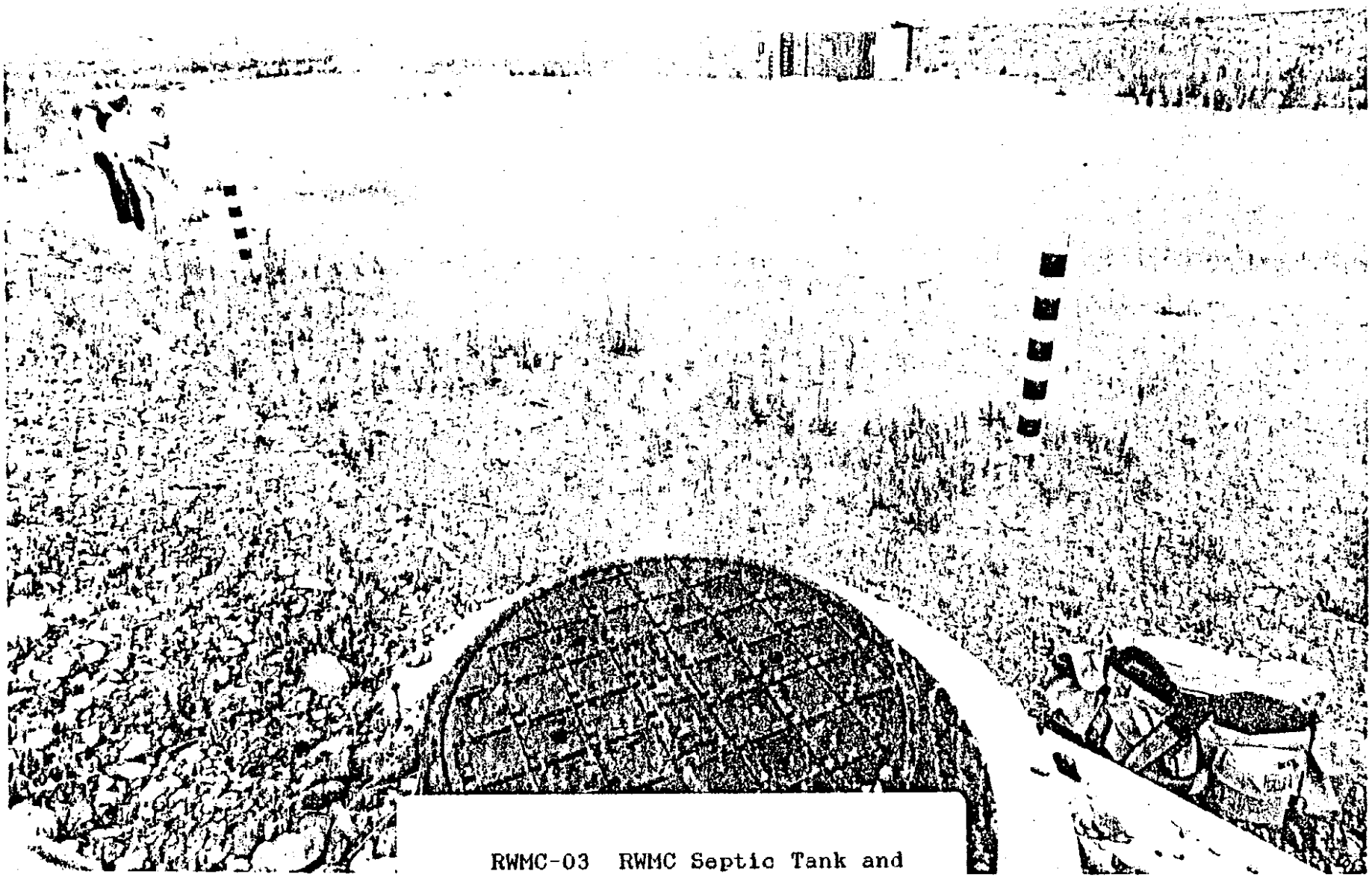

RWMC-03 RWMC Septic Tank and Drainfield for SWEPP

RWMC-03

INITIAL ASSESSMENT FORM

I. SITE NAME AND LOCATION

01 SITE NAME	02 ADDRESS
RWMC Septic Tank and Drainfield for SWEPP	Idaho National Engineering Laboratory (INEL)

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY
Scoville	Idaho		Butte

09 COORDINATES: NORTH	EAST	07 COUNTY CODE	08 CONG. DIST.
6 6 9 1 3 0	2 6 9 3 0 0		

10 DIRECTIONS TO SITE (Starting from nearest public road)
From US 20: SW on Van Buren Blvd; W on Adams Blvd.

II. OWNER/OPERATOR

01 OWNER (If known)	02 STREET ADDRESS
Department of Energy (DOE)	785 DOE Place

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Idaho Falls	Idaho	83402	(208) 526-1122

07 OPERATOR (If known)	08 STREET ADDRESS
EG&G Idaho, Inc.	P.O. Box 1625

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
Idaho Falls	Idaho	83415	(208) 526-1014

III. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION __ YES xx NO DATE __/__/__

02 SITE STATUS (Check one)	03 YEARS RECEIVED HAZ WASTE
xx A. Active SWMU __ B. Inactive __ C. Unknown	none (Start) (Stop) __ Unknown

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
See Waste Information Section

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
See Hazardous Conditions and Incidents Section

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Org.)	03 TELEPHONE NUMBER
Clifford Clark	DOE-ID	(208) 526-1122

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORG.	07 TELEPHONE NUMBER
Terry Alexander	EG&G	HWP	(208) 526-8040

08 DATE
10/01/86
Mon Day Year

WASTE INFORMATION

WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

__A. Solid
__B. Powder Fines
XXC. Sludge
__D. Other _____
__E. Slurry
XXF. Liquid
__G. Gas

02 WASTE QUANTITY AT SITE

TONS _____
CUBIC YARDS 9.9
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

__A. Toxic
__B. Corrosive
__C. Radioactive
__D. Persistent
__E. Soluble
__F. Infectious
__G. Flammable
__H. Ignitable
__I. Highly Volatile
__J. Explosive
__K. Reactive
__L. Incompatible
XXM. Not Applicable

II. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT	COMMENTS
SLU	Sludge			
OLW	Oily Waste			
SOL	Solvents			
PSD	Pesticides			
OCC	Other organic chemicals			
IOC	Inorganic chemicals			
ACD	Acids			
BAS	Bases			
MES	Heavy metals			

.. HAZARDOUS CONSTITUENTS

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STOR/DISP METHOD	05 CONC.	06 MEASURE

SOURCES OF INFORMATION

(Use specific references, e.g., state titles, sample analysis reports, etc.)

