Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

June 19, 2003

Mr. Edward Lander
Cheap Dave's Auto Salvage
3024 Apopka Boulevard
Apopka, Florida 32703-9347

Re: Facility No.: 0951263-001

Dear Mr. Lander:

The Department has received the Title V General Permit Notification Form for the secondary aluminum sweat furnace facility that you submitted on May 28, 2003.

Please note that in January of each year the Department will be mailing fee notices to those facilities using the Title V general permit. This annual operation fee is $50 and it is due and payable between January 15 and March 1 of each year the facility is in operation and is subject to the requirements of the Title V general permit.

If you have or expect to have any changes in your mailing address, location address, responsible official, or phone number, please notify the Department at the following address:

Title V General Permits Office
Bureau of Air Monitoring and Mobile Sources MS 5510
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

If there are any changes in the facility status, including change of operating parameters or equipment, or if you have any additional questions regarding the Title V General Permit Program, please contact the district or local air program compliance inspector in your area.

Sincerely,

for Joseph Kahn, Chief
Bureau of Air Monitoring
and Mobile Sources

JK/jw

cc: Ms. Marie Driscoll, Orange County

SECONDARY ALUMINUM SWEAT FURNACE AIR GENERAL PERMIT REGISTRATION FORM

Registration Type

Check one:

- ✠ **NEW**: Initial registration for general permit for proposed *new* secondary aluminum sweat furnace(s).
- ☐ **EXISTING**: Initial registration for general permit for *existing* secondary aluminum sweat furnace(s).
- ☐ **RE-REGISTRATION**: Re-registration for general permit for secondary aluminum sweat furnace(s) upon expiration of current general permit.

Facility Registration

Facility Owner/Company Name (Name of corporation, agency, or individual owner):
CHEAP EDDIE'S AUTO SALVAGE, INC. D.B.A.
Cheap Dave's Auto Salvage

Site Name (For example, plant name or number):
Cheap Dave's Auto Salvage

Facility Location...
Street Address or Other Locator: **3024 Apopka Blvd.**
City: **Apopka** County: **Orange** Zip Code: **32703-9347**

Facility Identification Number (DEP use only; do not fill in): 0951263-001

Responsible Official

Responsible Official Name:
Edward Lander

Responsible Official Qualification (Check one or more of the following options, as applicable):

[X] For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.

[ ] For a partnership or sole proprietorship, a general partner or the proprietor, respectively.

[ ] For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.

Responsible Official Mailing Address... CHEAP EDDIE'S AUTO SALVAGE, INC. D.B.A
Organization/Firm: **Cheap Dave's Auto Salvage**
Street Address: **3024 Apopka Blvd.**
City: Apopka County: **Orange** Zip Code: **32703-9347**

Responsible Official Telephone Numbers...
Business: **(407) 299-0001** & 407/293-1313 Fax: **(407) 299-0021**
Mobile: **(407) 448-3380**

Responsible Official Email Address (optional): **Use business address**

Facility Description and Comments

Number of secondary aluminum sweat furnace units on site: 1

Is each secondary aluminum sweat furnace equipped with an afterburner that has a design residence time of at least 0.8 seconds and a design operating temperature of at least 1600 degrees Fahrenheit, and is the manufacturer's documentation of these design specifications maintained on-site? **Yes it is.**

If 'No,' explain _____

_____

Does each secondary aluminum sweat furnace have an afterburner temperature monitoring device and temperature data recorder? **Yes it does.**

If 'No,' explain _____

_____

Does each secondary aluminum sweat furnace have a written operation, maintenance, and monitoring (OM&M) plan, and is this plan maintained on-site? **Yes it does.**

If 'No,' explain _____

_____

Does each secondary aluminum sweat furnace have a written startup, shutdown and malfunction plan, and is this plan maintained on-site? **Yes it does.**

If 'No,' explain _____

_____

List and briefly describe all other process operations at the site that may emit air pollutants (for example, scrap shredders, degreasers, paint shops, boilers, emergency generators, etc.). Add any comments about the facility that would be helpful to the Department in understanding the nature of your operation (for example, describe the products made, amount of materials used, air pollution control equipment employed, and hours of operation).

Cheap Dave's is an auto dis-assembler and used parts sales operation. The raw material, used automobiles, are taken apart and salable parts are resold. Aluminum motors and transmissions are removed and will be melted in the furnace for sale to the scrap aluminum market

Facility Contact (If different from Responsible Official)

Facility Contact Name: Edward Landers, President
Facility Contact Address... Street Address: **3024 Apopka Blvd.** City: **Apopka** County: **Orange** Zip Code: **32703-9347**
Facility Contact Telephone Numbers... Business: **(402) 299-0001** Fax: **(407) 299-0021** Mobile: **(407) 448-3380**
Facility Contact Email Address (optional): promaxinc@mpinet.net

Surrender of Existing DEP Air Permit(s)

Rule 62-213.300(2)(a)2., F.A.C., makes the surrender of all existing DEP air permits, other than the air general permit, a condition precedent for the entitlement to a general permit. Indicate with an "X" whether the responsible official surrenders such permit(s), listing the permit number(s), or whether no such permit(s) exist. Complete this portion of the form **ONLY** if this is an initial registration for general permit:

[____] I hereby surrender all existing DEP air permits (other than the air general permit for which this registration form is submitted). The permit number(s) are: _____.

