

**Division Of Environmental Health
Solid Waste Program
410 Willoughby Avenue, Suite 303
Juneau, Alaska 99801-1795
<http://www.state.ak.us/dec/home.htm>**

**Telephone: (907) 465-5353
Fax: (907) 465-5364**

March 8, 2002

Mr. Keith Marshall
Kennecott Greens Creek Mining Company
POB 32199
Juneau, Alaska 99803

Subject: January 16, 2002 Site Visit

Dear Mr. Marshall:

Kenwyn George and myself representing the Alaska Department of Environmental Conservation (ADEC) visited the Kennecott Greens Creek (KGC) waste disposal facilities on January 16, 2002. This was the first formal inspection of the facility since it was permitted in January 2001. The goals of this inspection were to understand compliance with the permit and the solid waste management regulations. Additionally, we were interested in current and future issues related to disposal and permitting. Due to time constraints an inspection for compliance with all aspects of the permit was not possible. However, we were able to review all issues we felt were of high priority as well as many additional items. We believe that ongoing contact and future inspections will adequately cover those items missed on this inspection.

Present at this inspection were Steve Heppner and Jeff DeFreest representing the USDA Forest Service and several representatives from the Greens Creek staff including, Kerry Lear, Pete Condon, Tom Zimmer, Eric Sundberg, and Steve Hutson. We want to thank you and your staff for providing assistance with this inspection and for Pete Condon's compilation of records, which allowed us to quickly review them in the short time period we had for this aspect of the inspection. We are interested in the compilation of records and information that will be presented at the April 15, 2002 annual meeting. We offer our assistance in reviewing drafts of the annual report prior to this meeting.

We were greatly impressed with the overall operation and management of the facilities and found the facilities to be operating effectively in meeting performance goals. The KGC staff hosting our inspection demonstrated proficiency in their preparation for this initial inspection, as well as their knowledge and operation of the facilities. Below we mention the various aspects observed and items that we feel need further attention.

Sites Inspected

In 2001 production was disposed at a rate of 1803 tons/day. Because of mining methods in 2001 and work in an ore rich zone mine sequencing (requiring crown pillar removal), 30% more tailings were produced than in 2000. Most of these tailings were placed at the tailings surface disposal facility. The tailings would normally have been placed underground. Since the mine was working in ore rich zones, and areas with access already in place, less production rock was produced during the year. This resulted in 30-40% less production rock placed at Site 23.

Site 23/D

This past year, approximately 53,000 tons of production rock was disposed at Site 23 and 157,000 tons were placed underground.



Production Rock Site 23

Visual Observation.

Sites 23 & D were snow covered at the time of this inspection. Although snow cover prevented a thorough physical examination of the site, most of the major aspects such as disposal of classified rock, monitoring devices, drainage features and final cover system test plot were observed. It was useful to observe the facility during winter conditions as cold temperatures present unique challenges to landfill operation. The site was found to be operating within the prescribed permit conditions. The site is designed to have capacity to accommodate production rock throughout the current mine plan .

The main operational features that contribute to overall environmental protection at this site are:

1. an operation that maintains segregation, centralization and encapsulation of the higher potential ARD materials within the core of the facility, compaction of all rock disposed,
2. an operation that maintains stability, and,
3. collection and transmission of run-on water through finger drains collecting the run-on water above the waste rock. These drains then run beneath the site. This collection system reduces contact of run-on and ground water with the production rock.

Waste was placed according to classification type. Class I rock was disposed peripherally at the site according to plan. Class II and Class III rock was disposed centrally in specific zones within the fill. Class III rock was placed more centrally within the pile than Class II rock. It was reported that waste is compacted with dedicated compaction equipment and the resultant hydraulic conductivity is approximately 1×10^{-5} cm/sec. Outside slopes were estimated to be constructed at a gradient of 3(H):1(V) for stability.