Site inspections, personnel interviews, process records, laboratory records.

HAZARDOUS CONDITIONS AND INCIDENTS

I. HAZARDOUS CONDITIONS AND INCIDENTS

01 __ A. GROUNDWATER CONT. 02 __ OBSERVED (Date _____) __ POTENTIAL
03 NARRATIVE DESCRIPTION: __ ALLEGED

Not Applicable

01 __ B. SURFACE WATER CONT. 02 __ OBSERVED (Date _____) __ POTENTIAL
03 NARRATIVE DESCRIPTION: __ ALLEGED

Not Applicable

01 __ C. CONTAMINATION OF AIR 02 __ OBSERVED (Date _____) __ POTENTIAL
03 POULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION __ ALLEGED

Not Applicable

01 __ D. FIRE/EXPLOSIVE CONDITIONS 02 __ OBSERVED (Date _____) __ POTENTIA
03 POPULATION POTENTIALLY AFFECTED _____04 NARRATIVE DESCRIPTION __ ALLEGED

Not Applicable

01 __ E. DIRECT CONTACT 02 __ OBSERVED (Date _____) __ POTENTIAL
03 POPULATION POTENTIALLY AFFECTED _____04 NARRATIVE DESCRIPTION __ ALLEGED

Not Applicable

01 __ F. CONTAMINATION OF SOIL 02 __ OBSERVED (Date _____) __ POTENTIAL
03 NARRATIVE DESCRIPTION: __ ALLEGED

Not Applicable

01 __ G. DRINKING WATER CONTAMINATION 02 __ OBSERVED (Date _____) __ POTENTIAL
03 NARRATIVE DESCRIPTION: __ ALLEGED

Not Applicable

HAZARDOUS CONDITIONS AND INCIDENTS

. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 __ J. DAMAGE TO FLORA 02 __ OBSERVED (Date _____) __ POTENTIAL
__ ALLEGED
04 NARRATIVE DESCRIPTION:
Not Applicable

01 __ K. DAMAGE TO FAUNA 02 __ OBSERVED (Date _____) __ POTENTIAL
__ ALLEGED
04 NARRATIVE DESCRIPTION: (include name(s) of species)
Not Applicable

01 __ L. CONTAMINATION OF FOOD CHAIN 02 __ OBSERVED (Date _____) __ POTENTIAL
__ ALLEGED
04 NARRATIVE DESCRIPTION:
Not Applicable

01 __ M. UNSTABLE CONTAINMENT OF WASTES 02 __ OBSERVED (Date _____) __POTENTIAL
(SPILL RUNOFF, STANDING LIQUIDS/LEAKING DRUMS)
__ ALLEGED
03 NARRATIVE DESCRIPTION:
Not Applicable

__ N. DAMAGE TO OFFSITE PROPERTY 02 __ OBSERVED (Date _____) __ POTENTIAL
__ ALLEGED
NARRATIVE DESCRIPTION:
Not Applicable

01 XX O. CONTAMINATION OF SEWERS,STORM DRAINS, WWTPs 02 __ OBSERVED(Date _____) XX POTENTIAL
__ ALLEGED
04 NARRATIVE DESCRIPTION:
Since the possible waste entering the system is unknown, there is a potential for contamination of the sewer system from normal operations.

01 __ P. ILLEGAL/UNAUTHORIZED DUMPING 02 __ OBSERVED (Date _____) __ POTENTIAL
__ ALLEGED
04 NARRATIVE DESCRIPTION:
Not Applicable

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL OR ALLEGED HAZARDS
Not Applicable

III. COMMENTS NONE

IV. SOURCES OF INFORMATION (List specific references, e.g., state titles, sample analysis, reports)
.e inspections, personnel interview, disposal quantity records, EG&G-WM-6875 Installation Assessment Report, USGS Report IDO-22053 TID-4500 The Influence of Liquid Waste Disposal on the Geochemistry of Water at the NRTS.

PRIORITY RANKING SYSTEM

I. GENERAL FACILITY INFORMATION

FACILITY NAME: Ramc Septic Tank and Drainfield for SWEPP

LOCATION: North of SWEPP

POINT OF CONTACT: NAME: _____

ADDRESS: _____

PHONE: _____

REVIEWER: Terry Alexander DATE: 10/15/86

II. GENERAL FACILITY DESCRIPTION

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

This facility receives sewage from the SWEPP facility. There is no record of hazardous waste entering the system.