[**X**] No DEP air permits currently exist for the operation of the facility indicated in this registration form.

Responsible Official Certification

I, the undersigned, am the responsible official of the facility addressed in this registration form. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this registration form are true, accurate and complete, and that the facility addressed in this registration form is entitled to use the Title V air general permit for secondary aluminum sweat furnaces. Further, I agree to operate and maintain the air pollutant emissions units and air pollution control equipment described in this registration form so as to comply with all terms and conditions of the Title V air general permit for secondary aluminum sweat furnaces as set forth at Rule 62-213.300(1)(f), F.A.C.

I will promptly notify the Department of any changes to the information contained in this registration form.

Edward Landers, President
Print name of responsible official

Edward H. Landers
Signature

05/23/03
Date

ESTIMATED EMISSIONS FROM THE COMBUSTION OF WASTE OIL AND WASTE GASOLINE
MIXED 60% OIL TO 40% GAL FOR AN AK-8500 OPERATING AT 2.5 MMBtu/HR AT THE
Cheap Dave's Auto Salvage, Apopka, Florida

Emissions are estimated using a mix of 60/40 oil to gas. Oil is high ash but negligible in gasoline. Likewise, other factors in the AP-42 tables were reduced by amounts estimated to take into account the mix if waste fuels.
All emissions are based on AP-42. PM is over estimated here because the .8 sec at 1600 retention will reduce PM to a number on the order of 0.0023 LB/Hr. (see Air Recon Test Results). Since the Air Recon tests were done using Natural gas, I have used the AP-41 emission factors to calculate this table.

Nitrogen Oxides (NOx)										0.746	Lbs/hr NOx
2900000	Btu	x	1	gal	x	36	lbs NOx	=	**3.266**	TPY @ 8760 hrs
1	Hr		140000	Btu		1000	gal		17.897	Lbs/day

Note: Calculation of NOx is based on AP 42 plus 4/5th to account for increased NOx formation at 1600°F for 0.8 sec.

Sulfur Dioxide (SOx)										1.533	Lbs/hr SOx
2900000	Btu	x	1	gal	x	74	lbs SO2	=	**6.714**	TPY @ 8760 hrs
1	Hr		140000	Btu		1000	gal		36.789	Lbs/day

Note: Calculation of SO2 is based on an estimate of 0.5% sulfur in the fuel.

Carbon Monoxide										0.003	Lbs/hr CO
2900000	Btu	x	1	gal	x	0.165	lbs CO	=	**0.015**	TPY @ 8760 hrs
1	Hr		140000	Btu		1000	gal		0.082	Lbs/day
		Correction factor:		5	Lbs CO from AP-42			=	0.165	Lb CO/1000 gal
				132.5	combustion factor					

Note: CO factor is calculated using the AP 42 runber and then reducing it by a factor of 132.5 (see Air Resource data).
At 1600+ degrees for 0.8 seconds practically all the CO will be converted to CO2.

Total Organic Compounds										0.000009	Lbs/hr HC
2900000	Btu	x	1	gal	x	0.00045	lbs TOC	=	**0.00004**	TPY @ 8760 hrs
1	Hr		140000	Btu		1000	gal		0.000	Lbs/day
Correction factors:		1	Lbs CO from AP-42	=		0.001		=	0.00045	lb TOC/1000 gal
		1111	combustion factor			2.000	fuel factor			

Note: TOCs in waste oil will be substantially consumed in the afterburner and rendered into CO2. In recognition of that, and based on reductions shown by Air Resources tests in NJ, PM will be 1/111th less than AP 42. In addition, waste oil will only comprise 60% of the fuel so the factor has been reduced by 50% again to take this into account.
The 10% not subtracted is intended to be the PM created by the40% gasoline in the fuel mixture. This is an estimate because no data could be found that gave an external combustion emission factor for PM for gasoline.
At 1600+ degrees for 0.8 seconds practically all the TOCs will be converted to CO2

Particulate Matter (PM)										0.018	Lbs/hr PM
2900000	Btu	x	1	gal	x	0.865	lbs PM	=	**0.078**	TPY @ 8760 hrs
1	Hr		140000	Btu		1000	gal		0.430	Lbs/day
Correction factors:		46.7	Lbs CO from AP-42	=		1.730		=	0.865	lb TOC/1000 gal
		27	combustion factor			2.000	fuel factor			

(PM calculated from AP-42 for small boilers is 64 X .73% = 46.7 lbs PM/1000 gal mixed fuel)