Disposal of Class I Waste Rock



Class II Waste Rock



Class III Waste Rock

Production Rock Site 23 – Active Disposal Areas

Finger drains were placed in run-on zones and staked for ease of extension as the fill expanded vertically. There was very little observed run-on to the facility, and KGC staff report little run-on during the spring thaw. Where run-on was observed, finger drains were in place. Because of time constraints we were not able to observe all internal and compliance monitoring devices in detail and correlate their placement on the map that was provided to the Department on May 31, 2001. However, these were pointed out and it appeared the placement was correct. KGC has field verified all site monitoring device locations. Monitoring devices should be fitted with locking caps and be locked when not in use to prevent unauthorized access. A map providing geographic coordinates based on the local coordinate system should be included with the annual report for all monitoring devices, along with relevant data from the stations. This information will be very helpful to the department for a variety of reasons, including historic records, changes that occur during the life of the mine, and tracking post-closure monitoring.



Run-on at Finger Drain



**Staked Finger Drains
Production Rock Site 23 - Detail**



Monitoring Device Without Lock

Engineered Final Soil Cover System Test Plot

A 1-acre test plot/initial area of reclamation using the engineered cover at Site 23 was observed. The test plot utilizes profile #4 from the Unsaturated Soils Engineering Ltd. (USE), December 1998 report. The department has approved the use of this profile in the Waste Disposal Permit and it is incorporated into the reclamation plan. The approximately 6-foot thick, snow covered plot has been in place for approximately 2 years and is reported to have good first-year grass/vegetative growth. Future vegetative adjustments may be necessary depending upon the outcome of cover system monitoring.

KGCMC chose the USE profile #4 design because it preferentially excludes oxygen while also limiting water from reaching the waste rock. In the best possible situation both would be excluded, but is unrealistic, because a soil cover system that is designed to exclude both may, during certain times of the year exclude one over the other. This could set up a condition whereby neither water nor oxygen are fully limited and pile oxidation could occur. A geomembrane cap may or may not produce the desired results as a geomembrane cover system has its own set of disadvantages. Both geomembrane and soil cover system are not proven over the long-term (i.e. hundreds if not thousands of years), but the soil cover is expected to be a more proficient performer long term. The profile #4 USE design was selected because it would ensure the barrier layer would maintain the required percentage of saturation and thereby limit oxygen ingress. It is a cover system utilizing natural material that is considered to be geologically stable over time and can be easily repaired. However, drainage from this system is expected and planned for throughout closure, post-closure care and beyond.

A monitoring system was installed according to USE report design that included:

1. a weather station (measurement of surface conditions such as precipitation, relative humidity, temperature, net radiation and wind speed),

2. neutron probe access tubes (measurement of relative moisture content of the soils at depths within the soil cover and production rock)
3. a lysimeter at the base of the barrier layer (measuring water infiltration rate)

The test plot is relatively small and accessible to air on all sides of the test plot. Therefore, according to site operations staff, the implementation of direct oxygen monitoring would likely result in inaccurate results because of the lateral diffusion of air below the installed barrier layer.



Production Rock Site 23 - Final Cover Test Plot Showing Exposure At Sides To Air

According to site operations staff, results thus far are favorable showing water content in the barrier layer was within specification maintaining an 85% saturation of the barrier layer to limit oxygen ingress. Winter conditions to date do not appear to create freeze/thaw in the barrier layer located approximately 3 feet below the surface. However, it should be noted that since the construction of the cap, the site has not experienced a severe, cold winter that would test the cap. According to Unsaturated Soils Engineering Ltd, the design would excluded oxygen even if the barrier layer froze and this layer would remain saturated as it thawed. Frost depths will decrease as a mature canopy develops on the cover. Although monitoring thus far indicates favorable results in achieving the design expectation of minimizing passage of oxygen through the barrier layer, the system will continue to be monitored year-round.

Water was observed in the lysimeter collection system that indicated the passage of water through the cover system. Site personnel reported this result is expected as the cover system design is expected to pass water at the rate of approximately 10% of the annual rainfall, or between 7-9 inches a year.



