQS. As discussed in the text, data showing exceedances do not show any discernible trends, either spatially (i.e. above versus below the road) or temporally (over time). EPA is recommending continued monitoring of the creeks to determine if there are exceedances of WQS in the future that may be due to the DMTS.

Comment ID: 7.046

Response

Tables 3.5-11, 3.5-12, and 3.5-14 are used to illustrate relative differences in expected water quality at various stations immediately below the discharge. For all alternatives the projected TDS concentrations at Station 150 on Ikalukrok Creek are well below 500 milligrams per liter. Station 160 is well down stream of Station 150 on Ikalukrok Creek. As a worst-case scenario, the TDS concentration at Station 160 would be expected to be the same or lower than the TDS concentration at Station 150.

Response

Over the period 1998 through at least 2007 (we have not yet analyzed 2008 data), Teck Cominco committed thousands of permit violations of its NPDES mine permit. These permit violations are documented in Teck Cominco's DMRs from the period, which are filed monthly with EPA and are incorporated here by reference.

Some of these violations were the subject of the recently settled lawsuit by residents of Kivalina against Teck Cominco, *Adams v. Teck Cominco*, in the federal District Court of Alaska; see Exhibits 1 and 2. Many more are violations that took place wholly in the past, and thus are not enforceable by the public and thus were not included in the *Adams* law suit or an earlier suit by the Kivalina Relocation Planning Committee. EPA's demonstrated lack of commitment to enforcing the permit conditions it imposes should be factored in to the new permit, and this is a central reason why the bio-monitoring and ambient monitoring provisions should be retained in the federal NPDES permit so that they can be enforced in federal court by members of the affected public like residents of Kivalina.

The District Court entered liability against Teck Cominco for hundreds of Clean Water Act violations in the *Adams v. Teck Cominco* case. In 2006, Judge Sedwick granted summary judgment to the plaintiffs on 621 violations, establishing liability against Teck Cominco for illegal discharges of total dissolved solids (TDS) (618 violations) and total suspended solids (1 violation), and two illegal discharges to the tundra. See Exhibit 20. On May 6, 2008, Judge Sedwick entered liability against Teck Cominco on 161 further TDS violations; 34 illegal discharges of cyanide in excess of permit limits; and 11 whole effluent toxicity (WET) violations; see Exhibit 21. Thus, before the case was settled, the Court in *Adams v. Teck Cominco* entered liability against Teck Cominco for 824 violations of its federal Clean Water Act permits, including 776 daily total dissolved solids violations, 34 daily cyanide violations, 11 daily whole effluent toxicity violations at the Red Dog Mine, and two violations for unpermitted discharges to the tundra and one total suspended solids violation at the Port Site. The EPA did nothing to enforce these permit conditions, and in fact actively impeded the plaintiffs in the suit by relaxing Teck Cominco's permit conditions during the pendency of the suit. The current permit must include an easier enforcement mechanism, and EPA must also enforce its own permit.

The violations documented in the *Adams v. Teck Cominco* suit are in addition to the many violations admitted by Teck Cominco in the regular Compliance Orders by Consent it entered into with the EPA from 1998 on, and in the case *U.S. v. Cominco Alaska*; see CRPE Exhibit 26.

Although EPA has all of Teck Cominco's DMRs filed under the 1998 permit, and we incorporate them by reference here to document the repeat violations, those DMRs only paint part of the picture of Teck Cominco's refusal to abide by federal law and its permit conditions – and, sadly, of EPA's complete refusal to enforce any of the federal laws or permit conditions applicable to the facility. This picture is more fully found in Teck Cominco's own internal compilations of its violations of various permits, which are attached as CRPE Exhibits 3 through 13. These internal Teck Cominco reports – Quarterly Reports from 1998-2005, Property Summaries from 1998-2001, Monthly Operating Reports for 2002, and Compliance Reports from 2003-2005 – show, in one place,