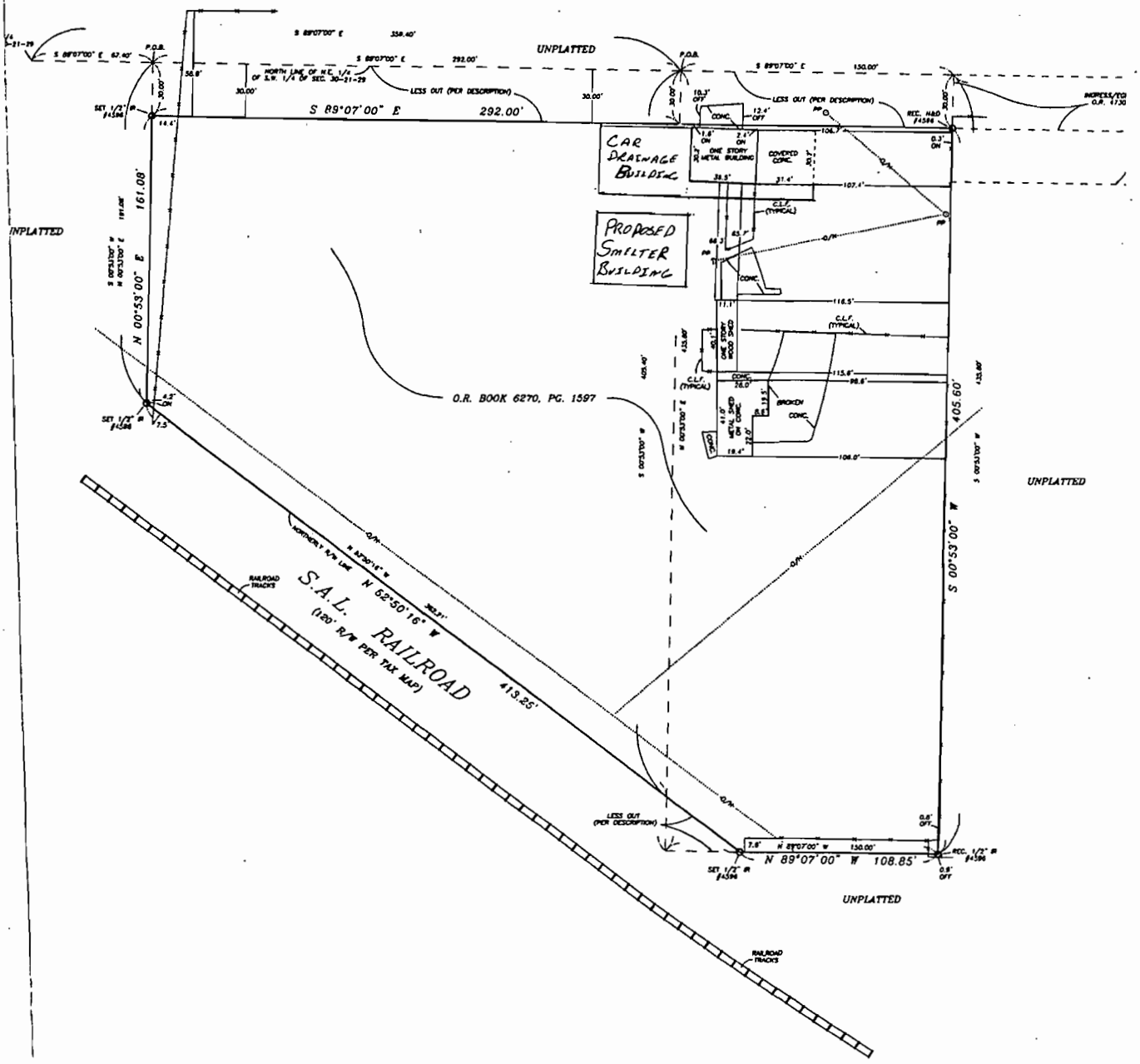
Note: PM or carbon ash in waste oil will be substantially consumed in the afterburner and rendered into CO2. In recognition of that, and based on reductions shown by Air Resources tests in NJ, PM will be 1/24 less than AP 42. In addition, waste oil will only comprise 60% of the fuel so the factor has been reduced by 50% again to take this into account.
The 10% not subtracted is intended to be the PM created by the40% gasoline in the fuel mixture. This is an estimate because no data could be found that gave an external combustion emission factor for PM for gasoline.
At 1600+ degrees for 0.8 seconds practically all the TOCs will be converted to CO2