Production Rock Site 23 - Lysimeter Drain at Final Cover System Test Plot

Demonstrating the effectiveness of this soil cover system would be advantageous with the complete closure of Waste Site "E" or some other site with acid producing potential. Completely closing a site on all sides would allow for the effective establishment of the soil cover as well as installing monitoring devices or access tubes for direct oxygen readings could enhance the demonstration of the final cover system performance.

Conifer Blow-down and Cap Integrity

The long-term success/failure of the engineered final soil cover system is directly related to maintaining the integrity of a 2-foot thick barrier layer such that water infiltration is minimized, water saturation is maintained, and the passage of oxygen (air) through the cap is minimized. According to the plan, the final cover system will be provided a 2-foot thick growth layer installed above the barrier layer. One of the functions of the growth layer is to protect the barrier layer. An important feature related to the long-term success of the overall cover system is related to maintaining the growth layer such that soil is not taken away and blow-down of trees does not expose the barrier layer. The thinner the growth layer, the higher the chance of damage by root growth and freeze/thaw.

At this inspection several large trees had been blown down immediately above the tailings disposal site. It was clearly visible that for stability, roots spread horizontally, rather than penetrated deep into the soil. The root system of the blown down tree did not appear to bring the underlying soil up with the roots, except for that which was caught within the roots themselves. The roots appeared to be penetrate up to 18" from the surface, however it could not be determined whether that would have been a full 18" into the soil itself, some of the root mass may have been growing on the surface of the soil. Whether this is considered to be substantial enough over time given further development of the organic mat is unclear. It is also unclear by this examination whether or not soil in the growth layer of the final cover system would be taken away over time as there is likely to be an increase in growth layer thickness over time due to the accumulation of organic material.



Uprooted Tree Above Tailings Site

Qualified personnel should explore long-term issues related to tree blow-down and relate this information to the final cover system for the facilities at Greens Creek in a more quantitative manner. Issues to be explored should take into account at a minimum the age of trees and soil conditions of the growth layer at blow-down. If it is found the growth layer deteriorates over time, then a plan should be developed that minimizes or prevents tree growth or “blow-down” of trees.

Attenuation

As mentioned above, the USE profile #4 final soil cover system allows approximately 10% of the annual. During operations, 5-feet of Class I Argillite production rock is placed peripherally at the site to encapsulate the rock that has a potential for ARD. The Class I Argillite will be part of the “front line” of the ARD prevention system and may be exposed to water infiltrating through the closure cover system. Such class I rock possesses limited zinc and minerals that will leach with or without the presence of acid conditions. The rate of leaching is expected to be greater initially, then wane over geologic time. Quantitative metals loading estimates for the facility have not been made at this time. However, it is expected that metals and sulfate loading from the site will occur. Therefore, treatment systems must be planned and designed to handle the highest likely scenario. A water balance / mass loading analysis is necessary (please see permit condition 2.4.1). The Department has yet to receive the plan or plans, designs and the most recent loading analysis. The plan should include monitoring above and below treatment systems, and should show the systems are capable of treating the effluent to the required standard. This is also required for the Tailings Disposal Site (below).

Site D

Site D has not accepted waste for several years. The site is now dormant with a vegetated growth layer cover. However, this site is important in that it is integrated with Site 23 water flows and will be connected with future treatment systems after Site 23 is closed. Additionally, Site D contains production rock with ARD and metals leaching potential. Furthermore, Site D is important from the standpoint of stability and is a downslope structure from Site 23. Therefore, it is important that the waste is characterized within Site D and long-term treatment structures are designed effectively to accommodate both Sites 23 & D. Please see permit condition 2.4.1 and 4.1.1. The Department awaits KGCMC's schedule for development of sufficient information regarding these permit conditions.

