

INVESTIGATION REPORT

11/13/1998

I. GENERAL INFORMATION

Company Name: California Western Railroad (Skunk Train)

Facility Address: 299 E. Commercial Street, Willits, CA
100 E. Laurel Street, Fort Bragg, CA

EPA ID Number: CAD066125758

Facility Type: Private

Regulated Units: Storage in containers and tanks (railcar)

Waste Streams: Waste oil, batteries, paint

Regulatory Status: Generator

Inspected by: Michael Pixton

Date of Investigation: September 23, 1998

Type of Inspection: CEI CME O&M Focused Limited
 or Investigation
 Facility Rep.: Mr. Gary Milliman Complaint #02-0398-0208

Type of Business: Private railroad

II. CONSENT

Consent to conduct inspection that involves: taking photographs, reviewing and copying records, questioning personnel and inspecting hazardous waste handling areas.

Consent given by (name and title): Mr. Gary Milliman, President

III. DOCUMENTS REVIEWED (circle all reviewed)

a. Manifests, Bills of Lading, LDR's and Exception Reports:

I briefly looked at a few manifests unrelated to waste oil and obtained a copy of a receipt for the purchase of recycled oil from Walsh Oil (Attachment G).

b. Other:

I obtained a copy of the cover page for the grant (Attachment F) from the California Integrated Waste Management Board (CIWMB) to the Skunk Train for research on burning waste oil.

IV. NARRATIVE OF OBSERVATIONS/DISCUSSION WITH OPERATOR

On September 23, 1998 I arrived at the 299 Commercial Street, Willits address for the California Western Railroad (Skunk Train) and met Mr. Trey Strickland, Mendocino County Department of Public Health (County). Mr. Strickland gave me an unsigned copy of the letter (Attachment C) he had sent to the Skunk Train about their waste oil management. I spoke with Ms. Ethel Woodruff, Ticket Agent and Mr. Jerry Copeland, Conductor who both informed me that the only work done on the train at this station was janitorial cleaning of the interior of the cars. All maintenance work is conducted at the 100 E. Laurel Street, Fort Bragg terminal. Mr. Strickland and I then drove to the Fort Bragg terminal.

Locomotive #45 arrived (Attachment A, photo #1) at the same time as we did. When we entered the ticket

Investigation Report

office I asked to speak with Ms. Lynn Hakin, Chief Operations Officer. Ms. Hakin referred us to Mr. Gary Milliman, President. After I explained why we were present Mr. Milliman gave his consent for us to conduct the investigation and stated that the allegation of burning waste oil was false. Mr. Milliman escorted us into his office and explained that the Skunk Train had grant from the California Integrated Waste Management Board (CIWMB) to study the feasibility of burning recycled waste oil as a fuel in locomotives (Attachment F). Mr. Milliman stated that the Skunk Train is buying the recycled oil from a company in Richmond, California. When Mr. Milliman asked his receptionist to provide me with a copy of the most recent receipt for the purchase of recycled oil I learned that the Skunk Train is purchasing the oil from Walsh Oil in Fort Bragg, California (Attachment G).

Mr. Milliman then escorted us to the "roundhouse" (large barn-like structure) where maintenance of the locomotives is conducted (Attachment B). The foreman in charge was introduced as Mr. Dick Rexrode. As we walked into the area I noted that there were trenches under the railroad tracks. There was water and oil sprayed over the surface of the floor at the west end of the building. I observed an open 55-gallon drum, without labeling, that held a small volume of oily sludge (1/4 full). It appeared that the trench was in the process of being cleaned out and the sludge collected in the drum. I noted that no one was working in the area at this time (1:30 PM) and Mr. Rexrode said the employee doing the work should be back from lunch and continuing the clean-out. I pointed out the drum to Mr. Strickland and asked him to follow up on the Skunk Train's compliance with container management requirements.

Stored on the tracks over this trench is a railcar used for the storage of recycled oil (Attachment A, photo #2) that will be burned in locomotive #45 (steam engine). Mr. Rexrode stated that when this current load of recycled oil arrived it had a strong smell to it. Mr. Rexrode attributed the odor to the higher atmospheric temperature at the time of its arrival. Mr. Milliman assured me that only engine #45 (steam engine) burns the recycled oil and that the Skunk Train started purchasing the recycled oil in February or March 1998. I asked Mr. Milliman how long Ms. Hakin had been the supervisor of the roundhouse. Mr. Milliman stated that Ms. Hakin had supervised the maintenance operations from August 1996 to January 1998 at which time another, unnamed individual, was hired to oversee the maintenance operations. The original stenciling on the side of the railcar had been marked out and the word "DISMANTLE" stenciled on to the railcar (Attachment A, photo #3). A 5-gallon bucket was hanging from a valve (Attachment A, photo #4) on the underside of the railcar. Mr. Rexrode explained that #45 had been fueled from this car earlier this morning and the bucket was used to collect drippings from the valve. I asked for permission to sample the oil in the bucket (1/2 full) and both Mr. Milliman and Mr. Rexrode granted me permission.

Mr. Milliman pointed out the waste oil accumulation drums at the north end of the building and said that Safety Kleen picks up the waste oil generated from the maintenance. The current accumulation drum was not closed, unlabeled, and held approximately 20 gallons of oil. Mr. Rexrode said that the accumulation began several months ago and that this was the first drum of waste oil accumulated. Further discussion with Mr. Rexrode and Mr. Milliman revealed that the Skunk Train had been burning its waste oil from maintenance operations up until March 1998 when it started purchasing the recycled oil. While we were in the roundhouse I asked if Mr. Rexrode had any documentation on the recycled oil. Mr. Milliman later provided me with a copy of the certification sheet (Attachment D) given to the Skunk Train for the recycled oil. The certification was issued by Evergreen Oil who sold the oil (undisclosed volume) to BC Stocking, who in turn sold the oil to Walsh Oil. No indication was given as to the handling, commingling, or mixing of the oil during these transactions.

As we exited the roundhouse to the north I noted an area of soil between the tracks that had standing liquid in it and appeared to be saturated with oil (Attachment A, photos #5-6). Mr. Milliman explained that locomotive #45 is positioned here when it fills up with the oil from the railcar. The oil on the soil is from leakage that occurs from the locomotive. I then collected a sample of the oil in the 5-gallon bucket under the railcar. As I exited the roundhouse to the north again I observed a mound of black sand-like material located on the soil between the two sets of tracks (Attachment A, photos #9-12). Next to the sand-like material was a separate pile of oily soil. Upon questioning Mr. Rexrode I learned that a bin of ash from the steam engine (#45) had been dumped here recently. Mr. Rexrode stated that the oily soil had probably fallen off of the tracks of the tractor used to move the bin. I asked Mr. Milliman and Mr. Rexrode if a hazardous waste determination had been made on this waste. Mr. Milliman said that no determination had been made and was unaware that such a determination would be required. Mr. Rexrode explained that this was not the normal area for dumping the ash from the steam engine. According to Mr. Rexrode, the ash is usually dumped at the south end of the roundhouse. I told Mr. Milliman that I would like to sample the soil at this location and the soil at the south end of the building and have the samples analyzed. Mr. Milliman did not object and went back to his office while I collected a sample of the black sand-like material. While collecting the sample I noted a plastic bag partially full of green colored grease buried in the sand-like material.

When I returned to Mr. Milliman's office I asked him to sign the Sample Receipt form and provided him with a copy of the form. I asked Mr. Milliman if he had any questions (he did not) and thanked him for his time and cooperation.

V. SAMPLE COLLECTION SUMMARY

I collected a total of six samples, one from the recycled oil railcar and five from the soil around the roundhouse. Descriptions of for each sample, collection method and analytical results are given in the table below.

Sample Skunk-01: This sample was collected from the 5-gallon bucket of oil hanging from the valve on the underside of the railcar in the roundhouse (Attachment A, photos #7-8). After putting on my personal protective equipment (PPE) I used a new (clean and unused) 8oz sampling jar to scoop the oil from the bucket and pour it into the sample containers. Since Mr. Milliman was not initially present when I started the sample collection I collected two split samples. When Mr. Milliman arrived I asked him if he wanted one of the samples and he declined. Analysis of the sample showed that it met the recycled oil specifications in its certification (Attachment D) and would not be considered a hazardous waste.

Sample Skunk-02: This sample was collected from the pile of black sand-like material at the north end of the roundhouse (Attachment A, photos #13-14). After putting on new gloves, I used a new plastic scoop to collect the sample. I filled an 8oz new glass jar with the material. After collecting the sample I used the trowel to pull the plastic bag of grease out of the pile and open it up to verify its contents (Attachment A, photo #15). Analysis of the sample showed that it was hazardous for total and soluble zinc, soluble lead, and soluble copper. This sample constitutes a hazardous waste disposed of to the soil.

Sample Skunk-03: This sample was collected from the pile of oily soil at the north end of the roundhouse (Attachment A, photos #16-17). After putting on new gloves, I used a new plastic scoop to collect the sample. I filled an 8oz new glass jar with the material. Analysis of this sample showed that it was hazardous for soluble lead and waste oil. This sample constitutes a hazardous waste disposed of to the soil.

Sample Skunk-04: This sample was collected from the soil between the eastern set of tracks at the south end of the roundhouse (Attachment A, photos #18-20). After putting on new gloves, I used a new plastic scoop to collect the sample. I filled an 8oz new glass jar with the material. Analysis of this sample showed that it was hazardous for soluble lead and waste oil. This sample constitutes a hazardous waste disposed of to the soil.

Sample Skunk-05: This sample was collected from the soil between the western set of tracks at the south end of the roundhouse (Attachment A, photos #21-22). After putting on new gloves, I used a new plastic scoop to collect the sample. I filled an 8oz new glass jar with the material. Analysis of this sample showed that it was hazardous for waste oil. This sample constitutes a hazardous waste disposed of to the soil.

Sample Skunk-06: This sample was collected from the 5-gallon bucket of fresh ash (Attachment A, photo #23) sitting on the floor of the roundhouse (base of stairs leading to offices). Mr. Rexrode stated that this waste was freshly generated (that morning) and they had not yet dumped it. Mr. Rexrode assured me that he would place it in a hazardous waste container until a final decision on its management was reached. After putting on new gloves, I used a new plastic scoop to collect the sample. I filled an 8oz new glass jar with the material. Analysis of this sample showed that it was hazardous for soluble zinc. This sample constitutes a hazardous waste disposed of to the soil.