Comment ID: 7.095

Response

The pipelines would be designed with leak detection systems. These systems work well with larger leaks and failures and can automatically shut the pipelines down in the event of a problem. Smaller leaks are typically detected visually and a visual monitoring program for the length of the pipelines would need to be conducted daily. The pipeline bench (berm) would be built to minimize the amount of movement (i.e., settling) that would be expected to occur. Each of the pipelines would be exposed to high pressures and would be built mostly (the wastewater pipeline) or entirely (concentrate and diesel pipelines) of steel. As noted in Section 3.4.3.3 in the final SEIS, an engineering study would need to be used to identify the amount of movement the pipelines may experience that could be combined with the internal pressures that they would need to withstand to ultimately specify the details of each individual pipeline. This engineering study is included as a mitigation measure in Table 2.5-1. While the occurrence of a break or leak is not impossible, a properly-designed pipeline would likely withstand any ground movement would be noticed and corrective actions taken before a break or leak would occur.

Comment ID: 7.096

Response

The socioeconomic aspects of developing the Aqqaq Deposit are presented in Section 3.17. Individual project costs are unnecessary to undertake the analysis and generally considered confidential business information.

Comment ID: 7.097

Response

The data and analysis in the SEIS incorporates much of the monitoring and analysis of the Red Dog Mine performed by Teck, State of Alaska agencies, and EPA over the years. During SEIS development, EPA noted that additional information needed to be collected. This information includes more detailed wetlands delineation and information on subsistence. The household harvest survey and the subsistence survey in Kivalina and Noatak were studies conducted in the field in support of the SEIS. The health impact assessment was developed specifically for the project by Maniilaq.

Comment ID: 7.098

Response

Comment noted. The NPDES permitting process for this project is being completed by EPA. Delegation of the mining NPDES permits to the state will occur in November 2010. The NPDES program delegation is beyond the scope of the SEIS.

Comment ID: 7.099

Response

Delegation of the NPDES program to the state is beyond the scope of the SEIS.

NPDES

nickel, silver, TDS, total cyanide, and hardness. No support or analysis is offered in any of the environmental review documents for the removal of most of these analytes. The existing (1998) permit is woefully inadequate in that it does not require testing for a number of known, potentially-toxic constituents in the Red Dog effluent. To compound this inadequacy by now removing the effluent limitations for more than 20% of the substances the 1998 permit required testing for – five of the 24 parameters listed in the 1998 permit – is neither supported by the environmental review documents nor protective of the environment. The new permit should both retain the existing permit’s effluent limitations for nickel, silver, TDS, total cyanide and hardness, and also add monitoring and reporting requirements for the various reagents that Teck Cominco uses at the mine site.

The proposed permit radically scales back the amount of bioassessment monitoring that will be required, including dropping all requirements for biomonitoring in Middle Fork Red Dog Creek, stations on Ikalukrok Creek, the Wulik River, Anxiety Ridge, Evaingiknuk Creek and Buddy Creek. This scaling back (or more appropriately backsliding) is neither explained or justified in any of the environmental review documents. It represents a disappointing capitulation to Teck Cominco and a complete failure by EPA to require permit limitations that are protective of the environment. It is not “duplicative” to require reporting the monitoring results in both the monthly DMRs under the federal permit and the annual waste permit report under Alaska regulations – having the reporting in the monthly DMRs not only gives a far more timely reporting to the public, but also makes any failure to report federally enforceable under the Clean Water Act. EPA should keep all biomonitoring reportable in the DMRs, rather than dramatically scaling back the bioassessment monitoring.

NPDES

The permit should require the TDS plan to be issued and approved by EPA *before* the permit is issued – this type of after-the-fact planning does not protect the environment or the people of Kivalina. The plan should be made available to the public for public comment.

Monitoring using the total cyanide method is discontinued entirely – at the same time that the permit limitations for cyanide are almost wholly lifted. This creates the situation where there is no effluent limitation for cyanide being discharged, and no testing for it downstream (at Stations 2, 10, 151 and 160, all locations where it is currently monitored for), although Teck Cominco discharges millions of pounds of cyanide each year. Thus, the concerned public – particularly residents of Kivalina, who drink the water into which Teck Cominco is discharging the cyanide – will have no way of knowing the concentrations of cyanide in the water as it moves downstream. Monitoring for nickel, silver and hardness is discontinued entirely, with no justification or explanation or examination of the potential environmental impacts, nor any evidence to support this weakening of the permit.