During the inspection we took a look at the exposed pipe from the Site 23 curtain drain. Sampling the water in this pipe would enable us to understand the chemical composition of the water that enters this drain from Site 23. This exposed portion of the drain pipe should be added to the internal monitoring program and sampled according to the internal monitoring program for the facility as prescribed in the General Plan of Operations.



Drainage Pipe From Curtain Drain At Site D

Underground

The underground mine was not visited during this inspection. However, we learned about classification of rock types and some of the waste related features of the underground mine. The permit for this facility requires that all Class IV rock is re-deposited underground. After the placement of all Class IV production rock underground, placement of Class III production rock and tailings should be maximized to scale back disposal on the surface as much as possible.

The mine is located at an elevation of 920 feet above sea level. Workings extend down below sea level elevation through several miles of tunnels. As the drifts extend, it becomes impractical and inefficient to truck tailings (backfill) to those depths. A more efficient paste mill/pump and

pipeline delivery system is being constructed underground to minimize the use of truck haulage, making it more efficient. The paste or pug mill produces a slurry of tailings and cement, to more effectively transport the tailings backfill (cemented tailings) greater distances underground as compared to the trucks. This is intended to save time, money and make disposal underground more efficient. It will result in an annual tailings backfill and placement of approximately 62% of the current mine plan tailings and will maximize placement of tailings underground. Waste rock placement within the mine will continue to be maximized for haulage efficiency.

During the inspection KGCMC staff related how the classification of rock types within the mine correlates with the amount of waste rock delivered to both surface (Site 23) and underground sites. The system of underground classification appears to work effectively to determine which waste rock is to be disposed of either underground or at Site 23. This determination is made by a professionally trained geologist and takes place at the underground face. According to KGC staff, it utilizes an established protocol that results in classification of production rock that is conservative, and has been confirmed through acid base accounting checks.

Tailings Site

Visual Observation.

Several aspects of the surface tailings facility were inspected. The site was observed to be operating within the prescribed permitted cellular format. Disposal activities occurred at the eastern aspect of the facility at the time of this inspection. To a lesser extent tailings was placed at the West Buttress during 2001. It was reported operations in the West Buttress (western) area of the site is limited by precipitation (rain and snow melt) as this area of the facility is built to higher construction standards in order to achieve proper stability in the case of a maximum credible earthquake. Diversion structures appeared well developed. Run-on and run-off appeared to be well controlled. There was no water that appeared to run on to the facility. Surface drainages with anomalous water sampling are discussed below.

Internal and compliance monitoring wells were observed except for wells 1-S/D and 2-S/D (the southern downgradient compliance monitoring wells in the Tributary Creek drainage). These wells were located at a distance of several hundred feet through muskeg. Due to time constraints there was not enough time to observe these wells. All of the monitoring wells observed did not have locks on the tops although there were buckets and other devices installed over the tops to prevent entry by rain or snow. All monitoring wells should be provided locking caps and be locked to prevent unauthorized access or sabotage.

Compliance monitoring wells 1S/D (Tributary Creek drainage) and MW-5 (Hawk Inlet drainage) are to be omitted from the sampling plan according to the Fresh Water Monitoring Plan October 2000 revision. Wells that are omitted from the plan should be decommissioned according to the Department's *Recommended Practices for Monitoring Well Design, Installation, and Decommissioning*, April 1992 and according to permit Section 2.8.2, or may be maintained open and incorporated into the KGC internal monitoring plan to continue providing useful hydrologic and geochemical information. The newly installed upgradient monitoring wells MW-

T-00-1A & C in the muskeg to the northeast of the tailings facility will be monitored under the FWMP protocols, and used for compliance comparison purposes. An updated map including GIS coordinates and relevant data should be included in the annual report.

Internal monitoring

We request KGCMC clarify well site names on the annual report maps. This would allow us to understand the history of internal monitoring at the site over time.