Sample #	Location/Description	Metals Analysis	TPH Analysis	Comments
Skunk-01	5-gal bucket under railcar. Black oil-like liquid.	Copper 53.1 mg/kg Lead 38.6mg/kg Zinc 644 mg/kg	TPH = 370,000 mg/kg (37% as motor oil) Total Halide = 600 ppm (Chloride)	Low apparent viscosity (drained from side walls quickly with little film).
Skunk-02	Black sand-like material (ash) on ground north of roundhouse	Copper 569 mg/kg 57.4 mg/L Lead 330 mg/kg 22.5 mg/L Zinc 6,450 mg/kg 813 mg/L	TPH = 200 mg/kg	Plastic bag of green grease buried in pile.
Skunk-03	Oily soil pile next to Skunk-02.	Lead 404 mg/kg 13.3 mg/L	TPH = 28,000 mg/kg (2.8%)	Allegedly cleaned off of tractor

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Skunk-04	Blackened soil between eastern set of tracks. South end of roundhouse.	Lead 308 mg/kg 8.16 mg/L	TPH = 12,000 mg/kg (1.2%)	Alleged disposal area for ash.
Skunk-05	Blackened soil between western set of tracks. South end of roundhouse	Lead 117 mg/kg 3.17 mg/L	TPH = 13,000 mg/kg (1.3%)	Alleged disposal area for ash
Skunk-06	Black sand-like material (ash) in 5-gal bucket.	Copper 295 mg/kg 17.2 mg/L Lead 160 mg/kg 4.75 mg/L Zinc 3,310 mg/kg 293 mg/L	TPH = <200 mg/kg	Fresh ash

Bold text indicates sample exceeded the regulatory limit for that element or compound. Regulatory limits: Total Zinc -5,000mg/kg; Soluble Zinc - 250mg/L; Soluble Lead - 5mg/L; Soluble Copper 25mg/L; Waste oil - no concentration limit, regulated by statute (Health and Safety Code, sections 25250.1 & 25250.4)

V. VIOLATIONS

Summary of Violations attached? Yes No

1. Illegal disposal

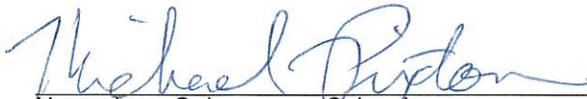
On or about September 23, 1998, California Western Railroad (CWR) violated Health and Safety Code (HSC), section 25189.2 (c) in that CWR disposed of hazardous waste ash, oily soil, and oil leaking from its locomotive engines on to the soil of its station outside of the roundhouse. Samples of soil collected from both ends of the roundhouse (Skunk-02 through Skunk-05) show a pattern of disposal of hazardous waste to the soil.

2. Illegal treatment

On or about September 23, 1998, CWR violated HSC, section 25250.5 (a) in that the Skunk Train burned used oil, drained from its locomotive engines prior to March 1998, in the combustion chamber of steam locomotive #45. CWR did not have authorization from DTSC to conduct such burning at the time it was taking place.

VI. CONCLUSIONS

At the close-out of the investigation I provided Mr. Milliman with a copy of the sample receipt form (Attachment H) and thanked him for his cooperation. I explained that a copy of the report would be provided at a later date once the report was finalized.



Hazardous Substances Scientist

11/13/98

Date

VII. ATTACHMENTS

- A. Photographs - 12 pages
- B. Facility Map - 1 page
- C. Unsigned copy of County letter - 2 pages
- D. Certificate of Analysis by Evergreen Oil - 1 page
- E. Analysis Results - 18 pages
- F. CIWMB Grant cover page - 1 page
- G. Walsh Oil receipt - 1 page
- H. Sample Receipt - 1 page
- I. Screen prints from Haznet database - 3 pages

Appendix A

Photographs

Investigation Report
California Western Railroad – Skunk Train
September 23, 1998



1. Locomotive #45 (steam engine) currently burning used/recycled oil as a fuel.



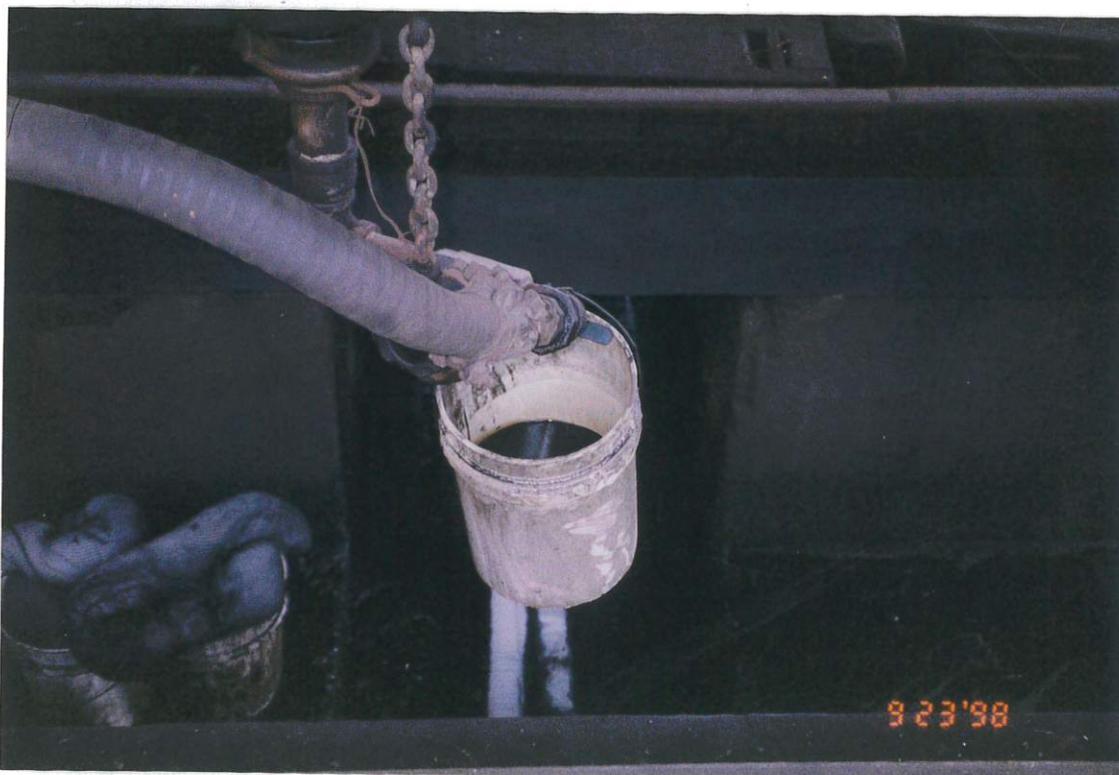
2. Railcar inside of the "roundhouse" used to store used/recycled oil. Lower right-hand corner of photo shows open unlabeled drum of oily sludge cleaned from the trench.

California Western Railroad
100 E. Laurel Street
Fort Bragg, California

EPA ID #CAD066125758
September 23, 1998
Photographer: Michael Pixton



3. Other side of railcar in photo #2. The word "Dismantle" is stenciled on the side of the railcar. Note the bucket underneath the car.



4. Close-up of the bucket in photo #3. Used to collect leaking oil from the railcar valve.

California Western Railroad
100 E. Laurel Street
Fort Bragg, California

EPA ID #CAD066125758
September 23, 1998
Photographer: Michael Pixton

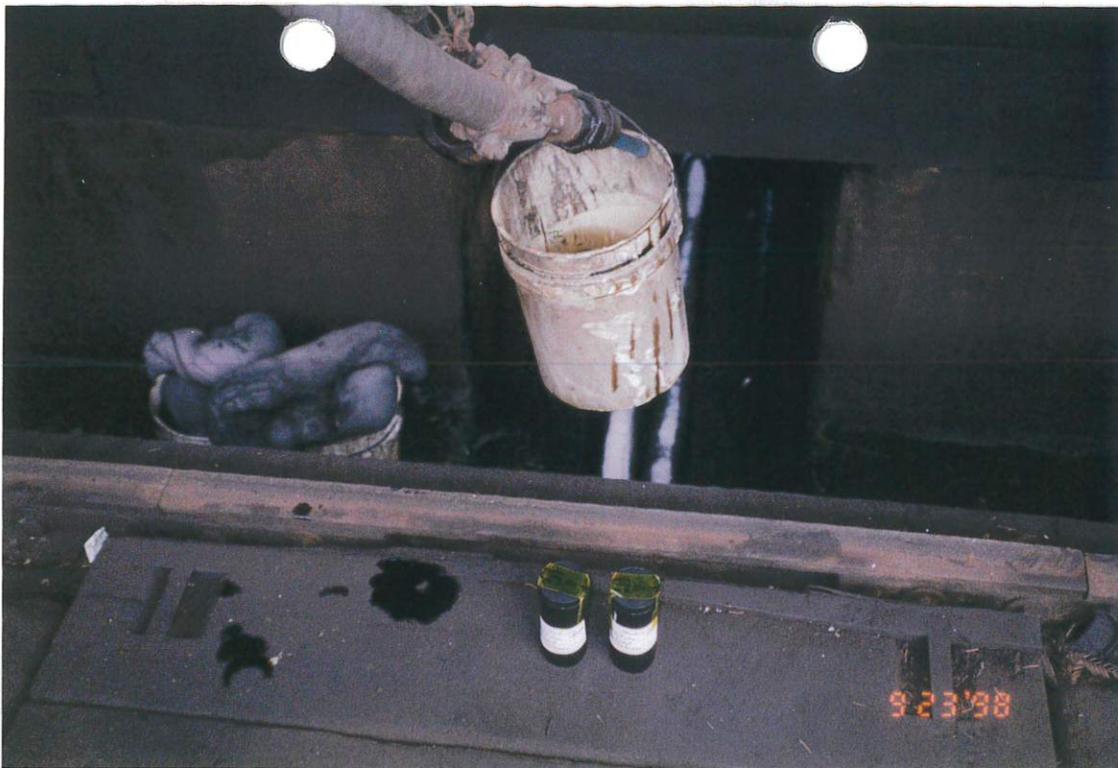
5. Oil soaked soil around the rail tracks leading to the railcar in photo #2.