III. SCORES

SM = 0 (Sgw= 0 Ssw= 0 Sa= 0)

SFE = 0

SDC = 0

GROUND WATER ROUTE WORKSHEET

RATING FACTOR	ASSIGNED VALUE (Circle one)	MULTI-PLIER	SCORE	MAX. SCORE	REF. Sectio:
					3.2
1.ROUTE CHARACTERISTICS					
Depth to Aquifer of Concern	(0) 1 2 3	2	0	6	
Net Precipitation	(0) 1 2 3	1	0	3	
Permeability of the Unsaturated Zone	0 1 (2) 3	1	2	3	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			5	15	
2.CONTAINMENT	0 1 2 (3)	1	3	3	3.3
3.WASTE CHARACTERISTICS					3.4
Toxicity/Persistence	(0) 3 6 9 12 15 18	1	0	18	
Hazardous Waste Quantity	(0) 1 2 3 4 5 6 7 8	1	0	8	
Total Waste Characteristics Score			0	26	
4. Multiply lines 1 x 2 x 3			0	1170	
5. Divide line 4 by 1170 and multiply by 100	Sgw= 0				

SURFACE WATER ROUTE WORKSHEET

RATING FACTOR	ASSIGNED VALUE (Circle one)	MULTI-PLIER	SCORE	MAX. SCORE	REF Secti
					4.
1.ROUTE CHARACTERISTICS					
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	2	6	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			6	15	
2.CONTAINMENT	0 (1) 2 3	1	1	3	4.
3.WASTE CHARACTERISTICS					4.
Toxicity/Persistence	(0) 3 6 9 12 15 18	1	0	18	
Hazardous Waste Quantity	(0) 1 2 3 4 5 6 7 8	1	0	8	
Total Waste Characteristics Score			0	26	
4. Multiply lines 1 x 2 x 3			0	1170	

5. Divide line 4 by 1170 and multiply by 100 Ssw= 0

AIR ROUTE WORKSHEET

RATING FACTOR	ASSIGNED VALUE (Circle one)	MULTI-PLIER	SCORE	MAX. SCORE	REF. Sectio:
1.HISTORIC RELEASE	(0) 45	1	0	45	5.1
Date and Location: See attached supplement pages					
If line 1 is 0, the Sa = 0. Enter on line 5. If line 1 is 45, then proceed to line 2.					
2.WASTE CHARACTERISTICS					5.2
Reactivity and Incompatibility	(0) 1 2 3	1	0	3	
Toxicity	(0) 1 2 3	3	0	9	
Hazardous Waste Quantity	(0) 1 2 3 4 5 6 7 8	1	0	8	
Total Waste Characteristics Score			0	20	
TARGETS					5.3
Population within 4-mile Radius	0 9 12 15 (18) 21 24 27 30	1	18	30	
Distance to Sensitive Environment	(0) 1 2 3	2	0	6	
Land Use	0 1 2 (3)	1	3	3	
Total Target Scores			21	39	
4. Multiply lines 1 x 2 x 3			0	35100	
5. Divide line 4 by 35100 and multiply by 100 Sa = 0					

	S	S^2
GROUNDWATER ROUTE SCORE (Sgw)	0	0
SURFACE WATER ROUTE SCORE (Ssw)	0	0
AIR ROUTE SCORE (Sa)	0	0
$Sgw^2 + Ssw^2 + Sa^2$		0
$SQR(Sgw^2 + Ssw^2 + Sa^2)$		0
$SQR(Sgw^2 + Ssw^2 + Sa^2)/1.73 = SM$		0

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: 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. Include the location of the document.

FACILITY NAME: RWMC Septic Tank and Drainfield for SWEPP

LOCATION: North of SWEPP

DATE SCORED: 10/15/86

PERSON SCORING: Terry Alexander

PRIMARY SOURCE(S) OF INFORMATION:
Site visit, drawings

FACTORS NOT SCORED DUE TO INSUFFICIENT INFORMATION:

COMMENTS OR QUALIFICATIONS:

GROUNDWATER ROUTE

1. OBSERVED RELEASE - Undertake Corrective Action

   Contaminants detected (3 maximum):

   None

   Rationale for attributing the contaminants to the facility:

2. ROUTE CHARACTERISTICS

   Depth to Aquifer of Concern

   Name/description of aquifer(s) of concern:

   Snake River Plain Aquifer

   Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

   480 ft

   Depth from the ground surface to the lowest point of waste disposal/ storage:

   ~0 ft

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

9.07 inches

Mean annual lake or seasonal evaporation (list months for seasonal):

36 inches

Net precipitation (subtract the above figures):

- 26.93 inches

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

An interbedded sequence of basaltic lava flows and sedimentary deposits.

Permeability associated with soil type:

10^{-7} to 10^{-3} cm/sec

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

liquid, solid

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

None

Method of highest score:

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

None known - Sewage

Compound with highest score:

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):

None

Basis of estimating and/or computing waste quantity:

	Yes	No
Identifying Release		
1. Potential for Groundwater Releases from the Unit		
o Unit type and design		
- Does the unit type (e.g., land-based) indicate the potential for release?	✓	
- Does the unit have engineered structures (e.g., liners, leachate collection systems, proper construction materials) designed to prevent releases to groundwater?		✓
o Unit operation		
- Does the unit's age (e.g., old unit) or operating status (e.g., inactive, active) indicate the potential for release?		✓
- Does the unit have poor operating procedures that increase the potential for release?		✓
- Does the unit have compliance problems that indicate the potential for a release to groundwater?		✓
o Physical condition		
- Does the unit's physical condition indicate the potential for release (e.g., lack of structural integrity, deteriorating liners, etc.)?		✓
o Locational characteristics		
- Is the unit located on permeable soil so the release could migrate through the unsaturated soil zone?	✓	
- Is the unit located in an arid area where the soil is less saturated and therefore a release has less potential for downward migration?	✓	
- Does the depth from the unit to the uppermost aquifer indicate the potential for release?		✓

	Yes	No
- Does the rate of groundwater flow greatly inhibit the migration of a release from the facility?	✓	
- Is the facility located in an area that recharges surface water?		✓
o Waste characteristics		
- Does the waste in the unit exhibit high or moderate characteristics of mobility (e.g., tendency not to sorb soil particles or organic matter in the unsaturated zone)?		✓
- Does the waste exhibit high or moderate levels of toxicity?		✓
2. Evidence of Groundwater Releases		
o Existing groundwater monitoring systems		
- Is there an existing system?		✓
- Is the system adequate?		✓
- Are there recent analytical data that indicate a release?		✓
o Other evidence of groundwater releases		
- Is there evidence of contamination around the unit (e.g., discolored soils, lack of or stressed vegetation) that indicates the potential for a release to groundwater?		✓
- Does local well water or spring water sampling data indicate a release from the unit?		✓
Determining the Relative Effect of the Release on Human Health and the Environment		
1. Exposure Potential		
o Conditions that indicate potential exposure		
- Are there drinking water well(s) located near the unit?		✓
- Does the direction of groundwater flow indicate the potential for hazardous constituents to migrate to drinking water wells?		✓