Monitoring of the tributary streams above the mine that feed into the mine is discontinued entirely, so there is no way of determining how much of the pollution in the effluent is a result of natural mineralization flowing into the tailings pond and how much is being added by Teck Cominco. Given that Teck Cominco is embarking on further development of the mine’s footprint through Aqaluk, it appears particularly irresponsible to stop monitoring the tributaries at this point.

North Fork of Red Dog Creek. This is simply not legal.

There is no support for changing the ambient monitoring from Station 10 to Station 151. Changing the monitoring location will make comparisons of ambient monitoring data from the 1990s and through 2005 with new monitoring data difficult. Both stations should be monitored.

There is no cyanide monitoring at all at Stations 2, 73, 160 or 10 in the new permit, which calls into question EPA's ability to determine, based on any evidence, that the removal of the cyanide effluent limitation will not have any impact downstream. The approach appears to be to remove any monitoring that might actually show impact downstream; this is a violation of the anti-degradation and backsliding regulations. Total cyanide monitoring should be conducted at Stations 2, 73, 160, 10 and 151.

The upper pH range should be 8.5 based on the designated use of contact recreation in the Middle Fork, but is set at 10.5.

Teck Cominco adds numerous organic and other chemicals during the processing of the lead-zinc ores. See CRPE Exhibit 25 for a list of those in use as reagents. The Proposed Permit fails to regulate the majority of these compounds by failing to set limits on any organic compounds, oils and greases, fuels, nitrates or sulfates.

NPDES

Numerous samples from Outfall 001 have failed the cyanide limitations contained in the existing NPDES permit. This was true even though several forms of cyanide-related compounds are known to be present in the Red Dog effluents (such as metal-cyanide complexes, cyanate, thiocyanate), but are not detected by either the WAD or Total cyanide analytical methods. Nevertheless, with no technical justification provided, the Proposed NPDES Permit states that no enforceable limitations for *any form of cyanide* will be included in the new permit. This is an unreasonable change in the permit conditions. The 001 Outfall effluents should be analyzed for both WAD and Total Cyanide, and also for cyanate and thiocyanate once per week as noted in the Proposed Permit documentation.

Consistent with many other aspects of the Proposed NPDES Permit, the zinc limitation at Outfall 001 is also proposed to be weakened. The proposal is to allow the zinc limitation to rise from 210 to 269 µg / L. Zinc has consistently been shown to be toxic to most species of cold water fish.

The Proposed Permit also would weaken the limitations at 001 for selenium as well as for zinc.

There is no reason to allow Teck Cominco to calculate, rather than measure, hardness at Outfall 001.

It is important that EPA clarify the reporting of split samples, but the method chosen in condition I.A.5.e would allow Teck Cominco to repeatedly split samples to get lower values to

average in with violative results, as it has been doing for the past five years. The permit should require the reporting of the *highest* value of any valid test of a split sample to discourage this laboratory shopping that Teck Cominco has engaged in.

In the modified permit from 2003, the TDS was required to be monitored twice per week at the end of the mixing zones; in this permit, that is reduced to once per week. This backsliding is not appropriate and not protective of the environment, particularly given the recentness of the imposition of the mixing zones.

There is a conflict in the permit between the requirements in I.A.7.c.2 and I.D.6, as I.D.6 does not include station 150's conductivity data in the DMRs. All the ambient monitoring data should be included in the DMRs to resolve this conflict.

Because the TDS concentration in the effluent is only monitored once per week, the use of the 110% of the highest effluent value could result in spikes of TDS not being captured by the modeling. Additionally, the term "highest measured effluent value" is not defined – is this over the life of the facility, the permit, the year, the month? We suggest over the life of the facility.

