THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION & RESPONSE
Contaminated Sites Program

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File No: 2100.38.128

June 26, 2014

Mr. Ralph Ring
Frontier Tanning
11500 Johns Road
Anchorage, AK 99515

Re: Decision Document: Frontier Tanning
Cleanup Complete Determination

Dear Mr. Ring:

The Alaska Department of Environmental Conservation (ADEC) has reviewed the environmental records for the Frontier Tanning site, located at 11500 Johns Road in Anchorage, Alaska. This decision letter memorializes the site history, cleanup actions, and standard conditions for long-term site management. No further remedial action is required.

Site Name and Location:
Frontier Tanning
11500 Johns Road
Anchorage, AK 99515

Name and Mailing Address of Contact Party:
Mr. Ralph Ring
Frontier Tanning
11500 Johns Road
Anchorage, AK 99515

DEC Site Identifiers:
File No: 2100.38.128
Hazard ID: 271

Regulatory Authority for Determination:
18 AAC 75

Site Description and Background

Frontier Tanning has been in operation since 1958 and is still in operation today. Prior to the late-1980s, wastewater generated from daily operation was discharged directly to ground surface behind the tannery building.

Contaminants of Concern and Cleanup Levels

Chromium was identified during the course of the site investigations above migration to groundwater (MTG) and ingestion cleanup levels; as established in 18 AAC 75.341.

Table 1 – ADEC Cleanup Levels

Contaminant	Soil – MTG (mg/kg)	Soil - Ingestion (mg/kg)	Groundwater (mg/L)
Chromium	25	300	0.10
Chromium +3 (trivalent)	1,000,000	152,000	55
Chromium +6 (hexavalent)	25	300	0.10
Pentachlorophenol	0.047	39	0.001

mg/kg = milligrams per kilogram
mg/L = milligrams per liter

Characterization and Cleanup Activities

The Environmental Protection Agency (EPA), through its contractors, completed three hazardous waste site inspections; one in 1980 by Ecology and Environment, Inc. (E&E), one in 1984 by Tetra Tech, Inc. (TTI), and one in 1985 by Tryck, Nyman & Hayes (TNH).

No soil or water samples were collected during the 1980 or 1984 site inspections; however, both inspections indicated that wastewater generated during tanning operations was discharged to a drain field located behind the tannery building, and further assessment was recommended. It was determined that the wastewater most likely contained the following compounds: chromic sulfate, aluminum sulfate, chlorinated phenols, non-chlorinated phenols, sodium salts, proteinaceous waste (animal hair and fat), and detergents and aniline dyes.

During the 1985 site inspection by TNH, numerous soil borings were advanced in and around the drain field using a hand auger. Each boring was advanced between 1 and 10.5 feet below ground surface (BGS). A total of 13 soil samples were collected from the drain field and surrounding area and were analyzed for chemical oxygen demand (COD), chloride, sulfate, total cyanide, total phenol, and various metals. A background soil sample was also collected and analyzed for the same compounds. In addition to the soil samples, water samples were collected from five drinking water wells (DWWs); one from the Frontier Tanning property, and four from adjacent properties based on their proximity to the drain field. The water samples were analyzed for sodium, chloride, and pentachlorophenol.

Analytical results showed that total chromium was present in all the soil samples at concentrations ranging between 120 milligrams per kilogram (mg/kg) and 538 mg/kg; all of which exceed the ADEC cleanup criterion of 25 mg/kg. One of the water samples, collected from the Schlike DWW, located adjacent to and west of the drain field, exhibited a concentration of pentachlorophenol at

0.00091 milligrams per liter (mg/L), which is below of the ADEC cleanup criterion of 0.001 mg/L. No other contaminants were identified in the soil or water samples above ADEC cleanup levels. Based on the water sample results, three of the wells, including the Schlike DWW, were re-sampling in December of 1986. No contaminants were identified above the ADEC cleanup criteria from this effort.

As a protective measure, a plastic holding tank was installed sometime in the late-1980s to contain future wastewater discharged from this site.

In May of 2014, seven test pits were advanced in and around the former drain field area using a hand shovel. Each test pit ranged in depth from 1.5 foot to 3 feet BGS. One composite soil sample was collected from the former drain field area and was analyzed for total chromium, hexavalent chromium, and semi-volatile organic compounds (SVOCs). In addition to the soil sample, the Frontier Tanning DWW was sampled for total chromium and SVOCs.