6. Close-up of soil in photo #5. Allegedly due to leakage during start-up and fueling of the steam engine (locomotive #45).

California Western Railroad
100 E. Laurel Street
Fort Bragg, California

EPA ID #CAD066125758
September 23, 1998
Photographer: Michael Pixton



7. Sample Skunk-01 collected from the white plastic bucket of oil.



8. Close-up of sample Skunk-01.

California Western Railroad
100 E. Laurel Street
Fort Bragg, California

EPA ID #CAD066125758
September 23, 1998
Photographer: Michael Pixton



9. Area of contaminated soil to the north of the "roundhouse".



10. Overview showing position of the contamination in photo #9 to the "roundhouse". No fence or gate to block public access.

California Western Railroad
100 E. Laurel Street
Fort Bragg, California

EPA ID #CAD066125758
September 23, 1998
Photographer: Michael Pixton



11. Close-up of the black sand-like waste on the ground in photo #9. Alleged to be firebox ash from the locomotives.



12. Close-up of the potentially oil-contaminated soil in photo #9. Alleged to have fallen off of the tractor used in this area.

California Western Railroad
100 E. Laurel Street
Fort Bragg, California

EPA ID #CAD066125758
September 23, 1998
Photographer: Michael Pixton



13. Sample Skunk-02 and a plastic bag of grease removed from the pile.



14. Close-up of sample Skunk-02.

California Western Railroad
100 E. Laurel Street
Fort Bragg, California

EPA ID #CAD066125758
September 23, 1998
Photographer: Michael Pixton



15. Close-up of the grease in the bag next to sample Skunk-02.



16. Sample Skunk-03.

California Western Railroad
100 E. Laurel Street
Fort Bragg, California

EPA ID #CAD066125758
September 23, 1998
Photographer: Michael Pixton



17. Close-up of Skunk-03.



18. South end of rail tracks that pass through the "roundhouse". Note the darkly stained soil.

California Western Railroad
100 E. Laurel Street
Fort Bragg, California

EPA ID #CAD066125758
September 23, 1998
Photographer: Michael Pixton



19. Sample Skunk-04 taken from between the tracks in photo #18.



20. Close-up of sample Skunk-04.

California Western Railroad
100 E. Laurel Street
Fort Bragg, California

EPA ID #CAD066125758
September 23, 1998
Photographer: Michael Pixton

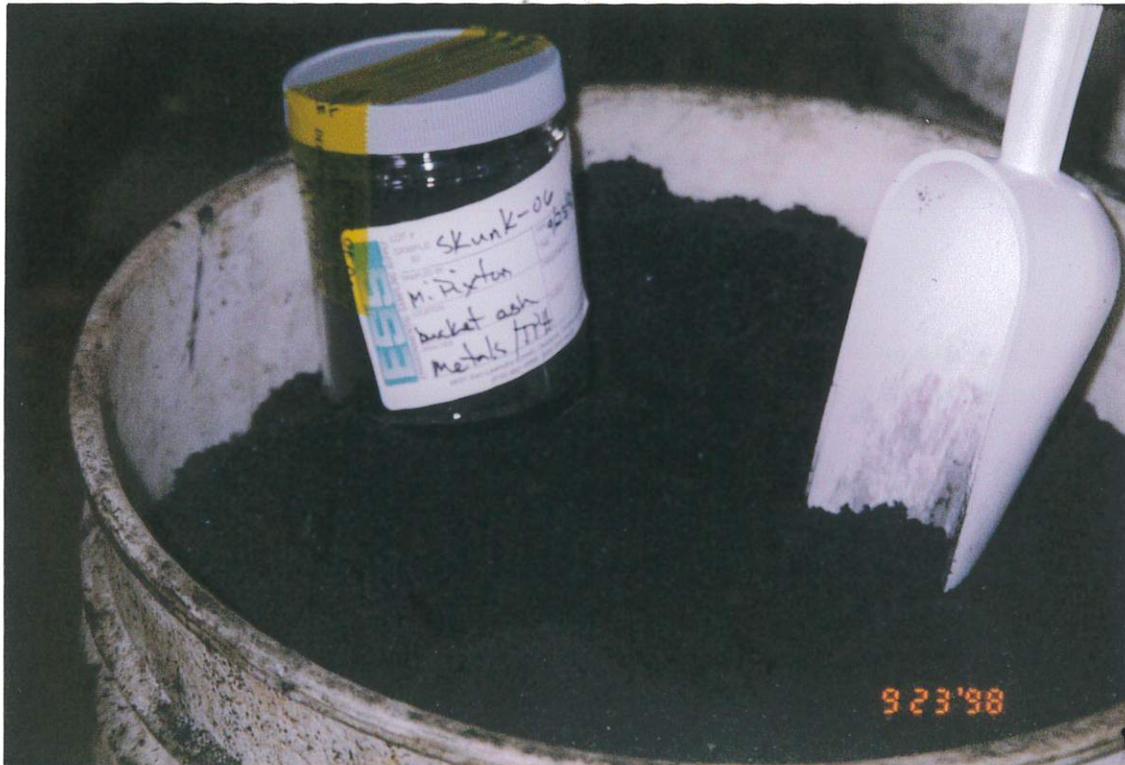
21. Sample Skunk-05 taken from second set of rail tracks parallel to those in photo #18.



22. Close-up of sample Skunk-05.

California Western Railroad
100 E. Laurel Street
Fort Bragg, California

EPA ID #CAD066125758
September 23, 1998
Photographer: Michael Pixton



23. Sample Skunk-06 taken from a bucket of firebox ash that had not yet been disposed of to the soil. Removed from the firebox earlier on this date.

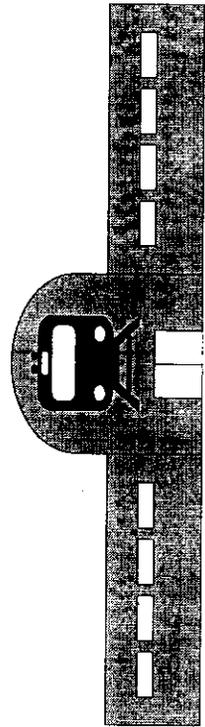
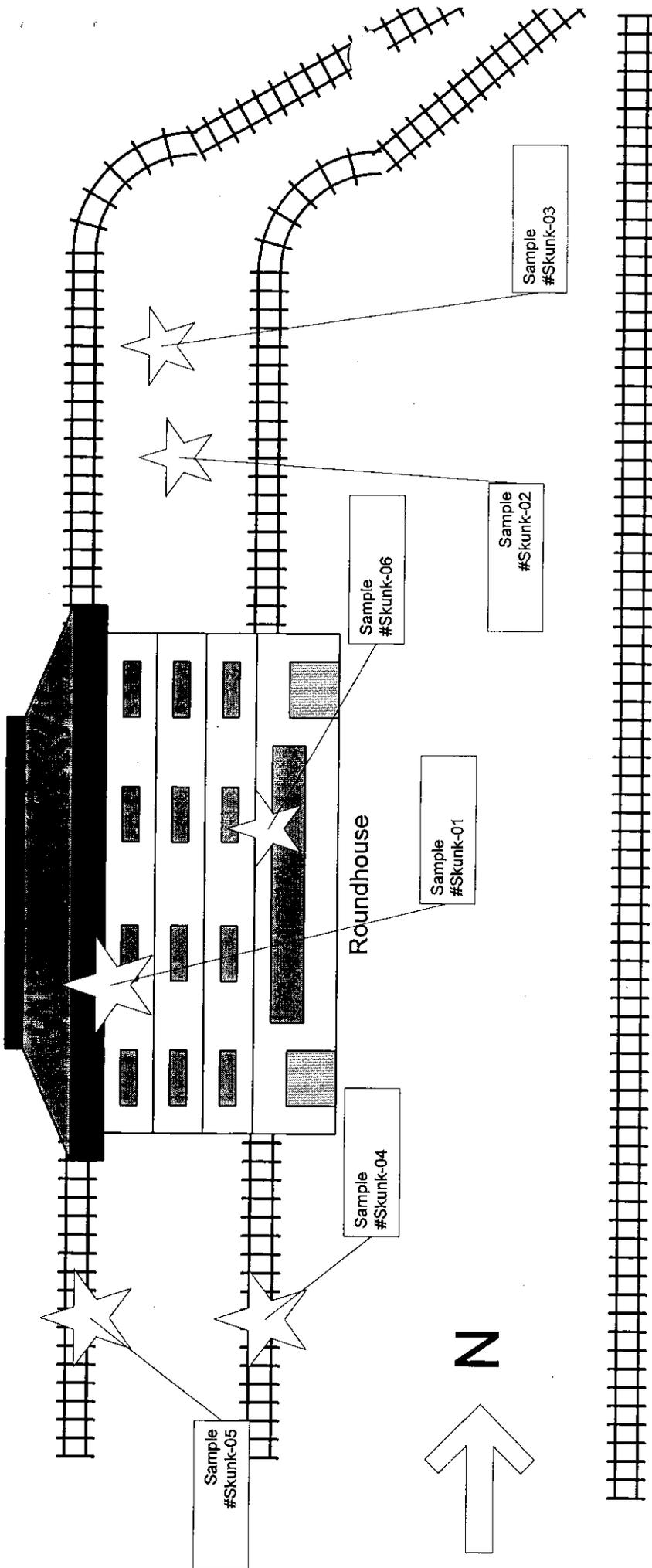
Appendix B

Facility Map with sample location

Investigation Report

California Western Railroad – Skunk Train

September 23, 1998



California Western Railroad (Skunk Train)
 100 E. Laural Street, Fort Bragg
 (Not to Scale)

Appendix C

Letter to Ms. Lynn Hakin

January 20, 1998

Investigation Report

California Western Railroad – Skunk Train

September 23, 1998

January 20, 1998

MS LYNN HAKIN
CHIEF OPERATING OFFICER
CA WESTERN RAILROAD
P.O. BOX 907
FORT BRAGG, CA 95437

Dear Ms. Hakin:

This letter is a confirmation of the information discussed with you last Friday. I hope it will answer some of the questions you have regarding proper disposal of used oil and used oil filters.