SURFACE WATER ROUTE

1. OBSERVED RELEASE - Undertake Corrective Action

Contaminants detected in surface water at the facility or downhill from it (3 maximum):

None

Rationale for attributing the contaminants to the facility:

2. ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

2%

Name/description of nearest downslope surface water:

Big Host River

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

10%

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

NO

Is the facility completely surrounded by areas of high elevation?

No

1-year 24-Hour Rainfall in Inches

less than 2 inches

Distance to Nearest Downslope Surface Water

2 miles

Physical State of Waste

Liquid, solid

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Buried Tank, flow through system

Method with highest score:

Checklist for Surface Water/Surface Drainage Releases

	Yes	No
Identifying Releases		
1. Potential for Surface Water/Surface Drainage Release from the Facility		
o Proximity to Surface Water and/or to Off-site Receptors		
- Could surface run-off from the unit reach the nearest downgradient surface water body?	✓	
- Could surface run-off from the unit reach off-site receptors (e.g., if facility is located adjacent to populated areas and no barrier exists to prevent overland surface run-off migration)?		✓
o Release Migration Potential		
- Does the slope of the facility and intervening terrain indicate potential for release?		✓
- Is the intervening terrain characterized by soils and vegetation that allow overland migration (e.g., clayey soils, and sparse vegetation)?		✓
- Does data on one-year 24-hour rainfall indicate the potential for area storms to cause surface water or surface drainage contamination as a result of run-off?		✓
o Unit Design and Physical Condition		
- Are engineered features (e.g., run-off control systems) designed to prevent release from the unit?		✓
- Does the operational history of the unit indicate that a release has taken place (e.g., old, closed or inactive unit, not inspected regularly, improperly maintained)?		✓
- Does the physical condition of the unit indicate that releases may have occurred (e.g., cracks or stress factures in tanks or erosion of earthen dikes of surface impoundments)?		✓

Checklist for Surface Water/Surface Drainage Releases

	Yes	No
o Waste Characteristics		
- Is the volume of discharge high relative to the size and flow rate of the surface water body?	___	✓
- Do constituents in the discharge tend to sorb to sediments (e.g., metals)?	✓	___
- Do constituents in the discharge tend to be transported downstream?	___	✓
- Do waste constituents exhibit moderate or high characteristics of persistence (e.g., PCBs, dioxins, etc.)?	___	✓
- Do waste constituents exhibit moderate or nigh characteristics of toxicity (e.g., metals, chlorinated pesticides, etc.)?	___	✓
2. Evidence of Surface Water/Surface Drainage Releases		
o Are there unpermitted discharges from the facility to surface water that require an NPDES or a Section 404 permit?	___	✓
o Is there visible evidence of uncontrolled run-off from units at the facility?	___	✓
Determining the Relative Effect of the Release on Human Health and the Environment		
1. o Are there drinking water intakes nearby?	___	✓
o Could human and/or environmental receptors come into contact with surface drainage from the facility?	___	✓
o Are there irrigation water intakes nearby?	___	✓
o Could a sensitive environment (e.g., critical habitat, wetlands) be affected by the discharge (if it is nearby)?	___	✓

AIR ROUTE

1. OBSERVED RELEASE

Contaminants detected:

None

Date and Location of detection of contaminants:

Methods used to detect the contaminants:

Rationale for attributing the contaminants to the site:

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

None

Most incompatible pair of compounds:

None

Toxicity

Most toxic compound:

None

Hazardous Waste Quantity

Total quantity of hazardous waste:

None

Basis of estimating and/or computing waste quantity:

	Yes	No

Identifying Releases

1. Potential for Air Releases from the Facility

   o Unit Characteristics

   - Is the unit operating and does is expose waste to the atmosphere? ___ ✓

   - Does the size of the unit (e.g., depth and surface area) create a potential for air release? ___ ✓

   o Does the unit contain waste that exhibits a moderate or high potential for vapor phase release?

   - Does the unit contain hazardous constituents of concern as vapor releases? ___ ✓

   - Do waste constituents have a high potential for volatilization (e.g., physical form, concentrations, and constituent-specific physical and chemical parameters that contribute to volatilization)? ___ ✓

   o Does the unit contain waste and exhibit site conditions that suggest a moderate or high potential for particulate release?

   - Does the unit contain hazardous constituents of concern as particulate releases? ___ ✓

   - Do constituents of concern as particulate releases (e.g., smaller, inhalable particulates) have potential for release via wind erosion, reentrainment by moving vehicles, or operational activities? ___ ✓

   - Are particulate releases comprised of small particles that tend to travel off-site? ___ ✓

   o Do certain environmental and geographic factors affect the concentrations of airborne contaminants?