Potential emissions/Yr on waste oil/gasoline = 10.074 Tons/Year

ACTUAL EMISSIONS BASED ON PROJECTED OPERATING HOURS

Operating:	8	hrs	5	days/wk	52	Wks/Yr	=	2080	hours/year =	260	days
Nitrogen Oxides (NOx)											
2080	Hrs	x	0.746	Lb	x	1	Ton	=	0.776	Tons/Year	
1	Yr		1	Hr		2000	Lbs		6.204	Lbs/Day	
Sulfur Dioxide (SOx)											
2080	Hrs	x	1.533	Lb	x	1	Ton	=	1.594	Tons/Year	
1	Yr		1	Hr		2000	Lbs		12.753	Lbs/Day	
Carbon Monoxide (CO)											
2080	Hrs	x	0.003	Lb	x	1	Ton	=	0.004	Tons/Year	
1	Yr		1	Hr		2000	Lbs		0.028	Lbs/Day	
Total Organic Carbon (HC)											
2080	Hrs	x	0.000009	Lb	x	1	Ton	=	0.000010	Tons/Year	
1	Yr		1	Hr		2000	Lbs		0.000078	Lbs/Day	
Particulate Matter (total)											
2080	Hrs	x	0.018	Lb	x	1	Ton	=	0.019	Tons/Year	
1	Yr		1	Hr		2000	Lbs		0.149	Lbs/Day	
					Actual pounds/hour			=	**2.30**	**Lbs/Hr**	
					Actual pounds/Day			=	**18.40**	**Lbs/Day**	
					Actual Total Emissions			=	**2.39**	**Tons/Year**	

CHEAP DAVE'S AUTO SALVAGE
3024 APOPKA BOULEVARD
APOPKA, FL 32703-9347



NOTES CORRESPONDING TO "EXHIBIT A" OF O.R. 6270, PG. 1598 AS FURNISHED TO SURVEYOR:

MAPQUEST

ORBITZ

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32703-9347 US

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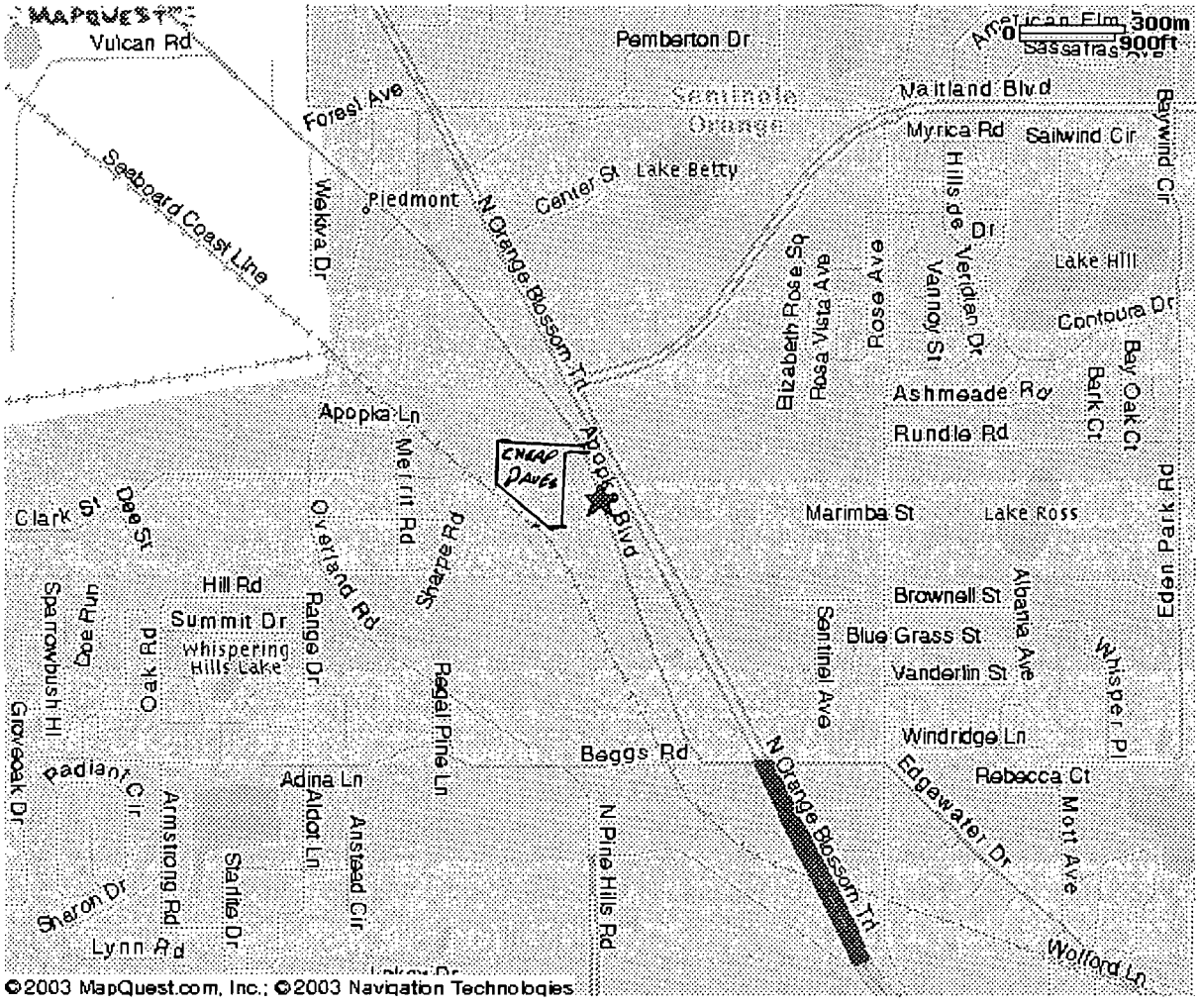