Wells MW-01-05, MW-01-06A, and MW-01-06B are wells completed to understand the hydrology in the Wide Corner area. These wells will be used to monitor water levels under the liner as long as the wells can be accessed. These wells may or may not be useful to determine the effectiveness of the liner in this area. They should be incorporated into the site internal monitoring system.

Landfill Capacity

Landfill capacity is an issue as the site has achieved maximum vertical height in the south section of the landfill. Soon the eastern expansion will achieve maximum height as much disposal has occurred in this section over the past year. In January 2002 the Department and the USDA Forest Service approved a liner design for the Wide Corner (southeastern aspect). Tailings placement in the Wide Corner area will likely be available in the spring of 2002 after the liner is installed. Development in the Wide Corner and West Buttress areas during the next year should provide sufficient disposal space during the time the EIS for Stage II of the tailings project is completed (3rd quarter 2002).



Central Portion (left) and Eastern Portion (right) of Tailings Disposal Facility

Depending upon the outcome of the EIS for Stage II of the tailings project, the areas of the site that achieve maximum vertical design elevation will require interim or final reclamation once maximum vertical expansion is achieved. Should the EIS recommend expansion of the existing tailings, then the facility will expand both horizontally and vertically thereby postponing final

reclamation. Should the EIS not recommend expansion, these areas of the landfill are to be reclaimed within 3.5 years after last tailings is placed (final design elevation). Please keep us informed on disposal capacity issues. This is an item that should be addressed in the April 15th annual report.

Seepages, Drainages and Sources.

In the spring of 2001, as part of EIS scoping work for Stage II, issues involved with expanding the existing tailings site were investigated. As part of that review some low volume drainages downgradient of the tailings site were sampled, revealing some anomalous concentrations of sulfate and metals. The two areas of greatest interest regarded "Further Seep" and the "Duck Blind Drain" on the western portion of the landfill. A very comprehensive study of geochemistry and hydrology has been conducted to explain the observed anomalies. Possible scenarios have been identified and an action plan has been prepared, submitted, approved and engaged to address each scenario. Information gathered to date indicate the likely explanation for ARD observed at Further Seep is oxidation of pyritic rock used to construct a previous access road in the area of the seep. The rock lacked carbonate mineralization that typically neutralizes acidity produced by sulfide oxidation. The road segment was removed prior to construction of the West Buttress seepage control structures (slurry wall and french drains).

Pyritic rock that contains carbonate mineralization appears to have been used as bedding for a segment of the NPDES pipeline just west of Pond 6. Similar rock appears to have also been used to construct an access road that lies to the west (outside) of the Saddle Embankment slurry wall. Water flowing along the preferential pathway caused by this rock fill has neutral pH (due to carbonate buffering) but has modest sulfate concentrations. The water that follows this preferential pathway emanates from the drain of the NPDES pipeline flow meter housing, named "Duck Blind" (because of its appearance). Information gathered to date does not indicate that failure of the seepage control structure or that seepage of tailings contact water is the cause of the seeps. Extensive sampling of contact water from the tailings facility show it to be alkaline not acidic like the Further Seep water.



Duck Blind Drain Area Further Seep Drainage Area Northwest Tailings Area (West Buttress)
Downgradient Western Area Of The Tailings Disposal Facility

In a January 2002 report, KGCMC provided the Department its latest assessment and action plan of these anomalies west of the current tailings disposal facility. The information obtained during the ongoing investigation provides a good discussion of geochemical and hydrological behavior

influencing water compositions in the vicinity of the tailings area in general and more specifically in the drainages west of the facility (proposed expansion area). We thank KGCMC for conducting this study as the work is well organized and professionally done. The information helps us to further understand hydrological and geochemical processes at the site.

This investigation will continue as discussed in the updated action plan in the January 2002 report. We ask KGCMC to continue to monitor and take actions as outlined in the action plan to confirm the source of acid drainage and increased sulfates/metals. In addition, the KGCMC plan outlines mitigation of these sources. Information concerning sampling and the actions taken should be addressed in future progress reports and the annual report.

