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Summary of Submittals

1. Annual notice for the initiation of discharge – Permit Part I.A.
2. Monthly DMRs by the 20th of each month – Permit Part II.B. – including:
 - Report of effluent monitoring results required by Tables 1 and 2
 - Flow calculations – Permit Part I.A.2.
 - Ambient Monitoring for Stations 150, 151, and 160 – Permit Part I.A.5.c.
sent to EPA, ADEC and OHMP
 - Streamflow – Permit Part I.D.7.
 - WET results – Permit Part I.G.4.a.
3. Notice of WET exceedance within 15 days of results – Permit Part I.G.5.b.
4. WET, full report end of month after results submitted – Permit Part I.G.4.b.
5. TDS correlation report with final DMR for each season – Permit Part I.A.7.f.
6. Annual Water Monitoring Summary Report – Permit Part I.J. – including:
 - Spring snow pack – Permit Part I.E.5.
 - Other ambient monitoring not required monthly – Permit Part I.D.5.
 - Precipitation/Evaporation information – Permit Part I.E.8.
 - Biomonitoring report – Permit Part I.F.2.
7. Update Biomonitoring study plan with 60 days of permit effective date – Permit Part I.F.1.
8. TRE generic workplan within 30 days of permit effective date – Permit Part I.G.3.
9. Quality Assurance Plan update within 60 days and implementation with 120 days of permit effective date – Permit Part I.H.
10. Site Management Pollution Prevention Plan update within 90 days of the permit effective date with a notice of completion to EPA and ADEC – Permit Part I.I.1.
11. Reapplication at least 180 days prior to the expiration date of the permit – Permit Part IV.B.

This list may not be exhaustive, if discrepancies occur, the requirements within the text of the permit apply.

I. Effluent Limitations and Monitoring Requirements

During the effective period of this permit, the permittee is authorized to discharge pollutants from the outfalls specified herein to the Middle Fork Red Dog Creek and tundra wetlands, within the limits and subject to the conditions set forth herein. This permit authorizes the discharge of only those pollutants resulting from facility processes, waste streams, and operations that have been clearly identified in the permit application process.

A. Effluent Limitations and Monitoring - Outfall 001

The permittee must limit and monitor discharges from Outfall 001 to the Middle Fork Red Dog Creek as specified in Table 1, below. All figures represent maximum effluent limits unless otherwise indicated. The permittee must comply with the effluent limits in the tables at all times unless otherwise indicated, regardless of the frequency of monitoring or reporting required by other provisions of this permit.

There shall be no discharge from Outfall 001 until there is sufficient flow of water in Main Stem Red Dog Creek to determine compliance with total dissolved solids (TDS) limitations as described in Part 1.A.7. The permittee must supply written notice documenting the start of discharge to EPA within 24 hours.

1. Table 1

TABLE 1 – Effluent Limitations and Monitoring Requirements for Outfall 001					
Parameter (in ug/L unless otherwise Noted)	Daily Maximum	Monthly Average	Weekly Average	Sample Frequency	Sample Type¹
Cadmium²	3.53	1.54	—	1/week	24 hour composite
Copper²	34.40	11.76	—	1/week	24 hour composite
Chromium²	—	—	—	1/month	24 hour composite
Lead²	18.79	8.26	—	1/month	24 hour composite
Manganese²	—	—	—	1/week	24 hour composite
Mercury, Total	0.02	0.01	—	1/month	24 hour composite
Selenium²	7.00	4.46	—	1/week	24 hour composite
Zinc²	269.00	157.84	—	1/week	24 hour composite
Total Suspended Solids (TSS), mg/L	30.0	20.0	—	1/week	24 hour composite
Total Dissolved Solids (TDS), mg/L	See Permit Part I.A.7.			1/week	24 hour composite
TDS Anions and Cations³	—	—	—	1/month	24 hour composite
Cyanide, WAD	—	—	—	1/week	Grab
Fecal Coliform, #/100 ml	—	200	400	1/ 2 months	Grab
Aluminum²	155.00	51.40	—	1/month	24 hour composite

TABLE 1 – Effluent Limitations and Monitoring Requirements for Outfall 001 (Continued)					
Parameter (In ug/L unless otherwise Noted)	Daily Maximum	Monthly Average	Weekly Average	Sample Frequency	Sample Type ¹
Iron ²	---	---	---	1/month	24 hour composite
Total Residual Chlorine	---	---	---	1/month	Grab
Biochemical Oxygen Demand, mg/L	---	---	---	1/month	24 hour composite
Total Ammonia as N, mg/L	10.65	6.80	---	1/week	24 hour composite
Organic Priority Pollutant Scan ⁴	---	---	---	1/year, see note 4	24 hour composite
Turbidity, NTU	---	---	---	1/month	Grab
Temperature, °C	---	---	---	daily	Grab
Cumulative Volume, gallons	See Permit Part I.A.2.		---	---	Continuous Recording
Whole Effluent Toxicity, TUC	12.2	9.7	---	1/month	See Permit Part I.G.
pH, standard units	Within the range of 6.5 to 10.5			1/week	Grab

1. Effluent samples collected shall be representative of the effluent discharged without dilution from or contact with any outside sources. Results of analyses conducted under Permit Part I.A.1. shall be submitted monthly on the discharge monitoring report.