The proper disposal of used oil filters is pretty basic so I'll go over that first. Used oil filters are considered hazardous waste unless managed under the following conditions: they are drained of free-flowing oil; they are accumulated, stored, and transferred in closed, labeled containers; they are transferred for metal recycling; transfer receipts are kept for three years. The enclosed used oil filter fact sheet has additional information regarding oil filters.

Used oil is a hazardous waste in California and must be managed accordingly. Used oil must be collected and stored in a closed, leak-proof, labeled container for disposal. The oil must be picked up by a licensed hazardous waste hauler for recycling. It can be stored onsite a maximum of 270 days. The disposal of used oil by incineration or burning as fuel is prohibited, unless authorized under other provisions of law.

In speaking with my supervisor and several people at the Dept. Of Toxic Substances Control, there is a way to legally burn used oil as a fuel. Section 25250.1 subdivision (b) of the Health and Safety Code states conditions which, if met, would render used oil not subject to the regulations. This section is highlighted green on the excerpt from the H & S Code. Basically, if the used oil was tested by a certified lab and met all of the standards of purity for recycled oil (highlighted in blue), then it could be used as a fuel for the steam engines. Please note that these standards shall not be met by blending or diluting used oil with recycled oil. We would require that used oil from like sources be combined and tested together, separate from other sources (all train engine oils together, all automotive oils together, all generator oils together, etc.), and tested once every three years. The chances that untreated used oil could meet the standards of purity may be slim to none, I really don't know. However, this would be the only way to legally use your waste oil as a fuel.

I've enclosed fact sheets, a relevant portion of the H & S Code, and a list of waste haulers to help you in your decision. Please feel free to call me at 463-5670 if you have any questions.

Sincerely,

Trey Strickland
Environmental Health Specialist

Appendix D

Certificate of Analysis for Fuel Oil

Evergreen Oil, Inc

September 11, 1998

Investigation Report

California Western Railroad – Skunk Train

September 23, 1998

Evergreen Oil Inc.

6880 Smith Ave
Newark, CA 94560
(510-795-4400)

Certificate of Analysis

FUEL OIL

B. C. STOCKING DISTRIBUTING

Product Performance

<i>Total Organic Halogens:</i>	276	<i>ppm</i>
<i>PCB's:</i>	ND< 2	<i>ppm</i>
<i>Flash Point:</i>	>140	<i>Deg. F</i>
<i>API GRAVITY:</i>	28.6	<i>at 60 Deg. F</i>
<i>Water Content:</i>	5.71	<i>%</i>
<i>Lead:</i>	36.15	<i>ppm</i>
<i>Cadmium:</i>	0.73	<i>ppm</i>
<i>Chromium:</i>	1.31	<i>ppm</i>
<i>Arsenic:</i>	ND<5	<i>ppm</i>
<i>BS&W:</i>	1.0	<i>%</i>
<i>Sulfur Content:</i>	N/A	<i>ppm</i>

APPROVED BY: V. Madlangbayan

DATE: 9/11/98

*California Regulatory Limits: Lead < 50 ppm, Chromium < 10ppm, Cadmium < 2 ppm,
Arsenic < 5 ppm, Total Organic Halogens < 1000 ppm*

Appendix E

Laboratory Report
November 10, 1998

Investigation Report
California Western Railroad – Skunk Train
September 23, 1998

Department of Toxic Substances Control
Hazardous Materials Laboratory
2151 Berkeley Way, Berkeley, Ca. 94704
Tel No. (510) 540-303

HML#: 980329
to: 980334
Date Sampled: 09/23/98
Date Recieved: 09/24/98

LABORATORY REPORT

Collector's Name: Michael Pixton
Location: Calif. Western Railroad
(Skunk Train).

Activity: SCD
Collector's #: SKUNK-01
to: SKUNK-06
Authorization#: HMO3701

Analytical Procedure: Samples were extracted with 0.2M citrate buffer at pH 5 for 48 hours. The extracts were centrifuged and filtered. Analysis is done by ICP. Results in mg/l.

Extraction: HML Method#910

Analysis: EPA 6010B.

HML#	COLL.#	TYPE	Pb	Cr	Cu	Zn
980330	NKL002	liquid	22.5	NR	57.4	813
980331	NKL004	liquid	13.3	<0.80	NR	NR
980332	NKL009	liquid	8.16	NR	NR	NR
980333	NKL012	liquid	3.17	NR	NR	NR
980334	NKL013	liquid	4.75	NR	17.2	293

Signatures:

Atif R. Kozman
Analyst

11/10/98
Date

Milad Iskander
Supervisor

11/10/98
Date

ms (kw.) 11/10/98

Quality Assurance Summary for ICP

Element	HML Soil QC Sample		Method Blank		Calibration Verification		Duplicate Spiked Sample			HML No.:		Matrix:		
	found	known	mg/kg	%	mg/L	found	known	%	A:	B:	mg/kg	RPD	A:	B:
Ba-Barium					<0.010	10.2	10.0	102						
Co-Cobalt					<0.05	10.3	10.0	103						
Cu-Copper					<0.10	10.2	10.0	102						
Pb-Lead					<0.10	10.3	10.0	103						
Zn-Zinc					<0.10	10.4	10.0	104						
Element	HML Liquid QC Sample		Reagent Blank		Inorganic Ventures Reference Standard		Duplicate Spiked Sample			HML No.:		Matrix:		
	found	known	mg/kg	%	mg/L	found	known	%	A:	B:	mg/L	RPD	A:	B:
Ba-Barium					<0.010	0.98	1.00	98.0	42.0	42.1	0.26	3.34	77.3	77.5
Co-Cobalt					<0.05	1.02	1.00	102	40.2	40.1	0.25	<0.50	80.4	80.2
Cu-Copper					<0.10	0.98	1.00	98.0	56.6	56.6	0.00	17.2	78.8	78.8
Pb-Lead					<0.10	1.02	1.00	102	44.5	44.5	0.00	4.75	79.5	79.5
Zn-Zinc					<0.10	1.02	1.00	102	333	332	2.53	293	80.0	78.0

ICP Analyst's Signature: *Milad S. Iskander* Date: 11/10/98
 Chemist: Atif R. Kozmail
 Date Analyzed: 11/09/98
 Supervisor: *g*
 Milad S. Iskander, Supervisor

Department of Toxic Substances Control
Hazardous Materials Laboratory
2151 Berkeley Way, Berkeley, Ca. 94704
Tel No. (510) 540-303

HML#: 980329
to: 980334
Date Sampled: 09/23/98
Date Received: 09/24/98

LABORATORY REPORT

Collector's Name: Michael Pixton
Location: Calif. Western Railroad
(Skunk Train).

Activity: SCD
Collector's #: SKUNK-01
to: SKUNK-06
Authorization#: HMO3701

Analytical Procedure: Samples were extracted with 0.2M citrate buffer at pH 5 for 48 hours. The extracts were centrifuged and filtered. Analysis is done by ICP. Results in mg/l.

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Analysis: EPA 6010B.

HML#	COLL.#	TYPE	Pb	Cr	Cu	Zn
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980331	NKL004	liquid	13.3	<0.80	NR	NR
980332	NKL009	liquid	8.16	NR	NR	NR
980333	NKL012	liquid	3.17	NR	NR	NR
980334	NKL013	liquid	4.75	NR	17.2	293

Signatures:

Atif R. Kozman
Analyst

11/10/98
Date

Milad Iskander
Supervisor

10/10/98
Date

ms (aw.) 11/10/98

Quality Assurance Summary for ICP

HML Number: 9803329
 to 9803334

Element	HML Soil QC Sample		Method Blank	Calibration Verification			Duplicate Spiked Sample			HML No.:		Matrix:		
	found	known		mg/kg	found	known	%	A:	B:	RPD	Unspiked Result (mg/kg)	Spike Added (mg/kg)	A:	B:
Ba-Barium			<0.010	10.2	10.0	102								
Co-Cobalt			<0.05	10.3	10.0	103								
Cu-Copper			<0.10	10.2	10.0	102								
Pb-Lead			<0.10	10.3	10.0	103								
Zn-Zinc			<0.10	10.4	10.0	104								
Element	HML Liquid QC Sample			Reagent Blank	Inorganic Ventures Reference Standard			Duplicate Spiked Sample			HML No.:		Matrix:	
	found	known	%		found	known	%	A:	B:	RPD	Unspiked Result (mg/L)	Spike Added (mg/L)	A:	B:
Ba-Barium				0.98	1.00	98.0	42.0	42.1	0.28	3.34	50.0	77.3	77.5	
Co-Cobalt				1.02	1.00	102	40.2	40.1	0.25	<0.50	50.0	80.4	80.2	
Cu-Copper				0.98	1.00	98.0	56.6	58.6	0.00	17.2	50.0	78.8	78.8	
Pb-Lead				1.02	1.00	102	44.5	44.5	0.00	4.75	50.0	79.5	79.5	
Zn-Zinc				1.02	1.00	102	333	332	2.53	293	50.0	80.0	78.0	

ICP Analyst's Signature: Milad S. Iskander
 Chemist: Atif R. Kozma
 Date Analyzed: 11/09/98
 Chemist's Signature: Atif R. Kozma

Milad S. Iskander, Supervisor:

Atif R. Kozma

Date: 11/09/98

California Environmental Protection Agency
 Department of Toxic Substances Control
 Hazardous Materials Laboratory (Inorganic Section)
 2151 Berkeley Way, Berkeley, CA 94704

HML #: 980329 to
 980334

Phone: (510) 540-3003 or (ATSS) 571-3003

Collector's Name: MICHAEL PIXTON
 Site of Sampling: CALIFORNIA WESTERN RAILROAD

Auth. No.: HMO3701
 Activity: SEB
 Date Collected: 9/23/98
 Date Received: 9/24/98

Analytical
 Procedure:
 EPA-SW 846

Samples are digested with 1:1 HNO3 (and 30% H2O2, and 1:1 HCl, if applicable) over a hot plate. Digests are cooled, filtered and made to final volume with deionized H2O. Metal analysis of the digests is by ICPAES (EPA #6010B). Units are mg/kg.

Method: 3050B for solids; 3010A for liquids; 3005A for clean water.