The following additional actions proposed in your "Update of Information and Action Plan on Seeps West of the Current Tailings Disposal Facility" report dated January 2002, are approved in order to verify initial interpretations and to minimize influences from confirmed sources. You list these action items as follows:

1. Continue sampling and interpretation of site waters according to plan
2. Define extent of Duck Blind Drain sulfate source (standpipes and test pits)
3. Confirm removal of acidity source in Further Seep (standpipes, test pits)
4. Identify source for Pit 5 sulfate loading (test pits)
5. Collect additional water elevation data on either side of slurry walls (standpipes)
6. Cap MW-T-96-4 to determine its influence on surface waters
7. Route NW Diversion Ditch into West Buttress Ditch
8. Remove accessible tailings residue from the toe of the West Buttress berm
9. Remove access road below Main Embankment
10. Install pump in Duck Blind Drain and route water to Wet Well 1
11. Lower inlet to North Retention Pond to improve drainage to pond
12. Evaluate water control systems, and evaluate need to improve containment structures along the western and northern perimeters of the facility.

In addition to the items mentioned above;

13. Confirm and potentially remove or treat pyritic material in the access road below the Saddle Embankment (north of Wet Well 1) and the material in the Duck Blind drainage to the west of the facility. Alternatively, if the EIS (due 3rd quarter 2002) recommends expansion over this area, then provide information that may enable the material to be left in place provided it is contained within a containment structure.

Permit Compliance

The facilities appeared to be operating effectively according to permit #9911-BA006, the referenced General Plan of Operations Appendices and the associated plans with the exceptions mentioned below. The areas in which attention should be placed are related to the following:

- A. waste site characterization for Site D required under section 4.1.1 of the permit,
- B. closure / post-closure care plans required under section 2.4.1 of the permit and Appendix 14, Section 1.7 and 2 of the General Plan of Operations

Waste Characterization Site D

Section 4.1.1 of the permit requires a characterization and evaluation of the wastes deposited in Site D for ARD and metals leaching. The characterization should delineate the flow paths beneath the site and classification of waste that may add contaminants to the flow. Samples should be conducted in accordance with Appendix 11, Section 4 of the General Plan of Operations. A plan for any remedial action should be submitted within 60 days of the report based upon this characterization. The report is to be submitted within 1 year of the issuance of the permit. We ask that this plan be submitted as soon as possible. Please submit a schedule for submittal of this report that is reasonable, timely and one that we can both agree upon.

Closure / Post-Closure Plans

Section 2.4.1 of the waste disposal permit requires a detailed, task-specific closure plan. The waste disposal permit for the facilities approved by reference the General Plan of Operations (GPO, Appendix 14, Section 1.7 and 2). The information in the GPO for each respective site is designed to link with the waste disposal permit to make a complete package. As an attachment to this report we have specified the items that are needed in the closure plan.

We ask that site-specific closure / post-closure care plans be generated for each facility under the permit. This is needed to better clarify actions needed at each disposal site during and after closure and to have a collection of all pertinent approved documents related to each disposal facility in one document. Presently one has to look at a variety of documents in order to determine precise requirements at each site. This causes confusion in a completeness review. For example, the capture and ultimate fate of leachate waters and their potential treatment will be different at the Waste Rock site as opposed to the Tailings site.

The Department does not want to create confusion by having redundancy and changes in multiple documents when there is a change in the permit, waste disposal requirements, General Plan of Operations, or other state/federal permits. Additionally, the Department does not want to unnecessarily burden KGCMC staff. Therefore, the Department is open to other solutions to the duplication/redundancy issue.

One possible solution would be to compile a master document for each site that lists all closure and post-closure procedures, and provides a list of references that would satisfy the requirements in the waste disposal permit and GPO relative to each disposal facility. We ask that KGCMC

consider this and offer a mutually agreeable solution according to a negotiated schedule. We provided you at the inspection an example that you may use. The example, Capitol Disposal of Juneau, is typical of approved closure plans the Department requires for large facilities.