   - Do atmospheric/geographic conditions limit constituent dispersion (e.g., areas with atmospheric conditions that result in inversions)? ___ ✓

   - Is the facility located in a hot, dry area? ✓ ___

	Yes	No
2. Evidence of Air Releases		
o Does on-site monitoring data show that releases have occurred or are occurring (e.g., OSHA data)?	___	✓
o Have particulate emissions been observed at the site?	___	✓
o Have there been citizen complaints concerning odors or observed particulate emissions from the site?	___	✓
Determining the Relative Effect of the Release on Human Health and the Environment		
1. Exposure Potential		
o Is a populated area located near the site?	___	✓

Checklist for Subsurface Gas Releases

	Yes	No
Identifying a Release		
1. Potential for Subsurface Gas Releases		
o Does the unit contain waste that generates methane or generates volatile constituents that may be carried by methane (e.g., decomposable refuse/volatile organic wastes)?	✓	
o Is the unit an active or closed landfill or a unit closed as a landfill (e.g., surface impoundments and waste piles)?		✓
2. Migration of Subsurface Gas to On-site or Off-site Buildings		
o Are on-site or off-site buildings close to the unit?		✓
o Do natural or engineered barriers prevent gas migration from the unit to on-site or off-site buildings (e.g., low soil permeability and porosity hydrogeologic barriers/liners, slurry walls, gas control systems)?	✓	
o Do natural site characteristics or man-made structures (e.g., underground power transmission lines, sewer pipes/sand and gravel lenses) facilitate gas migration from the unit to buildings?		✓
Determining the Relative Effect of the Release on Human Health and the Environment		
1. Exposure Potential		
o Does building usage (e.g., residential, commercial) exhibit high potential for exposure?		✓

1. CONTAINMENT

Hazardous substances present:

None

Type of containment, if applicable:

None

2. WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

None

Ignitability

Compound used:

None

Reactivity

Most reactive compound:

None

Incompatibility

Most incompatible pair of compounds:

None

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

None

Basis of estimating and/or computing waste quantity:

3. TARGETS

Distance to Nearest Population

100 ft

Distance to Nearest Building

30 ft

Distance to Sensitive Environment

Distance to wetlands:

Greater than 100 feet

Distance to critical habitat:

Greater than 1/2 mile

Land Use

Distance to commercial/industrial area, if 1 mile or less:

The INEL is a research facility. There are no commercial/ industrial facilities within 1 mile.

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Greater than 2 miles

Distance to residential area, if 2 miles or less:

Greater than 2 miles

Distance to agricultural land in production within past 3 years, if 1 mile or less:

Greater than 1 mile

Distance to prima agricultural land in production within past 3 years, if 2 miles or less:

Greater than 2 miles

If a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

Great Southern Butte

EBR-1 Reactor

Population Within 2-Mile Radius

51

Buildings Within 2-Mile Radius

14

1. OBSERVED INCIDENT

Date, location, and pertinent details of incident:

None

2. ACCESSIBILITY

Describe type of barrier(s):

Buried

3. CONTAINMENT

Type of containment, if applicable:

None

4. WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

None

Compound with highest score:

5. TARGETS

Population within one-mile radius

33

Distance to critical habitat (of endangered species)

Greater than 1 mile

Appendix B

Track 1 Risk Evaluation Summary

TRACK 1 RISK EVALUATION SUMMARY

DATE: 09/23/92

SITE: RWMC-01

SUMMARY:

A Track 1 assessment was conducted to establish risk-based soil screening concentrations to evaluate potential hazardous contaminants at RWMC-01. The dimensions of the contaminated region are: 22.86 m long, 7.28 m wide, and 0.91 m deep. It should be noted that the greatest distance was set parallel to the groundwater flow direction. The following contaminants were evaluated:

Inorganics: barium

Organics: 2-butanone, m-cresol, and p-cresol

Radionuclides: none

Some toxicity data are inadequate and are so indicated in the attached tables. Noncarcinogenic factor for inhalation of barium is under review by an EPA Reference Dose/Reference Concentration Work Group. None of the compounds evaluated are classified by the EPA as a class A or B carcinogen. Toxicity data were obtained from the EPA's *Integrated Risk Information System* and the *Health Effects Summary Table*, 1992. No credit was taken for any chemical degradation that may occur.

Summary tables of risk-based soil screening concentrations for each contaminant evaluated in the Track 1 assessment are attached. The evaluation followed the approach outlined in the *Track 1 Sites: Guidance for Assessing Low Probability Hazard Sites at INEL, Final*, [DOE/ID-10340(91), April 1992]. The calculation of soil screening concentrations was based on a target risk level representing a hazard quotient of 1 (based on noncarcinogenic effects) or a cancer risk of 1.0E-06 (based on carcinogenic effects).

Four potential exposure pathways were considered, as applicable to the contaminants: soil ingestion, inhalation of fugitive dust, inhalation of volatile organic compounds and groundwater ingestion. The shaded box in the attached tables shows the lowest risk-based concentration soil concentration for each contaminant. The ingestion of groundwater pathway provided the most significant risk (lowest risk-based screening soil concentration) for all the evaluated contaminants except for 2-butanone. The inhalation of the volatiles was the exposure pathway of concern for this compound.

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR RIVMC-01 SOIL CONTAMINATION FOR BARIUM

Exposure Pathways	Scenarios			
	Occupational		Residential	
	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/Kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	**	1.40E+05	**	1.89E+04
Inhalation of Fugitive Dust	**	3.36E+05	**	2.44E+05
Inhalation of Volatiles	NA	NA	NA	NA
Groundwater Ingestion	NA	NA	**	3.33E+03

NA = Not Applicable
** = Calculation not performed because due to lack of a published toxicity value
Shaded box = Lowest risk-based soil concentration

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR RIVMC-01 SOIL CONTAMINATION FOR 2-BUTANONE

Exposure Pathways	Scenarios			
	Occupational		Residential	
	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	NA	**	NA	**
Inhalation of Fugitive Dust	NA	6.72E+08	NA	4.87E+08
Inhalation of Volatiles	NA	1.40E+06	NA	1.12E+06
Groundwater Ingestion	NA	NA	NA	**

NA = Not Applicable
** = Calculation not performed because there is no EPA-accepted toxicity value
Shaded box = Lowest risk-based soil concentration

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR RIVMC-01 SOIL CONTAMINATION FOR m-CRESOL