The new permit deletes several important conditions from the current permit, including I.C.11 on discharge during winter, I.C.14 and I.G.7 on the reopener, and I.C.15 on unauthorized discharge. Each of these conditions plays an important part in protecting the arctic environment, and their removal makes the permit less protective of the environment, less stringent, and in violation of the anti-backsliding regulations. The deletion of I.C.15 on unauthorized discharge, coupled with new permit condition II.1, gives Teck Cominco a permit shield for any unauthorized discharge. This is considerably less protective of the environment and human health than the present permit, which allows federal enforcement of unauthorized discharges.

Likewise, the QAPP condition in the current permit, I.I.1, is considerably more detailed and protective than the new condition. Additionally, the certification, data verification, and archiving conditions (conditions I.G.4, 5, 6, 7, 8, 9, 10 and 11) have been deleted without cause or explanation. These are conditions that play an important role in protecting the public, and their deletion significantly weakens the renewed permit. These deletions appear to be backsliding, as are all other permit condition deletions.

Conditions I.C.6 and I.C.7 are considerably less protective of human health and the environment than the current permit and appears to be backsliding. All of the data should be available each month in the DMRs.

The biomonitoring for benthic invertebrates (current condition I.F.1.d) has been inexplicably dropped; again, this is backsliding, and a failure to protect the environment. Removing the biomonitoring means that there is no way to determine if there is actually an impact on the environment, making the permit considerably less protective.

NPDES

thallium, vanadium, zinc; major cations (calcium, magnesium, sodium and potassium), and nonmetals (sulfate, nitrate, ammonia, boron, phosphorus, fluoride, chloride, alkalinity), and natural radioactive constituents (uranium, thorium, potassium-40, gross alpha and beta). These samples should also be analyzed for in an Organic Priority Pollutant Scan, together with oil and grease, WAD cyanide, thiocyanate and cyanate, water temperature, pH and WET Testing.

- Several of the constituents listed above are potentially toxic to aquatic and other organisms and they are not monitored as part of either the existing or the proposed NPDES permit. All these constituents should be added to the required monitoring and effluent limitations should be developed and included in the Proposed NPDES Permit.

- The Final Permit should require that additional water quality monitoring, sediment sampling, flow measurement and toxicity testing be conducted by some competent, independent party, such as the U.S. Geological Survey, at the 001 Outfall and other strategic locations. This party should be both financially and politically independent of both Teck Cominco and the regulatory agencies. This independent monitoring should also include collection of field measurements of pH, water temperature and specific conductance throughout the margins of the Red Dog facilities and along both banks of the local tributaries to define the possibilities of non-point source seepages from the site. Comparable surveys should be conducted during the winter months to evaluate the existence / degree of non-point seepage that might be occurring during the months when the treatment plant is not operating. Such surveys could easily employ the use of various remote sensing techniques.

NPDES

- The permit would require WET testing to be performed once per month. However, because past samples often have not yielded useful results, it is proposed that WET testing should be required twice per month. In this way, it is much more likely that useful toxicity data will be obtained during any one season. Additionally, the WET testing must use seven dilutions to be legal.

- Legal WET testing is especially important as it indicates the presence of toxicity due to the sum of all the potential contaminants in the effluents.

- There should be some limits on barium discharge, rather than just monitoring requirements.

B. Teck Cominco had undue influence in the crafting of the permit conditions.

Many of the permit provisions found in this revised permit were concocted years ago during the last round of permit renewal (that permit was issued, appealed and then withdrawn, in 2007). Then, and now, the EPA permit and the State Certification appear to be a concerted effort by EPA, ADEC and Teck Cominco to avoid any real enforceable limits in the permits. Teck Cominco has effectively lobbied the State to weaken its water quality criteria at every turn, with the express ambition of then using those weakened criteria to get weaker EPA permit limitations. See email from Mark Thompson to Luke Boles, November 22, 2005 (Exhibit 27, submitted under separate cover and incorporated here by reference). Thompson repeatedly seeks weaker permit limitations from the state, which have apparently lead to weaker EPA permit conditions as well: Thompson