HML Number:	980329	980330	980331	980332	980333
Collector's Sample No.:	SKUNK-01	SKUNK-02	SKUNK-03	SKUNK-04	SKUNK-05
Sample Type:	OIL	SOLID	SOLID	SOLID	SOLID
As-Arsenic	<5.00	7.00	5.94	7.58	<5.00
Ba-Barium	19.4	242	333	130	67.5
Be-Beryllium	<0.30	<0.25	<0.25	<0.25	<0.25
Cd-Cadmium	<0.50	4.12	<0.50	0.53	<0.50
Co-Cobalt	<2.00	6.46	9.26	4.24	<2.50
Cr-Chromium	<3.00	35.0	61.0	49.1	25.3
Cu-Copper	53.1	569	189	64.6	32.9
Mo-Molybdenum	6.30	155	6.82	5.27	6.72
Ni-Nickel	<3.00	59.7	28.6	17.3	11.8
Pb-Lead	38.6	330	404	308	117
Se-Selenium	<8.00	<7.50	<7.50	<7.50	<7.50
Tl-Thallium	<10.0	<10.0	<10.0	<10.0	<10.0
V-Vanadium	<2.50	9.21	16.7	8.00	7.52
Zn-Zinc	644	6450	1030	132	70.0

Notes: < = below detection limit of method.

Merlyn de Guzman
 ICP Analyst,
 Merlyn de Guzman

10/30/98
 Date

Atif R. Kozman
 Chemist's Signature
 Atif R. Kozman, Chemist

10/30/98
 Date

Milad S. Iskander
 Milad S. Iskander, Supervisor

10/30/98
 Date

not CW.) 10/30/98

**HAZARDOUS MATERIALS LABORATORY
SAMPLE TRACKING FORM**

AUTHORIZATION NO.: HMO 3701

SITE/LOCATION: Calif. Western Railroad (Skunk Train)

Date Assigned: _____

Date & Time Faxed: _____

No	Sample I.D.	PL	Procedure Requested	DATE				Haz	Non Haz.
				Received	Ext/Dig	Analyzed	Reported		
1	980329	2	S	9/24/98	10/29/98	10/30/98	10/30/98		
2	980330	↓	↓	↓	↓	↓	↓		
3	980331	↓	↓	↓	↓	↓	↓		
4	980332	↓	↓	↓	↓	↓	↓		
5	980333	↓	↓	↓	↓	↓	↓		
6	980334	↓	↓	↓	↓	↓	↓		
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

REMARKS:

ANALYST: ATIF KOZMAN

SIGNATURE: AKozman

TITLE: Public Health Chemist

DATE: 10/30/98

California Environmental Protection Agency
Department of Toxic Substances Control
Hazardous Materials Laboratory (Inorganic Section)
2151 Berkeley Way, Berkeley, CA 94704

HML #: 980329 to
980334

Phone: (510) 540-3003 or (ATSS) 571-3003

Collector's Name: MICHAEL PIXTON
Site of Sampling: CALIFORNIA WESTERN RAILROAG

Auth. No.: HMO3701
Activity : SCD
Date Collected: 9/23/98
Date Received: 9/24/98

Analytical Procedure: EPA-SW 846
Samples are digested with 1:1 HNO₃ (and 30% H₂O₂, and 1:1 HCl, if applicable) over a hot plate. Digests are cooled, filtered and made to final volume with deionized H₂O. Metal analysis of the digests is by ICPAES (EPA #6010B). Units are mg/kg.

Method: 3050B for solids; 3010A for liquids; 3005A for clean water.

HML Number: 980334
Collector's Sample No.: SKUNK-06
Sample Type: SOLID

As-Arsenic	<5.00
Ba-Barium	97.2
Be-Beryllium	<0.25
Cd-Cadmium	<0.50
Co-Cobalt	3.69
Cr-Chromium	24.9
Cu-Copper	295
Mo-Molybdenum	65.2
Ni-Nickel	33.8
Pb-Lead	160
Se-Selenium	<7.50
Tl-Thallium	<10.0
V-Vanadium	3.40
Zn-Zinc	3310

Notes: < = below detection limit of method.

Merlyn de Guzman
ICP Analyst,
Merlyn de Guzman

10/30/98
Date

Atif R. Kozman
Chemist/s, Signature
Atif R. Kozman, Chemist

10/30/98
Date

Milad S. Iskander, Supervisor

10/30/98
Date

mes ckw.) 10/30/98

Quality Assurance Summary for ICP

Element	HML Soil QC Sample			Method Blank	Calibration Verification			Duplicate Spiked Sample				HML No.: 980330		Matrix: SOLID	
	mg/kg		%		mg/L		%	mg/kg		RPD	Unspiked Result (mg/kg)	Spike Added (mg/kg)	% Recovery		
	found	known			found	known		A:	B:				A:	B:	
As-Arsenic	61.2	63.3	96.7	<0.05	9.62	10.0	96.2	482	484	0.42	7.00	500	95.0	95.4	
Ba-Barium	41.8	44.7	93.5	<0.005	9.17	10.0	91.7	732	735	0.61	242	500	98.0	98.6	
Be-Beryllium	19.9	21.5	92.6	<0.003	1.83	2.00	91.5	93.5	94.7	1.28	<0.25	100	93.5	94.7	
Cd-Cadmium	23.4	25.5	91.8	<0.005	9.56	10.0	95.6	459	462	0.66	4.12	500	91.0	91.6	
Co-Cobalt	19.9	20.7	96.1	<0.02	9.57	10.0	95.7	469	472	0.65	6.46	500	92.5	93.1	
Cr-Chromium	53.3	59.6	89.4	<0.03	9.31	10.0	93.1	515	500	3.17	35.0	500	96.0	93.0	
Cu-Copper	34.2	37.7	90.7	<0.05	9.18	10.0	91.8	1178	1122	9.44	569	500	122	111	
Mo-Molybdenum	29.0	30.3	95.7	<0.05	9.50	10.0	95.0	650	650	0.00	155	500	99.0	99.0	
Ni-Nickel	33.7	35.4	95.2	<0.03	9.55	10.0	95.5	539	528	2.32	59.7	500	95.9	93.7	
Pb-Lead	32.0	31.0	103	<0.06	9.68	10.0	96.8	871	864	0.93	330	500	108	107	
Se-Selenium	69.0	72.8	94.8	<0.08	9.39	10.0	93.9	466	471	1.07	<7.50	500	93.2	94.2	
Tl-Thallium	125	125	100	<0.10	9.38	10.0	93.8	448	452	0.89	<10.0	500	89.6	90.4	
V-Vanadium	34.8	40.9	85.1	<0.03	9.03	10.0	90.3	464	467	0.66	9.21	500	91.0	91.6	
Zn-Zinc	44.9	46.3	97.0	0.07	9.55	10.0	95.5	11500	11500	0.00	6450	5000	101	101	
Element	HML Liquid QC Sample			Reagent Blank	Inorganic Ventures Reference Standard			Duplicate Spiked Sample				HML No.: 980329		Matrix: OIL	
	mg/kg		%		mg/L		%	mg/kg		RPD	Unspiked Result (mg/kg)	Spike Added (mg/kg)	% Recovery		
	found	known			found	known		A:	B:				A:	B:	
As-Arsenic	2.94	3.01	97.7	<0.10	1.03	1.00	103	446	446	0.00	<5.00	500	89.2	89.2	
Ba-Barium	3.11	3.01	103	<0.010	0.98	1.00	98.0	458	478	4.46	19.4	500	87.7	91.7	
Be-Beryllium	0.83	0.85	97.6	<0.005	0.20	0.20	100	90.3	92.4	2.30	<0.30	100	90.3	92.4	
Cd-Cadmium	2.38	2.47	96.4	<0.010	1.03	1.00	103	452	455	0.66	<0.50	500	90.4	91.0	
Co-Cobalt	2.42	2.43	99.6	<0.05	1.02	1.00	102	457	465	1.74	<2.00	500	91.4	93.0	
Cr-Chromium	5.38	5.39	99.8	<0.08	1.02	1.00	102	459	470	2.37	<3.00	500	91.8	94.0	
Cu-Copper	29.8	29.0	103	<0.10	0.98	1.00	98.0	490	504	3.15	53.1	500	87.4	90.2	
Mo-Molybdenum	2.05	1.97	104	<0.10	1.02	1.00	102	463	470	1.52	6.30	500	91.3	92.7	
Ni-Nickel	4.83	4.96	97.4	<0.05	1.04	1.00	104	462	468	1.29	<3.00	500	92.4	93.6	
Pb-Lead	10.1	10.2	99.0	<0.10	1.02	1.00	102	483	491	1.78	38.6	500	88.9	90.5	
Se-Selenium	3.70	3.47	107	<0.15	1.02	1.00	102	464	471	1.50	<8.00	500	92.8	94.2	
Tl-Thallium	10.3	10.1	102	<0.20	1.01	1.00	101	451	463	2.63	<10.0	500	90.2	92.6	
V-Vanadium	2.53	2.49	102	<0.06	0.98	1.00	98.0	444	451	1.56	<2.50	500	88.8	90.2	
Zn-Zinc	54.6	57.1	95.6	<0.10	1.00	1.00	100	1052	1092	9.35	644	500	81.6	89.6	

ICP Analyst's Signature: *Atif R. Kozman* Date: 10/30/98
 Chemist: Atif R. Kozman
 Date Analyzed: 10/30/98
 Supervisor: *Milad S. Iskander* Date: 10/30/98

HAZARDOUS MATERIALS SAMPLE ANALYSIS REQUEST	1. Authorization Number	HML No. <u>980329</u>	2. Page
	<u>H M O 3 7 0 1</u>	To <u>980334</u>	L of <u>1</u>

3. Requestor: <u>Michael Pixton</u>	4. Phone <u>(510) 540-3802</u>	7. TAT Level: 1 (circle one)	Authorized By		
5. Address (To Receive Results): <u>700 Heinz Ave Berkeley</u>	6. FAX <u>510 540-3891</u>		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: center;"><u>2</u></td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> </table>	<u>2</u>	3
<u>2</u>	3	4			