Total chromium was detected in the soil sample at 650 mg/kg; however, hexavalent chromium was only present at 0.33 mg/kg, which is well below the ADEC cleanup criterion. None of the other analytics were present in the soil sample, and no contaminants were detected in the water sample.

Chromium occurs in the environment in primarily two states; trivalent (+3) and hexavalent (+6). Trivalent chromium is much less toxic than hexavalent chromium, and is an essential element in humans. Hexavalent chromium is known to impact the respiratory tract and is a human carcinogen. Based on analytical results, the chromium is not hexavalent and as such, does not pose an unacceptable risk to human health.

Cumulative Risk Evaluation

Pursuant to 18 AAC 75.325(g), when detectable contamination remains on-site following a cleanup, a cumulative risk determination must be made that the risk from hazardous substances does not exceed a cumulative carcinogenic risk standard of 1 in 100,000 across all exposure pathways and does not exceed a cumulative noncarcinogenic risk standard at a hazard index of one across all exposure pathways.

Based on a review of the environmental record, ADEC has determined that residual contaminant concentrations do not pose a cumulative human health risk.

Exposure Pathway Evaluation

Following investigation and cleanup at the site, exposure to the remaining contaminants was evaluated using ADEC's Exposure Tracking Model (ETM). Exposure pathways are the conduits by which contamination may reach human or ecological receptors. ETM results show all pathways to be one of the following: De-Minimis Exposure, Exposure Controlled, or Pathway Incomplete. A summary of this pathway evaluation is included in Table 2.

Table 2 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	De-Minimis Exposure	Total chromium was present in the surface soils above the ADEC cleanup level; however, hexavalent chromium, which is a human carcinogen and not naturally occurring, was detected at concentrations well below the ADEC cleanup level for chromium. The level of total chromium in the soil is considered background, and does not present a significant expose risk.
Sub-Surface Soil Contact	De-Minimis Exposure	Total chromium was present in the sub-surface soils above the ADEC cleanup level; however, hexavalent chromium, which is a human carcinogen and not naturally occurring, was detected at concentrations well below the ADEC cleanup level for chromium. The level of total chromium in the soil is considered background, and does not present a significant expose risk.
Inhalation – Outdoor Air	Pathway Incomplete	Contaminants of concern are not volatile.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	Contaminants of concern are not volatile.
Groundwater Ingestion	Pathway Incomplete	Groundwater contamination is not present.
Surface Water Ingestion	Pathway Incomplete	Surface water is not used as a drinking water source in the vicinity of the site.
Wild and Farmed Foods Ingestion	Pathway Incomplete	This site is not located in an area that would reasonably be used for foraging activities.
Exposure to Ecological Receptors	Pathway Incomplete	No aquatic or terrestrial routes are present.

Notes to Table 2: "De-Minimis Exposure" means that in ADEC's judgment receptors are unlikely to be affected by the minimal volume or concentration of remaining contamination. "Pathway Incomplete" means that in ADEC's judgment contamination has no potential to contact receptors. "Exposure Controlled" means there is an administrative mechanism in place limiting land or groundwater use, or a physical barrier in place that deters contact with residual contamination.

ADEC Decision

Remaining contamination in soil is below ADEC cleanup criteria. This site will receive a "Closed" designation on the Contaminated Sites Database, subject to the following standard conditions.

Standard Conditions

1. Any proposal to transport soil or groundwater off-site requires ADEC approval in accordance with 18 AAC 75.325. A "site" [as defined by 18 AAC 75.990 (115)] means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership. (See attached site figure.)

2. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.

This determination is in accordance with 18 AAC 75.380 and does not preclude ADEC from requiring additional assessment and/or cleanup action if future information indicates that this site may pose an unacceptable risk to human health or the environment.

Appeal

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99811-1800, within 15 days after receiving the department's decision reviewable under this section. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99811-1800, within 30 days after the date of issuance of this letter, or within 30 days after the department issues a final decision under 18 AAC 15.185. If a hearing is not requested within 30 days, the right to appeal is waived.

If you have questions about this closure decision, please feel free to contact me at (907) 269-7691.

Sincerely,

Joshua Barsis
Environmental Program Specialist III