Records

Because of time constraints, most records were not reviewed in detail. The inspection did an overview of records that revealed an abundance of records relevant to the Solid Waste permit being created and kept by KGC. Many if not most of the records below would be most helpful in the annual report required under Section 6 of the permit. Records not reviewed, or incompletely reviewed, included the following (waste disposal permit requirement noted):

1. Records of Tailings Disposal Facility. Although some records were covered, most of the records required in the permit were not fully reviewed for completeness. Those included:
 - A. Visual monitoring. Monthly. Section 2.7
 - B. Groundwater monitoring. Semi-annually. Section 2.8
 - C. Check flow and quarterly analyze leachate according to TIEMP. Quarterly. Section 2.10.
 - D. Biological monitoring. Annually. Section 2.11
 - E. NNP and SPLP monitoring. Quarterly, 4 samples each. Section 3.6.2.
 - F. Inventory of wastes. Section 3.6.3
 - G. Standard proctor density. Monthly. Section 3.6.4.
 - H. Phreatic water surface measurements. Quarterly. Section 3.6.5.
 - I. Damage to piezometers or monitoring devices. Section 3.6.6.
 - J. Concurrent reclamation plan. GPO, Appendix 14, Section 1.7, pp 3.

2. Records of Site 23/D. Although some records were covered, most of the records required in the permit were not fully reviewed for completeness. Those included:
 - A. Visual monitoring. Monthly. Section 2.7
 - B. Groundwater monitoring. Semi-annually. Section 2.8
 - C. Check flow and quarterly analyze leachate according to TIEMP. Quarterly. Section 2.10.
 - D. Biological monitoring. Annually. Section 2.11
 - E. Results of test cap monitoring. Semi-annual. Section 2.12.8.
 - F. Summer/winter flows and analysis, Suite Q. Semi-annual. Section 4.1.2.2.
 - G. NNP and paste pH monitoring. Annually. Section 4.1.3.2.
 - H. Inventory and numerical classification of wastes including as-built drawing. Section 4.1.3.3.
 - I. Phreatic water surface measurements. Quarterly. Section 4.1.3.4.
 - J. Damage to piezometers or monitoring devices. Section 4.1.3.5.
 - K. Concurrent reclamation plan. GPO, Appendix 14, Section 1.7, pp 3.

Annual Report

An annual report is required under Section 6 of the permit. The annual report is scheduled for April 15, 2002. We are willing to review any drafts of the annual report in order to ensure the appropriate records and required information are included. As an attachment to this report and as mentioned in this inspection report we have noted the items that are needed in the annual report.

Summary and Close-out

The Department of Environmental Conservation wishes to thank the Kennecott Greens Creek Mining Company for an immense amount of preparation and participating in this first review of the facilities since permit issuance. Our intention is to ensure environmental compliance, protection of the environment and to decrease overall liability for the owner/operator. We found the facilities to be operating effectively. However, due to time constraints we did not have an opportunity to inspect for compliance all aspects of the permit. However, we believe most of the major items were observed. We believe that future inspections can make up for items missed on this inspection. We were very much impressed with the overall operation and management of the facilities. The professional way in which staff worked to develop and manage the facilities is a credit to the company and something the Kennecott Greens Creek Mining Company should be proud. We wish to continue our good working relationship. If you have any questions concerning this report please feel free to contact us. Thank you.

Sincerely,

Ed Emswiler MPH
Kenwyn George P.E.
Alaska Department of Environmental Conservation

cc:

Bill Oelklaus, Kennecott Greens Creek Mining Company, Juneau
Pete McGee, ADEC Tech Lead, Fairbanks
Steve McGroarty, ADNR, Fairbanks
Steve Heppner, USFS, Juneau
Pete Griffin, USFS, Juneau Ranger District
Jeff DeFreest, USFS, Juneau
Phyllis Webber-Scannell, ADF&G