8. Date Sampled Sept 23 1998

10. Activity: SCD SRPD SMB FPB SPPT ER/CL Others

11. SAMPLING LOCATION CAD 060125758

a. EPA ID No.

b. Site California Western Railroad (Kink Train)

c. Address

a. Office <u>02</u>	b. INDEX <u>6110</u>	c. PCA <u>37322</u>	d. MPC
e. SITE <u>201121+33</u>	f. County <u>23</u>		

12. SAMPLES

a. ID	b. Collector's No.	c. Lab No.	d. Sample Type	e. Container Type	f. Size	g. Field Information
A	<u>SIKWINK-011</u>	<u>980329</u>	<u>oil</u>	<u>glass</u>	<u>3oz Tall</u>	<u>recycled oil</u>
B	<u>SIKWINK-012</u>	<u>980330</u>	<u>solid</u>		<u>8oz short</u>	<u>ash</u>
C	<u>SIKWINK-013</u>	<u>980331</u>				<u>city debris</u>
D	<u>SIKWINK-014</u>	<u>980332</u>				<u>oil & ash</u>
E	<u>SIKWINK-015</u>	<u>980333</u>				
F	<u>SIKWINK-016</u>	<u>980334</u>				
G						
H						

13. ANALYSIS REQUESTED

a. <input type="checkbox"/> pH	f. <input type="checkbox"/> PAHs - 8310	i. <input type="checkbox"/> OP - Pest
b. <input checked="" type="checkbox"/> Metal Scan <u>A-F</u>	g. <input type="checkbox"/> PCBs	m. <input type="checkbox"/> VOA - 8021
c. <input type="checkbox"/> Metals (Spec)	h. <input checked="" type="checkbox"/> TRH <u>A-F</u> <u>waste oil</u>	n. <input type="checkbox"/> VOA - 8290
d. <input checked="" type="checkbox"/> W.E.T. <u>if needed</u>	i. <input type="checkbox"/> Gasoline	o. <input type="checkbox"/> SVO - 8270
e. <input type="checkbox"/> Flash Point	j. <input type="checkbox"/> Diesel	p. <input type="checkbox"/> TCLP - (specify)
	k. <input type="checkbox"/> Cl - Pest	q. <input type="checkbox"/>

14. SPECIAL REMARKS/ANALYSIS OBJECTIVE:

15. SUPPLEMENTAL REQUESTS

TOX A

Initials _____ Date _____

16. CHAIN OF CUSTODY

a. <u>Michael Pixton</u> Signature	Michael Pixton/HSS Name/Title	09/23/98 - 09/24/98 Inclusive Dates
b. <u>Debra Hermon</u> Signature	Teruna Hermon/Lab Asst Name/Title	09/24/98 - / / Inclusive Dates
c. _____ Signature	_____ Name/Title	/ / - / / Inclusive Dates
d. _____ Signature	_____ Name/Title	/ / - / / Inclusive Dates

17. LAB REMARKS: Inorganic Section received the samples on 10/28/98

Department of Toxic Substances Control
Hazardous Materials Laboratory

SUPPLEMENTAL _____

(check if Supplemental Request)

AUTHORIZATION REQUEST FORM (ARF)

PART A: (By Requestor - PLEASE PRINT)

TAT Level: 1 (2) 3 4

Requestor's Name: Michael Pitzer Phone (510) 540 3862
 Region/Unit: SCD/Berkeley FAX (510) 540 3891
 BACK-UP REQUESTOR: Ray Wang Phone (510) 540
 SITE: Shunk Train

Analytical Requests Planned

Analysis	Number of Spis / Type					Analysis	Number of Spis / Type				
	Soil	H2O	Solid	Liq	Other*		Soil	H2O	Solid	Liq	Other
Metal Scan	3				4	Vol Hdspce					
Metal Spec.						SV Screening					
W.E.T			if needed			Vol 8260					
pH						SV 8270					
Cyanides						(Write in)					
Cl-Past											
OP-Past											
PAHs						T C L P					
PCBs 8081						Metals					
Gasoline						Volatiles					
Diesel						Semivol.					
TPH	3				4	Pesticides					
8021						Herbicides					

Analysis Objective (circle one):
 a. Waste Characterization b. Treatment Standards
 c. Drinking H2O Standards d. Others :

Detection Limit Requirements:
 (if different than established DLs)

Expected Date of Samples Arrival at Lab

9/25/98

PART B: (By STO - HML)

Authorization Number (AN) HMO3701 Expires 10/2/98

Lab to Receive Samples: Name: Hazardous Materials Lab
Address: 700 Heinz St., Ste. 150
Berkeley, CA 94710

Sample Tracking Officer (STO): P. Schiro

Today's Date: 9/22/98

TAT Level 1 = 10-15 Days, 2 = 16-30 Days, 3 = 31-45 Days, 4 = when possible

(circle one as the top)

* Other: Solvent (Sol), Oil, Paint (Pat), Sludge (Sl)-etc (please specify)

California Department of Toxic Substances Control
 Hazardous Materials Laboratory
 2151 Berkeley Way, Berkeley 94704, Ph. (510) 540-3003

HML #: 980329
 to: 980334

Auth. #: HMO 3701

Laboratory Report For
 Total Halogens In Oil (TXO) Screening

Page: 1
 of: 1

Requestor: Michael Pixton

Sampling Location : California Western Railroad (Skunk Train)

Date Collected: 9/23/98
 Date Recv'd by Lab: 9/24/98
 Date Analyzed : 10/2/98

Method Reference: HML 792

Procedure: Screening Method :- An aliquot of oil is treated with metallic sodium. The treated mixture is extracted for inorganic halides, then titrated to a colorimetric endpoint. Chloride, bromide & iodide are measured, while fluoride does not react & is not measured. Results are reported as Chloride, regardless of the actual halide present.
 After Wash Method :- When the screening results > 1000 mg/Kg but < 3000 mg/Kg, an aliquot is washed with acidified water to remove inorganic halides. The oil is then retested by screening method. The remaining halides in the oil are presumed to be due to organic halogens.

Units = ppm as "Cl"

HML Number	Collector's Number	Matrix	Total Halogens in Oil		QL
			SM	AWM	
Method Blank	-	Hexadecane	ND		100
980329	Skunk-01	Oil	600		100

Notes: QL = Quantitation Limit SM = Screening Method
 NA = Not analyzed, solid matrix AWM = After wash method
 ND = Not detected

Associated Quality Control:

	Spike Added	Spike Recovered	Percent Recovery
Method Standard	2,200	1,900	82.1
950860 Matrix Spike	1,500	2,000	89.0

Percent Recovery (%Recov) = (Spike con't recovered - background con't) / (Spike con't added) x 100

Comments :

Analyst: Joe Acedillo

J. E. Acedillo

10/5/98

Supervisor: Jarnail S. Garcha

J. S. Garcha
 Signature

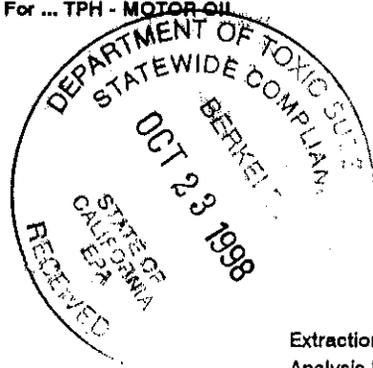
10/5/98
 Date

California Department of Toxic Substances Control
HAZARDOUS MATERIALS LABORATORY
 2151 Berkeley Way, Berkeley, Ca. 94704, Ph (510)540-3101
 Laboratory Report For ... TPH - MOTOR OIL

HML#: 980329
 to: 980334

AN#: HMO3701

Page 1
 of 7



Requestor: Michael Pixton
 Sampling Location: California Western Railroad (Skunk Train)

Date Collected: 09/23/98
 Date Received: 09/24/98
 Date Extracted: 10/02/98
 Date Analyzed: 10/07/98
 Extraction Method: EPA 3580
 Analysis Method: SCL#816-S
 Extraction Holding Time Met?: YES
 Analysis Holding Time Met?: YES

Extraction Methods: EPA 3510C — For aqueous samples: Separatory funnel extraction with methylene chloride.
 EPA 3550B — For solid samples: Sonication extraction with methylene chloride.
 EPA 3580 — For oils & organic liquid samples: Solvent dilution with methylene chloride.
 Analytical Method: SCL# 816-S — Analysis by DB-1 megabore capillary column, GC/FID.

HML Number: —>		980329				Method Blank	QL*
Collector's Sample #		SKUNK-01				Solvent	
Sample Matrix:		Org. Liquid				% w/w	% w/w
Units:		% w/w					
Compound	CAS #						
TPH: Motor Oil		37				ND	0.20
Range							

Surrogate Standard Recovery		Units: Percent					
p-Terphenyl	84-15-1	NA**				130	

Note: QL = Quantitation Limit = Lowest calibration standard x dilution factor.
 D = Detected but below QL. ND = Not Detected. NA = Not Applicable due to high sample dilution.

Comments:
 * QL for HML# 980329 is 40x that stated above.
 ** Surrogate standard recovery is not applicable due to high dilution of sample.
 Note: Early eluting Hydrocarbons peaks in the Diesel Range are also detected in the sample (HML# 980329).

Analyst: Juliet Tabajonda Signature: [Signature] Date: 10/21/98
 Supervisor: Jarnall S. Garcha Signature: [Signature] Date: 10/21/98

California Department of Toxic Substances Control
HAZARDOUS MATERIALS LABORATORY
 2151 Berkeley Way, Berkeley, Ca. 94704, Ph (510)540-3101
 Laboratory Report For ... TPH - MOTOR OIL

HML#: 980329
 to: 980334

AN#: HMO3701

Page 2
 of 7

Requestor: Michael Pixton
 Sampling Location: California Western Railroad (Skunk Train)

Date Collected: 09/23/98
 Date Received: 09/24/98
 Date Extracted: 10/07/98
 Date Analyzed: 10/08/98
 Extraction Method: EPA 3550B
 Analysis Method: SCL#816-S
 Extraction Holding Time Met?: YES
 Analysis Holding Time Met?: YES

Extraction Methods: EPA 3510C -- For aqueous samples: Separatory funnel extraction with methylene chloride.
 EPA 3550B -- For solid samples: Sonication extraction with methylene chloride.
 EPA 3580 -- For oils & organic liquid samples: Solvent dilution with methylene chloride.
 Analytical Method: SCL# 816-S -- Analysis by DB-1 megabore capillary column, GC/FID.