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Environmental Management
61 Middle St., Hallowell, Maine 04347

May 21, 2003

Ms. Sandy Bowman
Small Business Assistance Section
Florida Dept. of Environmental Protection
2600 Blairestone Rd.
MS 5500
Tallassee, Florida 32399

Dear Ms. Bowman:

Attached in an application under the new General Permit for Secondary Aluminum facilities rule for Cheap Dave's Auto Salvage in Apopka. I have completed the application for Mr. Ed Landers and if there are any questions please call me at 207-622-4036.

Please thank Mr. Thomas for all his assistance with this new permit process. Having completed a permit for a similar facility under the old Title V system I can tell you this is much easier to deal with for a tiny source like this.

Sincerely,

John Bastey
President

Telephone/FAX 207-622-4036 Email: Jbastey@adelphia.net

1.11 Waste Oil Combustion

1.11.1 General[1]

Waste oil includes used crankcase oils from automobiles and trucks, used industrial lubricating oils (such as metal working oils), and other used industrial oils (such as heat transfer fluids). When discarded, these oils become waste oils due to a breakdown of physical properties and contamination by the materials they come in contact with. The different types of waste oils may be burned as mixtures or as single fuels where supplies allow. Waste, or used, oil can be burned in a variety of combustion systems including industrial boilers; commercial/institutional boilers; space heaters; asphalt plants; cement and lime kilns; other types of dryers and calciners; and steel production blast furnaces. Boilers and space heaters consume the bulk of the waste oil burned. Space heaters are small combustion units (generally less than 250,000 British thermal units per hour [Btu/hr] input) that are common in automobile service stations and automotive repair shops where supplies of waste crankcase oil are available.

Boilers designed to burn No. 6 (residual) fuel oils or one of the distillate fuel oils can be used to burn waste oil, with or without modifications for optimizing combustion. As an alternative to boiler modification, the properties of waste oil can be modified by blending it with fuel oil, to the extent required to achieve a clean-burning fuel mixture.

1.11.2 Emissions[1]

The emissions from burning waste oils reflect the compositional variations of the waste oils. Potential pollutants include carbon monoxide (CO), sulfur oxides (SO_x), nitrogen oxides (NO_x), particulate matter (PM), particles less than 10 micrometers in size (PM-10), toxic metals, organic compounds, hydrogen chloride, and global warming gases (carbon dioxide [CO_2], methane [CH_4]).

Particulate Matter[1] -

Ash levels in waste oils are normally much higher than ash levels in either distillate oils or residual oils. Waste oils have substantially higher concentrations of most of the trace elements reported relative to those concentrations found in virgin fuel oils. Without air pollution controls, higher concentrations of ash and trace metals in the waste fuel translate to higher emission levels of PM and trace metals than is the case for virgin fuel oils.

Sulfur Oxides[1] -

Emissions of SO_x are a function of the sulfur content of the fuel. The sulfur content varies but some data suggest that uncontrolled SO_x emissions will increase when waste oil is substituted for a distillate oil but will decrease when residual oil is replaced.

Chlorinated Organics[1] -

Constituent chlorine in waste oils typically exceeds the concentration of chlorine in virgin distillate and residual oils. High levels of halogenated solvents are often found in waste oil as a result of inadvertent or deliberate addition of contaminant solvents to the waste oils. Many efficient combustors can destroy more than 99.99 percent of the chlorinated solvents present in the fuel. However, given the wide array of combustor types which burn waste oils, the presence of these compounds in the emission stream cannot be ruled out.

Other Organics[1] -

The flue gases from waste oil combustion often contain organic compounds other than chlorinated solvents. At ppmw levels, several hazardous organic compounds have been found in waste oils. Benzene, toluene, polychlorinated biphenyls (PCBs), and polychlorinated dibenzo-d-dioxins are a few of the hazardous compounds that have been detected in waste oil samples. Additionally, these hazardous compounds may be formed in the combustion process as products of incomplete combustion.

1.11.3 Controls[1]

Emissions can be controlled by the pretreatment of the waste oil to remove the pollutant precursors or with emission controls to remove the air pollutants. Reduction of emission levels is not the only purpose of pretreatment of the waste oil. Improvement in combustion efficiency and reduction of erosion and corrosion of the combustor internal surfaces are important considerations. The most common pretreatment scheme uses sedimentation followed by filtration. Water and large particles (greater than 10 microns in diameter) are removed without having much effect on sulfur, nitrogen, or chlorine contents. Other methods of pretreatment involve clay contacting; demetallization by acid, solvent, or chemical contacting; and thermal processing to remove residual water and light ends. These latter processes might be attractive as waste reduction schemes or to recycle the waste oil, but the added costs probably hinder their use as part of a combustion process.