2. All metals shall be analyzed as total recoverable unless otherwise indicated.

3. This monitoring shall include carbonates, chlorides, sulfates, potassium, magnesium, calcium, and sodium. The carbonate analysis should be estimated based on direct measurement of alkalinity.

4. Volatile organics shall be monitored using EPA analytical method 624, and semi-volatile organics shall be monitored using EPA analytical method 625. The pollutants should include the following pollutants listed in Section V., Part C of EPA's NPDES Permit Application Form 2C: (1) 1V-31V – volatile organic compounds, (2) 1A- 11A – acid fraction compounds, and (3) 1B – 46B base/neutral compounds.

- The maximum cumulative volume discharged from Outfall 001 shall not exceed 2.418 billion gallons from January 1 through December 31 every year.

The permittee shall report the cumulative volume discharged from Outfall 001 for that year to EPA, ADEC, and OHMP on the discharge monitoring report (DMR) for each month. For example, if the permittee discharges 1 million gallons from Outfall 001 in May and 2 million gallons in June, the June DMR shall state a cumulative flow discharged from Outfall 001 of 3 million gallons (1 million + 2 million = 3 million). In addition, the permittee shall report the total volume discharged each month.

- The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen on the surface of the receiving water.
- Hardness of the effluent shall be calculated monthly using the data from the analysis required in Footnote 3 of Table 1. The hardness value shall be reported on the DMR.
- Additional Monitoring and Reporting Requirements:
 - The permittee shall conduct analyses using analytical methods approved under 40 CFR 136. EPA has approved the use of Alternative Test

Procedures (ATP) for cyanide (SM 4500CN-I), anions (300), and metals (200.8) under 40 CFR 136.5 for use in this permit.

- b. For all effluent monitoring, the permittee must use analytical methods that can achieve a minimum level (ML) less than the effluent limitation, if possible. For parameters without MLs, the following MLs shall be used:
 - (1) Iron, chromium, manganese, and cyanide: 10 ug/L
 - (2) Total residual chlorine: 20 ug/L
- c. As part of the development of the Quality Assurance Project Plan (see Part I.I) the permittee shall specify the analytical test method that will be used to achieve each ML.
- d. For purposes of calculating monthly averages, zero may be assigned for values less than the method detection limit (MDL), the {numeric value of the MDL} may be assigned for values between the MDL and the ML. If the average value is less than the MDL, the permittee must report "less than {numeric value of the MDL}" and if the average value is less than the ML, the permittee must report "less than {numeric value of the ML}." If a value is equal to or greater than the ML, the permittee must report and use the actual value. The resulting average value must be compared to the effluent limitation to assess compliance.
- e. Valid test results from split samples shall be reported on the DMR. For reporting an average on the DMR, individual valid results for each test from a split sample are averaged first to determine a sample value. That value is averaged with other sample results obtained in the reporting period and the average of all sample results reported. For reporting the maximum on the DMR, individual valid results for each test from a split sample are averaged first to determine a sample value. That value is compared to other sample results obtained in the reporting period and the maximum of all sample results reported. For the purposes of reporting, split samples are reported as a single sample regardless of the number of times it is split. All laboratories used shall be identified on the DMR attachment.

6. Total Residual Chlorine Monitoring

TRC shall be analyzed immediately after sample collection.

7. TDS Limitations and Monitoring Requirements

- a. Mixing Zone Locations: ADEC has authorized the following mixing zones:
 - (1) Main Stem Red Dog Creek mixing zone: begins at the confluence of North Fork Red Dog Creek and Middle Fork Red Dog Creek and continues downstream for approximately 1,930 feet. Station 151 is the monitoring station at the edge of this mixing zone.
 - (2) Ikalukrok Creek mixing zone: begins at the confluence of Main Stem Red Dog Creek and Ikalukrok Creek and continues downstream for

approximately 3,420 feet. Station 150 is the monitoring station at the edge of this mixing zone.

- b. The permittee shall limit the TDS load discharged from Outfall 001 so as to maintain in-stream TDS concentrations at or below all of the following:
 - (1) At the edge of the mixing zone (Station 151) in Main Stem Red Dog Creek: 1500 mg/L throughout the discharge season.
 - (2) At the edge of the mixing zone (Station 150) in Ikalukrok Creek: 1000 mg/L throughout the discharge season.
 - (3) Station 160: 500 mg/L from July 25th through the end of the discharge season.
- c. When discharging, monitoring by direct laboratory testing shall be conducted. All samples of the receiving waters for TDS shall be grab samples, while effluent samples shall be composite samples as shown in Table 1. Sample collection shall be as follows:
 - (1) TDS shall be monitored once per week at Station 151, Station 150, Station 160, and the effluent.
 - (2) Conductivity and temperature shall be monitored concurrently with TDS sampling at Stations 151, 150, and 160.

