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AUG 1990 RECEIVED 8HWM-SM

TO: Gregory Oberley, NPL Coordinator

FROM: Susan Kennedy, E & E FIT

DATE: 9 August 1990

SUBJECT: Transmittal of HRS Package Elements for Richardson Flat Tailings, Summit County, Utah, TDD F08-8903-06, PAN FUT0039HDA.

CC: Gerry Snyder, FIT-RPO

Attached are the following draft HRS package elements for Richardson Flat Tailings:

Revised HRS score sheet for the surface water route;
Revised HRS overall score sheet;
Revised Documentation Record; and
Revised Documentation Log Sheet.

Revisions are based on information provided in the State of Utah's memorandum to file (dated 7/6/90), on information provided by the FIT in the Supplemental Site Inspection Report (dated 12/20/89; TDD F08-8903-06) and on conclusions of our meeting of Thursday, 8/1/90. Revisions were made to the most recent version of the Richardson Flat Tailings HRS package in FIT's possession, submitted to EPA Region VIII on 9/3/87 under TDD F08-8703-01.

The HRS Documentation Log Sheet has been updated to reflect what references should be contained in the current package. Reference 3, the Surface Water Route Characteristics Map (attached) replaces the old Reference 3.

Please contact me if I can be of further assistance.

recycled paper

Surface Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1	0	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	(0) 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 (1) 2 3	1	1	3	
Distance to Nearest Surface Water	0 1 (2) 3	2	4	6	
Physical State	0 1 (2) 3	1	2	3	
	Total Route Characteristics Score		7	15	
3 Containment	0 1 2 3	1	3	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
	Total Waste Characteristics Score		26	26	
5 Targets					4.5
Surface Water Use	0 1 (2) 3	3	6	9	
Distance to a Sensitive Environment	(0) 1 2 3	2	0	6	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 (16) 18 20 24 30 32 35 40	1	16	40	
	Total Targets Score		22	55	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			12012	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} =	18.67		

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw}) why?	?	?
Surface Water Route Score (S_{sw})	18.67	348.57
Air Route Score (S_a)	48.46	2348.37
$S_{gw}^2 + S_{sw}^2 + S_a^2$		2696.94
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		51.93
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		30.02

28.5 min.

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Facility name: Richardson Flat Tailings

Location: NW 1/4 Sec. 1; NE 1/4, Sec. 2; T2S, R4E, Summit County, UT

EPA Region: VIII

Person(s) in charge of the facility: United Park City Mines
309 Kearns Bldg.
Salt Lake City, Utah 84101

Name of Reviewer: _____ **Date:** _____

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action; etc.)

Richardson Flat Tailings consists of approximately 2 million tons of mill tailings from metal mines in the Park City area. The tailings are located in an active stream valley. Surface water and air contamination routes were scored.

Scores: $S_M = 30.02$ ($S_{gw} = 0$ $S_{sw} = 18.67$ $S_a = 48.46$)

$S_{FE} = 0$

$S_{DC} = 12.50$

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Richardson Flat Tailings

LOCATION: NW 1/4, Sec. 1; NE 1/4, Sec. 2, T2S, R4E, Summit County, UT

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

Rationale for attributing the contaminants to the facility:

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

The average slope of the entire facility equals $\leq$ 3% (Ref. 17, p. 19, Fig. 2 and 7).

Name/description of nearest downslope surface water:

The diversion ditch, which originates near the eastern border of the tailings, transects the tailings and flows into a small "water pond" near the base of the embankment. A distinct channel from the water pond through the marsh to Silver Creek was documented by Utah BSHW officials (Ref. 18, Fig. 1 and 3).

Average slope of terrain between facility and above-cited surface water body in percent:

The average slope of the terrain between the point where tailings were observed sloughing into the diversion ditch and Silver Creek is approximately 3 percent (Ref. 18, Fig. 3).

Is the facility located either totally or partially in surface water?

The diversion ditch flows through the tailings (Ref. 17, p. 18, Fig. 3, Table 3; Ref. 18).

Is the facility completely surrounded by areas of higher elevation?

No.

1-Year 24-Hour Rainfall in Inches

1.25 inches (Ref. 1, Fig. 8)
Assigned value = 1 (Ref. 1, p. 32)

Distance to Nearest Downslope Surface Water

The distance from the point tailings were observed sloughing into the diversion ditch (Ref. 18, Fig. 1) to Silver Creek is approximately 2,000 feet along the course of the diversion ditch channel (Ref. 3).

Physical State of Waste

The tailings were deposited in the form of a liquid slurry (Ref. 19). They are presently in the form of "fine material".
Assigned value = 2 (Ref. 1, p. 16).

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Surface impoundment: Diking unsound and leaking based on documented contamination in seep samples RFT-OPW-1, RFT-OSE-1 and RFT-OSE-2 (Ref. 17, Tables 4 and 5, Fig. 3 and 7).

The diversion ditch which flows through the tailings discharges to the marsh and Silver Creek constituting lack of containment (Ref. 17, Fig. 7, Ref. 18).

Method with highest score:

Assigned value = 3 (Ref. 1, Table 9)

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

	Toxicity	Persistence
Arsenic	3	3
Lead	3	3
	Ref. 4	Ref. 1, p. 18

Compound with highest score:

Arsenic	18
Lead	18

Ref. 1, p. 18

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Approximately 2 million tons. Ref. 5.