Blending of waste oil with a virgin fuel oil is practiced frequently and has the same effect as some of the other pretreatment processes. However, for the purpose of developing emission factors, blending by itself was assumed to be in the uncontrolled category.

Waste oil serves as a substitute fuel for combustors designed to burn distillate or residual oils. Therefore, the emission controls are usually those in place when waste oil is first burned. For small boilers and space heaters, all of the sources having acceptable test data for determining emission factors were uncontrolled. For an asphalt plant, PM emissions, which included the dust from drying of the aggregate, were controlled with a fabric filter.

Emission factors and emission factor ratings for waste oil combustion are shown in Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5. Emission factors have been determined for emissions from uncontrolled small boilers and space heaters combusting waste oil. These factors apply to both blended and unblended waste oil fuels when waste oil comprises the majority of the fuel combusted. If virgin oil comprises the majority of the fuel combusted, the emission factors presented in Section 1.3, Fuel Oil Combustion, should be used.

Evaporative emissions from waste oil used as a diluent in batch asphalt plants may be estimated using the procedures outlined in Section 4.5.

Tables in this section present emission factors on a volume basis ($lb/10^3gal$). To convert to an energy basis (lb/MMBtu), divide by the heating value of the oil in units of $MMBtu/10^3gal$, if known. If the heating value is not known, and the waste oil is blended with residual oil, divide by a heating value of 150 $MMBtu/10^3gal$. If the waste oil is blended with distillate oil, divide by a heating value of 140 $MMBtu/10^3gal$.

1.11.4 Updates Since the Fifth Edition

The Fifth Edition was released in January 1995. Revisions to this section since that date are summarized below. For further detail, consult the memoranda describing each supplement or the

background report for this section.

Supplement A, February 1996

- An earlier transcription error was corrected and the TOC emission factor was changed from 0.1 to 1.0 lb/1000 gal.

Supplement B, October 1996

- Math errors were corrected and factors for As, Be, Cd, Cr, Co, and speciated organics were changed.

- The CO_2 factors were revised based on a review of existing information.

Table 1.11-1. EMISSION FACTORS FOR PARTICULATE MATTER (PM), PARTICULATE MATTER LESS THAN 10 MICROMETERS (PM-10), AND LEAD (Pb) FROM WASTE OIL COMBUSTORS[a]

Source Category (SCC)	PM[b]		PM-10[c]		Pb[d]	
	Emission Factor ($lb/10^3$ gal)	EMISSION FACTOR RATING	Emission Factor ($lb/10^3$ gal)	EMISSION FACTOR RATING	Emission Factor ($lb/10^3$ gal)	EMISSION FACTOR RATING
Small boilers (1-03-013-02)	64A[d]	C	51A	C	55L[f]	D
Space heaters Vaporizing burner (1-05-001-14, 1-05-002-14)	2.8A	D	ND	NA	0.41L	D
Atomizing burner (1-05-001-13, 1-05-002-13)	66A	D	57A	E	50L	D

[a] Units are lb of pollutant/10^3 gallons of blended waste oil burned. To convert from $lb/10^3$ gallons to kg/m^3, multiply by 0.12. SCC = Source Classification Code. ND = no data. NA = not applicable.

[b] References 2-5.

[c] Reference 1.

[d] References 4-6.

[e] A = weight % ash in fuel. Multiply numeric value by A to obtain emission factor. For example, if ash content is 5%, then A = 5.

[f] L = weight % lead in fuel. Multiply numeric value by L to obtain emission factor. For example, if lead content is 5%, then L = 5.

Table 1.11-2. EMISSION FACTORS FOR NITROGEN OXIDES (NO_x), SULFUR OXIDES (SO_x), AND CARBON MONOXIDE (CO) FROM WASTE OIL COMBUSTORS[a]

Source Category (SCC)	NO_x[b]		SO_x[b]		CO[c]	
	Emission Factor ($lb/10^3$ gal)	EMISSION FACTOR RATING	Emission Factor ($lb/10^3$ gal)	EMISSION FACTOR RATING	Emission Factor ($lb/10^3$ gal)	EMISSION FACTOR RATING
Small boilers (1-03-013-02)	19	C	147S[d]	C	5	D
Space heaters Vaporizing burner (1-05-001-14, 1-05-002-14)	11	D	100S[d]	D	1.7	D
Atomizing burner (1-05-001-13, 1-05-002-13)	16	D	107S[d]	D	2.1	D

[a] Units are lb of pollutant/10^3 gallons of blended waste oil burned. To convert from $lb/10^3$ gallons to kg/m^3, multiply by 0.12. SCC = Source Classification Code.

[b] References 4, 7.

[c] References 2, 5.

[d] S = weight % sulfur in fuel. Multiply numeric value by S to obtain emission factor. For example, if sulfur content is 3.4%, then S = 3.4.