The results of all monitoring and measurements must be submitted with the monthly DMR.
- d. The permittee shall calculate and record the allowable flow volume from Outfall 001 at least twice each day using the formulas below and shall submit all of the data involved in those calculations (including the time the measurements were taken), and the calculation results, each month along with the DMR. The permittee shall base each calculation on data collected within two hours of each shift change, and shall make each calculation within one hour of the collection of data. The allowable flow calculated from measurements taken at Station 151 and the outfall must reflect the stream conditions at the station and the outfall flow that are occurring at approximately the same time frame (i.e., the conductivity and flow measurements at Station 151 and the flow from the outfall must be taken within 30 minutes of each other). The following shall be collected and calculated:

EFFLUENT

- (1) Assume the effluent concentration (C_e) is equal to 10% above the highest measured effluent value.
- (2) Measure the effluent flow (Q_e)

STATION 151

- (1) Measure conductivity at Station 151
- (2) Calculate the total TDS concentration at Station 151 ($C_{151(\text{total})}$) using the measured conductivity at Station 151
- (3) Measure the total flow at Station 151 ($Q_{151(\text{total})}$)
- (4) Calculate the allowable effluent flow ($Q_{\text{allowable}}$) expected to result in 1500 mg/L TDS at Station 151 using the following equation:

$$Q_{\text{allowable}} = Q_E + (Q_{151(\text{total})}(1500 - C_{151(\text{total})}) / (C_E - 1500)$$

- e. Calculations of TDS concentrations based on conductivity shall be made using correlation curves that are based on TDS and conductivity measurements made pursuant to this permit.
- f. After the end of each discharge season, the permittee shall submit a report, with the final DMR for the season, which compares the calculated TDS values in Main Stem Red Dog Creek (based on the measured conductivity in the creek) to the actual measured values. The report shall include the following information:
 - (1) Measured TDS concentration at Station 151, and the date and time each sample was taken,
 - (2) Measured conductivity at Station 151, and predicted TDS concentration at Station 151 at the date and approximate time the samples were taken in 1.7.c.(1) (i.e., within one hour of sample collection),

B. Construction Camp Site Requirements.

The permittee is authorized to discharge treated domestic wastewater from the Construction Camp through Outfall 002 into the tundra provided the following effluent limits and monitoring requirements are met:

1. Samples collected shall be representative of the effluent discharged without dilution from or contact with other sources. The permittee shall collect the samples after the last treatment unit prior to discharge.
2. The date of sampling shall be recorded. Results of the sample analyses shall be submitted monthly with the DMRs.

3. a. Table 2

TABLE 2 Effluent Limitations and Monitoring Requirements for Outfall 002						
Parameter ¹	7-Day Average	30-Day Average	Daily Maximum	Units	Sampling Frequency	Sample Type ²
Flow	---	---	---	gpm	Daily	Recording
Biochemical Oxygen Demand (BOD ₅) Influent & effluent	45	30	60	mg/L	1/month	Composite
Biochemical Oxygen Demand (BOD ₅) Influent & effluent	---	---	---	lb/day	1/month	Composite
Total Suspended Solids (TSS) Influent & effluent	45	30	60	mg/L	1/month	Composite
Total Suspended Solids (TSS) Influent & effluent	---	---	---	lb/day	1/month	Composite
Fecal coliform	---	20	40	#/100 ml	1/month	Grab
Total Residual Chlorine ³	---	9.01	18.07	ug/L	1/month	Grab
Ammonia as N	---	---	---	mg/L	1/quarter	Grab
pH	See Permit Part I.B.3.c.			s.u.	1/month	Grab
Dissolved Oxygen	See Permit Part I.B.3.d.			mg/L	1/month	Grab

1 – For additional monitoring requirements see Permit Part I.B.3.b.
 2 – Composite samples of effluent shall be composed of a mixture of four discrete grab samples of effluent. The grab samples shall be collected and combined within a 24 hour period. Each grab sample shall be collected and stored in accordance with procedures prescribed in Standard Methods, 18th, 19th or 20th Editions.
 3 – TRC shall be analyzed immediately after sample collection.

- b. The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen on the surface of the receiving water.
- c. The pH must not be less than 6.5 standard units (s.u.) or greater than 8.5 standard units (s.u.).
- d. Dissolved Oxygen (DO) must be greater than 7 mg/L but less than 17 mg/L.
- e. Percent removal for BOD₅ and TSS must be reported monthly on the DMR. Percent removal requirements for BOD₅ and TSS are as follows: for any month, the monthly average effluent load shall not exceed 15 percent of the monthly average influent load. Loading shall be calculated using the following formula:

$$8.34 \times \text{pollutant concentration (mg/L)} \times \text{daily flow (mgd)}$$