Basis of estimating and/or computing waste quantity:

160 acres (area covered by tailings) Ref. 17, Fig. 2
x 43560 ft^2
6969600 ft^2
x 10 ft_3 (average depth of tailings) Ref. 6, p. 6
69696000 ft^3 ÷ 27 = 2,581,333 yd^3 or tons tailings

* * *

5 TARGETS

Surface Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

Silver Creek is used for irrigation of pastureland and hay fields (Ref. 7, 8, 9; Ref. 17, App. D) but is not used as a drinking water source (Ref. 10).

Is there a tidal influence?

No.

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

None

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

No freshwater wetland (>5 acres) within one mile of the site.

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

None known.
Ref. 11.

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

G.M. Pace Ditch - Diverted from Silver Creek at 500′ N and 625′ W of SE corner of Sec. 35, T1S, R4E (Ref. 12A, Ref. 17, p. 20, Ref. 3).

Pace Spring Ditch - Diverted from Silver Creek at 660′ N and 2145′ W of the E 1/4 corner of Sec. 35, T1S, R4E (Ref. 12C).

Pace & Homer Ditch - Intersects Silver Creek in the S 1/2 Sec. 35, T1S, R4E (Ref. 17, Fig. 3).

The above irrigation ditches are used for flood and sprinkle irrigation of pasturland, alfalfa and grain fields (Ref. 7, 8, 9 and 17, App. D).

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

330	acres irrigated
1.5	persons/acre
494	

Ref. 17, p. 23 and App. D

Total population served:

494

Name/description of nearest of above water bodies:

G.M. Pace Irrigation Ditch diverted from Silver Creek.

Distance to above-cited intakes, measured in stream miles.

The distance from the point tailings were observed sloughing into the diversion ditch (Ref. 18, Fig. 1) to Silver Creek is approximately 2,000 feet. The distance from the point the diversion ditch channel joins Silver Creek to the G.M. Pace Ditch diversion is approximately 2,740 feet measured along the channel of Silver Creek (Ref. 3). The total distance from the hazardous substance to the G.M. Pace diversion equals approximately 4,740 feet.

Containment

Method(s) of waste or leachate containment evaluated:

Surface impoundment: Diking unsound and leaking based on documented contamination in seep samples RFT-OPW-1, RFT-OSE-1 and RFT-OSE-2 (Ref. 17, Tables 4 and 5, Fig. 3 and 7).

The diversion ditch which flows through the tailings discharges to the marsh and Silver Creek constituting lack of containment (Ref. 17, Fig. 7, Ref. 18).

Method with highest score:

Assigned value = 3 (Ref. 1, Table 9)

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

HRS DOCUMENTATION LOG SHEET

SITE NAME Richardson Flat Tailings
CITY Park City **STATE** UT
IDENTIFICATION NUMBER UTD980952840

REFERENCE NUMBER	DESCRIPTION OF THE REFERENCE
1	Uncontrolled Hazardous Waste Site Ranking System - A Users Manual; U.S.
	EPA; 1984.
2	Analytical Results Report for Richardson Flat Tailings; Ecology and
	Environment, Inc. (E & E); 10/25/85, TDD R8-8508-07.
3	Richardson Flat Tailings Surface Water Route Characteristics Map, E & E,
	1990, TDD F08-8903-06.
4	Dangerous Properties of Industrial Materials; 5th ed., N.I. Sax, 1979.
6	Drilling Log for Boring RT-2 in Report of Sampling Activities for
	Richardson Flat Tailings; E & E; 9/30/85.
7	Telecon: S. Kennedy (E & E) to J. Anderson (Utah Div. of Water Rights);
	7/18/85.
8	Telecon: S. Kennedy (E & E) to M. Oliver (J.J. Johnson & Assoc.); 7/18/85.
9	Telecon: S. Kennedy (E & E) to S. Pace (Silver Creek Irrigation Co.);
	7/18/85.
10	Telecon: S. Kennedy (E & E) to C. Mize (Utah Bur. of Public Water Supply);
	7/17/85.
11	Telecon: S. Kennedy (E & E) to L. England (U.S. Fish & Wildlife Service);
	9/04/85.
12	Utah Div. of Water Rights Information Packet; 8/13/87; Includes A) Proposed
	Determination (1924); B) Weber River Decree (1937); and C) Blue-line
	Drainage Plats (1920's); D) Memo to File, S. Kennedy, E & E, 9/29/87.

HRS DOCUMENTATION LOG SHEET

SITE NAME Richardson Flat Tailings
CITY Park City **STATE** UT
IDENTIFICATION NUMBER UTD980952840

REFERENCE NUMBER	DESCRIPTION OF THE REFERENCE
13	Analytical Results Report of Air Sampling at Richardson Flat Tailings;
	E & E; 9/09/87; TDD R8-8608-05.
14	Telecon: S. Kennedy (E & E) to J. Harrington (Park City Planning Division);
	9/04/85.
15	Memo to File: A. Sackman, E & E, 09/02/87.
16	Memo to File: L. Morrison and R. Perlis, E & E, 9/25/87.
17	Supplemental Site Inspection Report, Richardson Flat Tailings; E & E;
	12/20/89, TDD F08-8903-06.
18	Memo to File: M. Slam and J. Knowlton, Utah Bureau of Solid and
	Hazardous Waste (UBSHW), 07/06/90.
19	Memo to File: J. Holcomb, E & E, 7/12/85.