Exposure Pathways	Scenarios			
	Occupational		Residential	
	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/Kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	NA	1.00E+05	NA	1.35E+04
Inhalation of Fugitive Dust	NA	**	NA	**
Inhalation of Volatiles	NA	NA	NA	NA
Groundwater Ingestion	NA	NA	NA	2.44E+01

NA = Not Applicable
** = Calculation not performed because there is no EPA-accepted toxicity value
Shaded box = Lowest risk-based soil concentration

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR RIVMC-01 SOIL CONTAMINATION FOR p-CRESOL

Exposure Pathways	Scenarios			
	Occupational		Residential	
	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/Kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	NA	1.00E+05	NA	1.35E+04
Inhalation of Fugitive Dust	NA	**	NA	**
Inhalation of Volatiles	NA	NA	NA	NA
Groundwater Ingestion	NA	NA	NA	2.24E+01

NA = Not Applicable
** = Calculation not performed because there is no EPA-accepted toxicity value
Shaded box = Lowest risk-based soil concentration

TRACK 1 RISK EVALUATION SUMMARY

DATE: 09/23/92

SITE: RWMC-02

SUMMARY:

A Track 1 assessment was conducted to establish risk-based soil screening concentrations to evaluate potential hazardous contaminants at RWMC-02. The dimensions of the contaminated region are: 30.48 m long, 3.64 m wide, and 0.91 m deep. It should be noted that the greatest distance was set parallel to the groundwater flow direction. The following contaminants were evaluated:

Inorganics: barium

Organics: 2-butanone, m-cresol, and p-cresol

Radionuclides: none

Some toxicity data are inadequate and are so indicated in the attached tables. Noncarcinogenic factor for inhalation of barium is under review by an EPA Reference Dose/Reference Concentration Work Group. None of the compounds evaluated are classified by the EPA as a class A or B carcinogen. Toxicity data were obtained from the EPA's *Integrated Risk Information System* and the *Health Effects Summary Table*, 1992. No credit was taken for any chemical degradation that may occur.

Summary tables of risk-based soil screening concentrations for each contaminant evaluated in the Track 1 assessment are attached. The evaluation followed the approach outlined in the *Track 1 Sites: Guidance for Assessing Low Probability Hazard Sites at INEL, Final*, [DOE/ID-10340(91), April 1992]. The calculation of soil screening concentrations was based on a target risk level representing a hazard quotient of 1 (based on noncarcinogenic effects) or a cancer risk of 1.0E-06 (based on carcinogenic effects).

Four potential exposure pathways were considered, as applicable to the contaminants: soil ingestion, inhalation of fugitive dust, inhalation of volatile organic compounds and groundwater ingestion. The shaded box in the attached tables shows the lowest risk-based concentration soil concentration for each contaminant. The ingestion of groundwater pathway provided the most significant risk (lowest risk-based screening soil concentration) for all the evaluated contaminants except for 2-butanone. The inhalation of the volatiles was the exposure pathway of concern for this compound.

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR RIVMC-02 SOIL CONTAMINATION FOR BARIUM

Exposure Pathways	Scenarios			
	Occupational		Residential	
	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/Kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	**	1.40E+05	**	1.89E+04
Inhalation of Fugitive Dust	**	6.72E+05	**	4.87E+05
Inhalation of Volatiles	NA	NA	NA	NA
Groundwater Ingestion	NA	NA	**	3.05E+03

NA = Not Applicable
** = Calculation not performed because due to lack of a published toxicity value
Shaded box = Lowest risk-based soil concentration

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR
RIDMC-02 SOIL CONTAMINATION FOR 2-BUTANONE

Exposure Pathways	Scenarios			
	Occupational		Residential	
	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	NA	**	NA	**
Inhalation of Fugitive Dust	NA	1.34E+09	NA	9.75E+08
Inhalation of Volatiles	NA	2.81E+06	NA	2.24E+06
Groundwater Ingestion	NA	NA	NA	**

NA = Not Applicable
** = Calculation not performed because there is no EPA-accepted toxicity value
Shaded box = Lowest risk-based soil concentration

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR RIVMC-02 SOIL CONTAMINATION FOR m-CRESOL

Exposure Pathways	Scenarios			
	Occupational		Residential	
	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/Kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	NA	1.00E+05	NA	1.35E+04
Inhalation of Fugitive Dust	NA	**	NA	**
Inhalation of Volatiles	NA	NA	NA	NA
Groundwater Ingestion	NA	NA	NA	1.90E+01

NA = Not Applicable
** = Calculation not performed because there is no EPA-accepted toxicity value
Shaded box = Lowest risk-based soil concentration

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR RIVMC-02 SOIL CONTAMINATION FOR p-CRESOL

Exposure Pathways	Scenarios			
	Occupational		Residential	
	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/Kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	NA	1.00E+05	NA	1.35E+04
Inhalation of Fugitive Dust	NA	**	NA	**
Inhalation of Volatiles	NA	NA	NA	NA
Groundwater Ingestion	NA	NA	NA	1.75E+01

NA = Not Applicable
** = Calculation not performed because there is no EPA-accepted toxicity value
Shaded box = Lowest risk-based soil concentration

TRACK 1 RISK EVALUATION SUMMARY

DATE: 09/23/92

SITE: RWMC-03

SUMMARY:

A Track 1 assessment was conducted to establish risk-based soil screening concentrations to evaluate potential hazardous contaminants at RWMC-03. The dimensions of the contaminated region are: 11.43 m long, 6.37 m wide, and 0.91 m deep. It should be noted that the greatest distance was set parallel to the groundwater flow direction. The following contaminants were evaluated:

Inorganics: barium

Organics: 2-butanone, m-cresol, and p-cresol

Radionuclides: none

Some toxicity data are inadequate and are so indicated in the attached tables. Noncarcinogenic factor for inhalation of barium is under review by an EPA Reference Dose/Reference Concentration Work Group. None of the compounds evaluated are classified by the EPA as a class A or B carcinogen. Toxicity data were obtained from the EPA's *Integrated Risk Information System* and the *Health Effects Summary Table*, 1992. No credit was taken for any chemical degradation that may occur.