HML Number: -->	980330	980331	980332	980333	Method Blank	QL*
Collector's Sample #	SKUNK-02	SKUNK-03	SKUNK-04	SKUNK-05		
Sample Matrix:	Solid	Solid	Solid	Solid	Solvent	
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound	CAS #					
TPH: Motor Oil Range						
	200	28000	12000	13000	ND	200

Surrogate Standard Recovery		Units: Percent					
o-Terphenyl	84-15-1	91	116	102	118	89	

Note: QL = Quantitation Limit = Lowest calibration standard x dilution factor.
 D = Detected but below QL. ND = Not Detected. NA = Not Applicable due to high sample dilution.

Comments:
 * QL for HML# 980331 is 20x that stated above. QL for HML# 980332 and HML#980333 is 10x that stated above.

Note: Hydrocarbon peaks were detected within the range of the motor oil standard in all the above samples, but chromatographic pattern and peak intensity does not exactly match that of the standard.

Analyst: Juliet Tabajonda
 Supervisor: Jarnall S. Garcha

Signature: *Juliet Tabajonda*
 Signature: *Jarnall S. Garcha*

Date: 10/21/98
 Date: 10/21/98

California Department of Toxic Substances Control
HAZARDOUS MATERIALS LABORATORY
 2151 Berkeley Way, Berkeley, Ca. 94704, Ph (510)540-3101
 Laboratory Report For ... TPH - MOTOR OIL

HML#: 980329
 to: 980334

AN#: HMO3701

Page 3
 of 7

Requestor: Michael Pixton
 Sampling Location: California Western Railroad (Skunk Train)

Date Collected: 09/23/98
 Date Received: 09/24/98
 Date Extracted: 10/07/98
 Date Analyzed: 10/08/98
 Extraction Method: EPA 3550B
 Analysis Method: SCL#816-S
 Extraction Holding Time Met?: YES
 Analysis Holding Time Met?: YES

Extraction Methods: EPA 3510C --- For aqueous samples: Separatory funnel extraction with methylene chloride.
 EPA 3550B --- For solid samples: Sonication extraction with methylene chloride.
 EPA 3580 --- For oils & organic liquid samples: Solvent dilution with methylene chloride.
 Analytical Method: SCL# 816-S --- Analysis by DB-1 megabore capillary column, GC/FID.

HML Number: --->		980334					
Collector's Sample #		SKUNK-06					QL
Sample Matrix:		Solid					
Units:		mg/Kg					mg/Kg
Compound	CAS #						
TPH: Motor Oil							
Range		ND					200

Surrogate Standard Recovery		Units: Percent					
p-Terphenyl	84-15-1	102					

Note: QL = Quantitation Limit = Lowest calibration standard x dilution factor.
 D = Detected but below QL. ND = Not Detected. NA = Not Applicable due to high sample dilution.

Comments:

Analyst: Juliet Tabajonda
 Supervisor: Jarnail S. Garcha

Signature: *J. Tabajonda*
 Signature: *J. Garcha*

Date: 10/21/98
 Date: 10/21/98

California Department of Toxic Substances Control
HAZARDOUS MATERIALS LABORATORY
 2151 Berkeley Way, Berkeley 94704, Ph. 510-540-3101

HML #: 980329
 to 980334

Laboratory Quality Control Report
Duplicate Analysis (High Conc. Samples)

Page: 6
 of 7

Requestor: Michael Pixton

Sampling location: California Western Railroad (Skunk Train)

Date Collected: 09/23/98

Date Extracted: 10/02/98

Date Analyzed: 10/07/98

Extraction Meth.: EPA 3580

Cleanup Method: ---

Analysis Method: SCL 816-S

Analysis for: TPH-Motor Oil

Matrix: <u>Liquid</u> (Organic) Units: -->		Duplicate Analysis Performed On HML #: <u>980304</u>			
		Sample#1	Sample#2	Average	RPD
		% w/w	% w/w	% w/w	%
TPH-Motor Oil		43.6	50.8	47.2	15.3
o-Terphenyl (Surrogate)		NA	NA	NA	NA

QL = quantitation limit = lowest calibration standard x dilution factor

D = detected but below QL

ND = not detected

RPD = Relative percent deviation

NA = Not applicable

Comments:

QC for HML#980329. Sample was batched with HML#980299 to HML#980308 for QC.

Analyst: Juliet s. tabajonda

J. Tabajonda

10/20/98

Supervisor: Jarnail S. Garcha

J. Garcha
 Signature

10/21/98
 Date

980329molqcdup.wq1

California Department of Toxic Substances Control
 HAZARDOUS MATERIALS LABORATORY
 2151 Berkeley Way, Berkeley 94704, Ph. 510-540-3101

For HML# 980329
 to: 980334

Laboratory Quality Control Report
 Matrix Spike / Matrix Spike Duplicate

Page 7
 of: 7

Requestor: Michael Pixton
 Sampling location: California Western Railroad (Skunk Train)
 Analysis for: TPH - Motor Oil
 Matrix spike performed on: 980330

For samples collected on: 09/23/98
 QC sample extraction date: 10/02/98
 QC sample analysis date: 10/08/98
 Extraction method no.: EPA 3550B
 Cleanup method no.: ---
 Analysis method no.: SCL#816-S

Matrix: <u>Solid</u>	Spike Added mg/kg	Sample Conc. * mg/kg	MS Conc. ** mg/kg	MSD Conc. ** mg/kg	QL mg/kg	MS Recovery %	MSD Recovery %	Mean Recovery %	RPD %	Control Limits		
										Mean Recov.		RPD
										Min. %	Max. %	Max. %
TPH - Motor.Oil	2000	200	2180	2540	20.0	109	127	118	15.3			
o-Terphenyl(surrogate)	10.0	ND	9.77	9.52	1.00	97.7	95.2	96.5	2.59			

Comments:
 QC for HML#980330 to HML#980334.

MS = matrix spike; MSD = matrix spike duplicate
 * Concentration in the unspiked sample (background).
 ** MS conc. or MSD conc. = (background + spike) - background
 QL = quantitation limit = lowest calibration standard x dilution factor
 MS or MSD Recovery = (MS or MSD conc.)/(spike added) x 100%
 RPD = absolute value of (MS conc. - MSD conc.)/[(MS conc. + MSD conc.)/2] x 100
 D = detected but below QL
 ND = not detected
 NR = not recovered
 N/A = not applicable (see comments).
 (x) = estimated value
 @ Mean matrix spike recovery is outside of the mean recovery control limits. (not determined yet)
 # The precision exceeds the upper RPD control limit. (Not determined yet)

Analyst: Juliet S. Tabajonda
 Supervisor: Jamall S. Garcha

J S Garcha
 Signature

10/21/98
 Date

Hazardous Materials Laboratory
SAMPLE TRACKING REPORT FORM

Auth. # HML 3701

Laboratory: HML / Berkeley
 Unit : Organic

Location: California Western Railroad
(Shunk Train)

No.	HML #	PL	I Procedure requested	Date Sample(s)				Haz.	Non Haz
				Recev,d	Extracted	Analyzed	Reported		
1	980329	2	Motor Oil	9/24/98	10/2/98	10/7/98	10/20/98	✓	
2	980330	↓	↓	↓	10/7/98	10/8/98	↓		✓
3	980331	↓	↓	↓	↓	↓	↓	✓	
4	980332	↓	↓	↓	↓	↓	↓	✓	
5	980333	↓	↓	↓	↓	↓	↓	✓	
6	980334	↓	↓	↓	↓	↓	↓		✓
7									
8									
9									
10									
11									
12									
13									
14									

Remarks:

Name:
 Title:

Juliet S. Tobey
PACI

Signature:
 Date:

J. Tobey
10/20/98

HAZARDOUS MATERIALS SAMPLE ANALYSIS REQUEST		1. Authorization Number H M O 3 7 0 1	HML No. 980329 To 980334	2. Page L of 1		
3. Requestor: Michael Pitzer		4. Phone (510) 540-3802		7. TAT Level: 1 (circle one)		
5. Address (To Receive Results): 700 Heinz Ave Berkeley		6. FAX (510) 540-3891		Authorized By 2 3 4		
8. Date Sampled Sept. 23 1998		9. Codes (fill in all applicable codes)				
10. Activity: <input checked="" type="checkbox"/> SCD <input type="checkbox"/> SRPD <input type="checkbox"/> SMB <input type="checkbox"/> FPB <input type="checkbox"/> SPPT <input type="checkbox"/> ER/CL <input type="checkbox"/> Others		a. Office 02				
11. SAMPLING LOCATION C A D 0 6 6 1 2 5 7 5 8 a. EPA ID No.		b. INDEX 6 1 1 0				
		c. PCA 3 7 3 2 2				
b. Site California Western Railroad (Kink Train)		d. MPC				
c. Address		e. SITE 2 4 1 1 2 1 + 3 3				
Number Street City ZIP		f. County 2 3				
12. SAMPLES						
a. ID	b. Collector's No.	c. Lab No.	d. Type	e. Type	f. Size	g. Field Information
A	SIKWINK-1011	980329	oil	glass	8oz Tall	recycled oil
B	SIKWINK-1012	980330	solid		8oz short	ash
C	SIKWINK-1013	980331				city debris
D	SIKWINK-1014	980332				oil & ash
E	SIKWINK-1015	980333				
F	SIKWINK-1016	980334				
G						
H						
13. ANALYSIS REQUESTED					i. <input type="checkbox"/> OP - Pest	
a. <input type="checkbox"/> pH		f. <input type="checkbox"/> PAHs - 8310		m. <input type="checkbox"/> VOA - 8021		
b. <input checked="" type="checkbox"/> Metal Scan A-F		g. <input type="checkbox"/> PCBs		n. <input type="checkbox"/> VOA - 8260		
c. <input type="checkbox"/> Metals (Spec)		h. <input checked="" type="checkbox"/> TPH A-F <i>waste oil</i>		o. <input type="checkbox"/> SVO - 8270		
d. <input checked="" type="checkbox"/> W.E.T. if needed		i. <input type="checkbox"/> Gasoline		p. <input type="checkbox"/> TCLP - (specify)		
e. <input type="checkbox"/> Flash Point		j. <input type="checkbox"/> Diesel		q. <input type="checkbox"/>		
k. <input type="checkbox"/> Cl - Pest						
14. SPECIAL REMARKS/ANALYSIS OBJECTIVE:						
15. SUPPLEMENTAL REQUESTS <input checked="" type="checkbox"/> JTD A <input type="checkbox"/>					Initials _____	
					Date _____	
16. CHAIN OF CUSTODY						
a.	Michael Pitzer Signature	Michael Pitzer/HSS Name/Title	09/23/98 - 09/24/98 Inclusive Dates			
b.	Debra Heenan Signature	Terena Heenan/lab Asst. Name/Title	09/24/98 - / / Inclusive Dates			
c.	_____ Signature	_____ Name/Title	/ / - / / Inclusive Dates			
d.	_____ Signature	_____ Name/Title	/ / - / / Inclusive Dates			
17. LAB REMARKS:						