Table 1.11-3. EMISSION FACTORS FOR TOTAL ORGANIC COMPOUNDS (TOC), HYDROGEN CHLORIDE (HCl), AND CARBON DIOXIDE (CO_2) FROM WASTE OIL COMBUSTORS[a]

Source Category (SCC)	TOC[b]		HCl[b]		CO_2[c]	
	Emission Factor ($lb/10^3$ gal)	EMISSION FACTOR RATING	Emission Factor ($lb/10^3$ gal)	EMISSION FACTOR RATING	Emission Factor ($lb/10^3$ gal)	EMISSION FACTOR RATING
Small boilers (1-03-013-02)	1.0	D	66Cl[d]	C	22,000	C
Space heaters Vaporizing burner (1-05-001-14, 1-05-002-14)	1.0	D	ND	NA	22,000	D
Atomizing burner (1-05-001-13, 1-05-002-13)	1.0	D	ND	NA	22,000	D

[a] Units are lb of pollutant/10^3 gallons of blended waste oil burned. To convert from $lb/10^3$ gallons to kg/m^3, multiply by 0.12. SCC = Source Classification Code. ND = no data. NA = not applicable.

[b] Reference 1.

[c] References 2-4. Ranges from 18,000 to 25,000 lb of $CO_2/10^3$gal, depending on carbon content.

[d] Cl = weight % chlorine in fuel. Multiply numeric value by Cl to obtain emission factor. For example, if chlorine content is 3%, Cl = 3.

Table 1.11-4. EMISSION FACTORS FOR SPECIATED METALS FROM WASTE OIL COMBUSTORS[a]

EMISSION FACTOR RATING: D

Pollutant	Small Boilers Emission Factor ($lb/10^3$ gal)[b] (SCC 1-03-013-02)	Space Heaters: Vaporizing Burner Emission Factor ($lb/10^3$ gal)[c] (SCC 1-05-001-14, 1-05-002-14)	Space Heaters: Atomizing Burner Emission Factor ($lb/10^3$ gal)[c] (SCC 1-05-001-13, 1-05-002-13)
Antimony	BDL	3.4 E-04	4.5 E-03
Arsenic	1.1 E-01	2.5 E-03	6.0 E-02
Beryllium	BDL	BDL	1.8 E-03
Cadmium	9.3 E-03	1.5 E-04	1.2 E-02
Chromium	2.0 E-02	1.9 E-01	1.8 E-01
Cobalt	2.1 E-04	5.7 E-03	5.2 E-03
Manganese	6.8 E-02	2.2 E-03	5.0 E-02
Nickel	1.1 E-02	5.0 E-02	1.6 E-01
Selenium	BDL	BDL	BDL
Phosphorous	ND	3.6 E-02	ND

[a] Pollutants in this table represent metal species measured for waste oil combustors. Other metal species may also have been emitted but were either not measured or were present at concentrations below analytical detection limits. Units are lb of pollutant/10^3 gallons of waste oil burned. To convert from $lb/10^3$ gallons to kg/m^3, multiply by 0.12. BDL = below detection limit. SCC = Source Classification Code. ND = no data.

[b] Reference 4.

[c] References 4-5.

Table 1.11-5. EMISSION FACTORS FOR SPECIATED ORGANIC COMPOUNDS FROM WASTE OIL COMBUSTORS[a]

EMISSION FACTOR RATING: D

Pollutant	Space Heaters: Vaporizing Burner (SCC 1-05-001-14, 1-05-002-14) Emission Factor (lb/10^3 gal)	Space Heaters: Atomizing Burner (SCC 1-05-001-13, 1-05-002-13) Emission Factor (lb/10^3 gal)
Phenol	2.4 E-03	2.8 E-05
Dichlorobenzene	8.0 E-07	ND
Naphthalene	1.3 E-02	9.2 E-05
Phenanthrene/anthracene	1.1 E-02	1.0 E-04
Dibutylphthalate	ND	3.4 E-05
Butylbenzylphthalate	5.1 E-04	ND
Bis(2-ethylhexyl)phthalate	2.2 E-03	ND
Pyrene	7.1 E-03	8.3 E-06
Benz(a)anthracene/chrysene	4.0 E-03	ND
Benzo(a)pyrene	4.0 E-03	ND
Trichloroethylene	ND	ND

[a] Reference 4. Pollutants in this table represent organic species measured for waste oil combustors. Other organic species may also have been emitted but were either not measured or were present at concentrations below analytical detection limits. Units are lb of pollutant/10^3 gallons of waste oil burned. To convert from lb/10^3 gallons to kg/m^3, multiply by 0.12. SCC = Source Classification Code. ND = no data.

References For Section 1.11

1. *Emission Factor Documentation For AP-42 Section 1.11, Waste Oil Combustion (Draft)*, Technical Support Division, Office of Air Quality Planning and Standards, U. S. Environmental Protection Agency, Research Triangle Park, NC, April 1993.