Summary tables of risk-based soil screening concentrations for each contaminant evaluated in the Track 1 assessment are attached. The evaluation followed the approach outlined in the *Track 1 Sites: Guidance for Assessing Low Probability Hazard Sites at INEL, Final*, [DOE/ID-10340(91), April 1992]. The calculation of soil screening concentrations was based on a target risk level representing a hazard quotient of 1 (based on noncarcinogenic effects) or a cancer risk of 1.0E-06 (based on carcinogenic effects).

Four potential exposure pathways were considered, as applicable to the contaminants: soil ingestion, inhalation of fugitive dust, inhalation of volatile organic compounds and groundwater ingestion. The shaded box in the attached tables shows the lowest risk-based concentration soil concentration for each contaminant. The ingestion of groundwater pathway provided the most significant risk (lowest risk-based screening soil concentration) for all the evaluated contaminants except for 2-butanone. The inhalation of the volatiles was the exposure pathway of concern for this compound.

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR AUMC-03 SOIL CONTAMINATION FOR BARIUM

Exposure Pathways	Scenarios			
	Occupational		Residential	
	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/Kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	**	1.40E+05	**	1.89E+04
Inhalation of Fugitive Dust	**	3.84E+05	**	2.79E+05
Inhalation of Volatiles	NA	NA	NA	NA
Groundwater Ingestion	NA	NA	**	4.82E+03

NA = Not Applicable
** = Calculation not performed because due to lack of a published toxicity value
Shaded box = Lowest risk-based soil concentration

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR RUMC-03 SOIL CONTAMINATION FOR 2-BUTANONE

Exposure Pathways	Scenarios			
	Occupational		Residential	
	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/Kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	NA	**	NA	**
Inhalation of Fugitive Dust	NA	7.68E+08	NA	5.57E+08
Inhalation of Volatiles	NA	1.61E+06	NA	1.28E+06
Groundwater Ingestion	NA	NA	NA	**

NA = Not Applicable
** = Calculation not performed because there is no EPA-accepted toxicity value
Shaded box = Lowest risk-based soil concentration

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR RWMC-03 SOIL CONTAMINATION FOR m-CRESOL

Exposure Pathways	Scenarios			
	Occupational		Residential	
	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/Kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	NA	1.00E+05	NA	1.35E+01
Inhalation of Fugitive Dust	NA	**	NA	**
Inhalation of Volatiles	NA	NA	NA	NA
Groundwater Ingestion	NA	NA	NA	4.61E+01

NA = Not Applicable
** = Calculation not performed because there is no EPA-accepted toxicity value
Shaded box = Lowest risk-based soil concentration

SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR RIVMC-03 SOIL CONTAMINATION FOR p-CRESOL

Exposure Pathways	Scenarios			
	Occupational		Residential	
	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/Kg)	Soil Concentration at 1E-06 Risk (mg/kg)	Soil Concentration at HQ = 1 (mg/kg)
Soil Ingestion	NA	1.00E+05	NA	1.35E+04
Inhalation of Fugitive Dust	NA	**	NA	**
Inhalation of Volatiles	NA	NA	NA	NA
Groundwater Ingestion	NA	NA	NA	4.25E+01

NA = Not Applicable
** = Calculation not performed because there is no EPA-accepted toxicity value
Shaded box = Lowest risk-based soil concentration

APPENDIX C

METHOD OF CONVERTING TCLP VALUES TO MG/KG OF SOIL

EG&G Idaho

"Providing research and development services to the government"

INTEROFFICE CORRESPONDENCE

Date: February 4, 1992

To: Shannon Waters

From: James Biggs

Subject: CONVERTING EP TOXICITY AND TCLP VALUES TO mg/kg OF SOIL

Based on your conversation with Frank Calovini of the EPA test methods hot line, I will be using the following method to convert EP Toxicity and TCLP values to units we can use in our Track-1 risk assessments:

$$\text{Estimated soil concentration (mg/kg)} = \frac{(\text{TCLP or EP Toxicity mg/L}) \times (2.0\ \text{L})}{(0.1\ \text{kg})}$$

mg/kg	=	estimated concentration in soil
0.1 kg	=	amount on solid sample used in EP Toxicity and TCLP extraction (method 1310)
2.0 L	=	final volume of leachate in EP toxicity and TCLP extraction

Although this is the method Mr Calovini suggests, and is the one he says many organizations in our situation are using, I think we should bear in mind that this conversion will give us soil concentration estimates which are artificially low. It assumes (incorrectly) that all of the contaminant in a soil sample is extracted into the leachate.

It is not clear by how much this simplifying assumption will throw our answers off, but it is clear that it will give us answers which are lower than reality, i.e. non-conservative. Could Mr. Calovini, or some other representative of the EPA, send us a letter which points out that this conversion is something we are trying at their suggestion?

SJB

cc: Tiffany Benson
Karen Izbicki
Sandy Sollender
Stella Steele

EG&G Idaho, Inc.

Form: EG&G-561

MEMO OF CONVERSATION

Person Calling: Shannon Waters Date: 11/19/91

Representing Org.: Env. Tech. Time: 940

Person Called: Frank Calovini Phone No.: (703) 821-4789

Representing Company: EPA Office of Solid Waste Method Information Communication Exchange

City:

Subject: Test Methods conversion

How do we convert/compare the results from EP Tox and TCLP to concentrations in soil? We need to talk with our regulator, but basically, if we calculate the dilution factors in, then it should be o.k. Talk this approach over with our regulator.

Signature

EG&G Idaho, Inc.