GRANT AGREEMENT

CIWMB110 (NEW 10/96)

GRANT NUMBER

URD2-96-1841

NAME OF GRANT PROGRAM

1996/97 Used Oil Research, Testing & Demonstration Grants

GRANT RECIPIENT'S NAME

California Western Railroad

TAXPAYER'S FEDERAL EMPLOYER IDENTIFICATION NUMBER

68-038679

TOTAL GRANT AMOUNT NOT TO EXCEED

\$58,890.00

TERM OF GRANT AGREEMENT

FROM: June 30, 1997

TO: December 31, 1998

THIS AGREEMENT is made and entered into on this 30th day of June, 1997, by the State of California, acting through the Executive Director of the California Integrated Waste Management Board (the "State") and California Western Railroad (the "Grantee"). The State and the Grantee, in mutual consideration of the promises made herein, agree as follows:

The Grantee agrees to perform the work described in the Work Statement attached hereto as Exhibit A according to the Budget attached hereto as Exhibit B.

The Grantee further agrees to abide by the provisions of the following exhibits attached hereto:

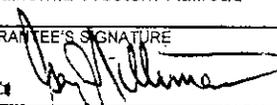
Exhibit C - Terms and Conditions

Exhibit D - Procedures and Requirements

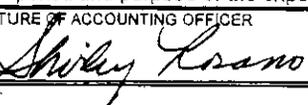
Exhibits A, B, C, and D attached hereto and the State approved grant application are incorporated by reference herein and made a part hereof.

The State agrees to fund work done by the Grantee in accordance with this Agreement up to the Total Grant Amount Not to Exceed specified herein.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the dates entered below.

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD		GRANTEE'S NAME (PRINT OR TYPE)	
SIGNATURE		GRANTEE'S SIGNATURE	
			
Ralph E. Chandler, Executive Director		TITLE	DATE
DATE		PRESIDENT	7/20/97
8/1/97		(Authorized representative)	
		GRANTEE'S ADDRESS (INCLUDE STREET, CITY, STATE AND ZIP CODE)	
		POB 907 FORT BRAGG, CA 95437	

CERTIFICATION OF FUNDING

AMOUNT ENCUMBERED BY THIS AGREEMENT	PROGRAM/CATEGORY (CODE AND TITLE)	FUND TITLE	
\$58,890.00	1996/97 Used Oil Research, Testing & Demonstration Grants	CA Used Oil Recycling	
PRIOR AMOUNT ENCUMBERED FOR THIS AGREEMENT	(OPTIONAL USE)		
TOTAL AMOUNT ENCUMBERED TO DATE	ITEM	CHAPTER	STATUTE
\$58,890.00	3910-602-0100	817	1991
	FISCAL YEAR		
	1996/97		
	OBJECT OF EXPENDITURE (CODE AND TITLE)		
	1100-23100-418		
I hereby certify upon my own personal knowledge that budgeted funds are available for the period and purpose of the expenditure stated above.		T.B.A. NO.	B.R. NO.
SIGNATURE OF ACCOUNTING OFFICER		DATE	
		7-29-97	

Appendix G

Invoice Walsh Oil Company
August 1, 1998

Investigation Report
California Western Railroad – Skunk Train
September 23, 1998

WALSH OIL COMPANY, INC.

635 North Franklin Street Fort Bragg, CA 95437
 Phone: (707) 964-0122 or 964-2412 or 964-2391

CALIFORNIA WESTERN RAILROAD
 PO Box 907
 FORT BRAGG CA 95437

INVOICE		
No 124559		
Date 8-1-98		
Cash	Ck.	Charge ✓
Credit Card	Bank Card	
Account Number 22037		

Gallons or Lbs.	PRODUCT	PRICE	AMOUNT	
	Regular Unleaded			
	Super Reg. Unleaded			
	Super Unleaded			
	Regular Diesel			
	Heating Fuel			
6500	RECYCLED FUEL OIL	.42	2730	00
TERMS: Net 15 days from date of invoice. Service charges of 1.5% per month on past due accounts. Received By:		SUB TOTAL		
		SALES TAX	197	93
		DRUM CHARGE		
		TOTAL	2927	93

POS
5540B

RECEIVED AUG 24 1998

Appendix H

Official Sample Receipt
September 23, 1998

Investigation Report
California Western Railroad – Skunk Train
September 23, 1998

Northern California Region

OFFICIAL SAMPLE RECEIPT

Southern California Region

Sacramento Office
10151 Croydon Way, Suite 3
Sacramento, CA 95827
(916) 855-7700

Glendale Office
1011 N. Grandview Avenue
Glendale, CA 91201
(818) 551-2800

Clovis Office
1515 Tollhouse Road
Clovis, CA 93611
(209) 297-3901

Cypress Office
5796 Corporate Avenue
Cypress, CA 90630
(714) 484-5300

Berkeley Office
700 Heinz Avenue, Suite 200
Berkeley, CA 94710
(510) 540-2122

Firm Name <i>California Western Railroad</i>		Date <i>9/23/98</i>
Address	City <i> Ft. Bragg</i>	Zip Code
Person Interviewed <i>Gary Milliman</i>	Position <i>President</i>	

The items listed below were collected as official samples on this date as authorized by Section 66272.1, California Code of Regulations, Title 22.

Quantity	Unit Size	Sample Description	ID Number
1	8oz	oil from tank car	SKunk-01
1	↓	ash on soil - north of roundhouse	SKunk-02
1		oily debris on soil - " "	SKunk-03
1		ash/oil on soil - south of roundhouse	SKunk-04
1		" " " "	SKunk-05
1		ash in bucket from boiler cleanout	SKunk-06

Receipt acknowledged by:

[Signature]
Signature

By *Michael Biston*
Authorized Agent

Appendix I

Three Screen Prints from Haznet database

Investigation Report
California Western Railroad – Skunk Train
September 23, 1998

HZ5060P0

***** (PT TOXIC SUBSTANCES CONTROL) *****

HZ5060M1

Sep 09, 98

- HAZNET INFORMATION SYSTEM -

01:00 PM

3 Copies= 0 Pairs+ 3 Single// 0 Gen + 3 TSD

D	Manifest Nbr	Cy	P	Extn	F	Shipped	Generator	Transporter	Tsd
-	97407082	D				19980227	CAD066125758	ILD984908202	CAT000613943
-	97368043	D				19980423	CAD066125758	ILD984908202	CAT000613943
-	98181481	D				19980618	CAD066125758	ILD984908202	CAT000613943

***** End of Data *****

EPA ID: CAD066125758 FROM: 01 01 1998 THRU: 09 09 1998

Direct Command:

PF1=help, PF3=goBack, PF4=mainMenu, PF7=bckwrđ, PF8=frwrđ, PF12=eXit

HZ5060P0

***** I T TOXIC SUBSTANCES CONTROL *****

HZ5060M1

Sep 09, 98

- HAZNET INFORMATION SYSTEM -

12:59 PM

9 Copies= 1 Pairs+ 7 Single// 0 Gen + 7 TSD

D	Manifest Nbr	Cy	P	Extn	F	Shipped	Generator	Transporter	Tsd
-	96378534		D			19970206	CAD066125758	ILD984908202	CAT000613943
-	96817572		D			19970403	CAD066125758	ILD984908202	CAT000613943
-	96619899		D			19970529	CAD066125758	ILD984908202	CAT000613943
-	96450114		G	X		19970530	CAD066125758	CAD081157166	CAD044429835
-	96450114		D	X		19970530	CAD066125758	CAD081157166	CAD044429835
-	96860296		D			19970716	CAD066125758	ILD984908202	CAT000613943
-	96469918		D			19970911	CAD066125758	ILD984908202	CAT000613943
-	96841640		D			19971106	CAD066125758	ILD984908202	CAT000613943
-	97356156		D			19971230	CAD066125758	ILD984908202	CAT000613943

***** End of Data *****

EPA ID: CAD066125758 FROM: 01 01 1997 THRU: 12 31 1997

Direct Command:

PF1=help, PF3=goBack, PF4=mainMenu, PF7=bckwrld, PF8=frwrld, PF12=eXit

HZ5060P0

***** (PT TOXIC SUBSTANCES CONTROL) *****

HZ5060M1

Sep 09, 98

- HAZNET INFORMATION SYSTEM -

01:00 PM

6 Copies= 0 Pairs+ 6 Single// 0 Gen + 6 TSD

D	Manifest Nbr	Cy	P	Extn	F	Shipped	Generator	Transporter	Tsd
-	95958696	D				19960208	CAD066125758	ILD984908202	CAT000613943
-	96071887	D				19960403	CAD066125758	ILD984908202	CAT000613943
-	96134707	D				19960529	CAD066125758	ILD984908202	CAT000613943
-	96104283	D				19960809	CAD066125758	ILD984908202	CAT000613943
-	96478123	D				19961017	CAD066125758	ILD984908202	CAT000613943
-	96460684	D				19961205	CAD066125758	ILD984908202	CAT000613943

***** End of Data *****

EPA ID: CAD066125758 FROM: 01 01 1996 THRU: 12 31 1996

Direct Command:

PF1=help, PF3=goBack, PF4=mainMenu, PF7=bckwrd, PF8=frwrd, PF12=eXit