Form: EG&G-561

MEMO OF CONVERSATION

Person Calling	Shannon Waters	Date 1/24/91	
Representing Org.	Env. Tech.	Time 1250	
Person Called	Lisa Green	Phone No.	6-0417
Representing Company	DOE-ID		
City	Idaho Falls		
Subject	Use of Dilution Factors to caluculate mg/kg from mg/L EP tox results		

She said that she spoke with Dean Nygard and Wayne Pierre (State of Idaho and EPA) about using the dilution factors to back-calculate the concentration in soils and that it sounds like a reasonable approach. Go ahead and use that for the Track 1s.

Signature Shannon Waters

EG&G Idaho, Inc.
FORM EG&G-2631 (Rev.12-88)

Project File No. _____
EDF Serial No. RWMC-505
Functional File Number _____

ENGINEERING DESIGN FILE

Date 09-26-91

Project/Task RADIOACTIVE WASTE MANAGEMENT COMPLEX
Subtask SEWER SYTEMS

EDF Page 1 of 1

Subject: Sample analysis results from sampling of the RWMC/SWEPP septic systems.

CTS Item 7100-02919, which was a TIGER TEAM Daily observation, stated that the three (3) septic systems have not been analyzed for radiation contamination, volatile organic constituents (VOC) or heavy metals.

SWRRS835x was written and seven (7) samples were taken from the RWMC septic systems. The samples were sent by EG&G Environmental Monitoring to Radiation Measurements Laboritory (RML) and VISTA Laboritories Inc. for the sample analysis. The sample results are attached with letter LJPW-76-91. The summerized results of the samples were as follows: 1) no manmade radionuclides were detected in the samples, 2) TCLP constituents are summerized in letter LJPW-76-91, all detected concentrations are below the regulatory limits.

Attached to this EDF is the following information:
- Letter, Closure of EMS-110-91 - LJPW-76-91
- Vista Laboritories Inc letter
- Letter, GAMMA analysis of seven RWMC septic Tank Samples - TJH-75-91
- TCLP Test Data Sheets

DISTRIBUTION (COMPLETE PACKAGE): PROJECT EDF FILE LOG

DISTRIBUTION (COVER SHEET ONLY): EDF SERIAL NO.LOG, D.L. French M/S 4201, S.B. French M/S 4202, J.C. Kvamme M/S 4201

AUTHOR	DEPT.	REVIEWED	DATE	APPROVED	DATE
Robert S Morson	7110	John B Jenkins	9/26/91	[signature]	9/30/91

EG&G Idaho

"Providing research and development services to the government"

File: Septic Tanks

INTEROFFICE CORRESPONDENCE

Date: July 29, 1991

To: J. A. Johnson, MS 4133

From: T. J. Haney, MS 7111

Subject: GAMMA ANALYSIS OF SEVEN RWMC SEPTIC TANK SAMPLES - TJH-75-91

Four liquid and three semi-solid septic tank samples from the RWMC were submitted to the Radiation Measurements Laboratory (RML) for an analysis to determine whether any gamma-ray-emitting radionuclide contaminants were present. The solid samples were counted in the 500cc squat jar soil geometry for two hours. The liquid samples were counted for 16 hours in a 540ml liquid bottle geometry. The samples were counted on RML gamma-spectrometers and were analyzed by the gamma-spectrometric analysis program VAX/CBAT. The results of the analyses of these samples are listed below.

Sample ID	RML ID	Manmade Radionuclides	Activity(T) (pCi/gm)
11007179106D	A6072391024	None Detected	N/A
11007179104D	A5072591022	None Detected	N/A
11007179101E	A6072591023	None Detected	N/A
11007179103D	A5072691028	None Detected	N/A
11007179102E	D3072291074	None Detected	N/A
11007179105E	D1072291072	None Detected	N/A
11007179107E	D2072291073	None Detected	N/A

The analysis results were carefully examined by experienced and trained gamma spectroscopists. No manmade gamma-emitting radionuclide contaminants were detected in these samples.

max

cc: L. D. Koeppen DK
C. L. Rowsell
Central Files
T. J. Haney File

EG&G Idaho

"Providing research and development services to the government"

INTEROFFICE CORRESPONDENCE

Date: September 13, 1991

To: S. B. French, MS 4202

From: L. J. Peterson-Wright, MS 4110

Subject: CLOSURE OF EMS-110-91 - LJPW-76-91

This report is in response to your July 2, 1991, request for sampling and analysis of RWMC septic tank contents for TCLP and transuranic constituents.

On July 17, 1991, representative samples were collected following the procedures in Quality Assurance/Work Plan EMS-110-91 (see Attached). The samples were submitted under chain-of-custody to VISTA Laboratories Inc., of Broomfield, Colorado, for the requested analyses (See Attached).

There were no manmade radionuclides detected in the samples. Detection of TCLP constituents are summarized below. Please note that all detected concentrations are below the regulatory limits.

Sample Locations	Metals	Pesticides	Herbicides	Volatiles	Semi-Volatiles
WMF 617 distribution (solid)	ND	ND	ND	ND	m & p cresols (100 ppb)
WMF 613 (solid)	Barium (5ppb)	ND	ND	ND	m & p cresols (1,100 ppb)
WMF 613 (liquid)	ND	ND	ND	ND	m & p cresols (490 ppb)
WMF 601 (solid)	ND	ND	ND	ND	m & p cresols (52 ppb)
WMF 601 (liquid)	ND	ND	ND	ND	ND
WMF 617 (solid)	ND	ND	ND	Methylethyl ketone (33 ppb)	m & p cresols (210 ppb)
WMF 617 (liquid)	ND	ND	ND	Methylethyl ketone (42 ppb)	ND

ND= not detected
All data meets project data quality objectives as defined in Quality Assurance Sampling and Analysis Plan EMS-110 -91.

If there are any questions or if you have other sampling and analysis needs, please feel free to contact me at 6-8409.

cae

Attachments:
As Stated

cc: (w/o Attach)
T. G. Hedahl, MS 3403
J. M. Welch, MS 4110

(with Attach)
J. A. Johnson, MS 4110
Central Files, MS 1651
L. J. Peterson-Wright Files