2. *Environmental Characterization Of Disposal Of Waste Oils In Small Combustors*, EPA-600/2-84-150, U. S. Environmental Protection Agency, Cincinnati, OH, September 1984.

3. *Used Oil Burned As A Fuel*, EPA-SW-892, U. S. Environmental Protection Agency, Washington, DC, August 1980.

4. *The Fate Of Hazardous And Nonhazardous Wastes In Used Oil Disposal And Recycling*, DOE/BC/10375-6, U. S. Department of Energy, Bartlesville, OK, October 1983.

5. "Comparisons of Air Pollutant Emissions from Vaporizing and Air Atomizing Waste Oil Heaters", *Journal Of The Air Pollution Control Association*, 33(7), July 1983.

6. "Waste Oil Combustion: An Environmental Case Study", Presented at the 75th Annual Meeting of the Air Pollution Control Association, June 1982.

7. *Chemical Analysis Of Waste Crankcase Oil Combustion Samples*, EPA600/7-83-026, U. S. Environmental Protection Agency, Research Triangle Park, NC, April 1983.

Waste Oil Furnace Feedstock Sampling Project

Project Summary

A comparison of analytical results from 23 waste oil furnace feedstocks with the proposed standards for the Northwest Territories (NWT).

No excursions were recorded above 2 parts per million for cadmium or chromium.

Lead levels above 100 parts per million were reported for three oil feedstocks. Trav-Cor of Norman Wells 215, Buffalo Airways of Yellowknife 173 and Big River Air of Fort Smith 140, all units parts per million.

Organic halogens, as chlorine, above 1000 parts per million were reported from Kingland Ford, Yellowknife, 2600 parts per million and Yellowknife Chrysler 3470 parts per million.

One sample reported positive for Polychlorinated biphenyls greater than 2 parts per million, Big River Air, Fort Smith, 2.01 parts per million.

Ash content for waste oil is not specified in the proposed standards however, 14 samples exceeded the maximum ash content from the proposed standards for waste derived fuel 0.6 Wt % (by weight).

Four oil samples flashed at 23°C (headspace was noted in these samples), which is lower than the 37.7°C of the proposed standards. Of the remaining samples four had flash points greater than 23°C but less than 61°C and 15 had flash points greater than 61°C.

Town of Fort Simpson reported 8.9 parts per million of uranium. The detection limit of 5 parts per million would be considered a maximum acceptable level.

Three registered waste oil furnaces were no longer in operation, RTL Robinson Transport (RTL), Yellowknife; Anglican Church, Inuvik; and the Village of Fort Simpson. The oil feedstock at Fort Simpson was sampled although the furnace is not serviceable. RTL are using diesel fuel in all their furnaces and Capital Transit Mix (Yellowknife) Ltd. is accepting RTL waste oil feedstock. Five unregistered furnaces were identified, registered and sampled totalling 22 known serviceable waste oil furnaces operating in the NWT.

1 Introduction

The Environmental Protection Service (EPS) issued a request for proposals for analytical services and awarded a contract to PSC Analytical Services in January 2002. PSC is an Accredited Environmental Laboratory by the Canadian Association for Environmental Analytical Laboratories (CAEAL) Inc. The purpose is to obtain analysis of representative samples of waste oil feedstock from the 19 known operating waste oil furnaces in NWT communities. Chemical analysis will allow comparisons to be made to feedstock criteria in the proposed standards. The data received will be critical in determining the current state of used oil management in the communities and the overall need (or lack of need) for legislative controls.

1.1 Background

As of January 1, 2002 EPS recorded 19 registered waste oil furnaces operating in the NWT. The operators are Registered Generators and Receivers of Hazardous Waste (waste oil only). The registration process allowed furnace operators to receive waste oil from sources other than their equipment and maintain compliance with the *Transportation of Dangerous Goods Regulations*.

By the registration process EPS ensured that only Canadian Standards Association (CSA) or Underwriters Laboratories Association of Canada (ULC) approved waste oil furnaces or boilers are used. The furnaces were limited to commercial, industrial use and not permitted for residential property. All furnace installation shall be according to the *Fire Prevention Act*.

1.2 Scope of Project

Resources, Wildlife and Economic Development (RWED), Renewable Resource Officers were requested to collect the samples. Storage of waste oil varied considerably from operator to operator in each community. One sample of each feedstock was considered to provide a snapshot of the overall quality of the waste oil presently used.

2 Methodology

February 1, 2002 notification letters were sent to the registered waste oil furnace operators of the oil feedstock-sampling program. Furnace operators were advised of the reason for sampling, requested to provide assistance to RWED Officers and that the project was at no cost to the operator.

Renewable Resource Officers, stationed at most communities, were provided written sampling instruction along with sampling equipment and containers. Telephone contact by PSC Analytical Services to Officers regarding sampling instructions was also confirmed. Written sampling and handling instructions as provided by PSC are appended. Core Lab Petroleum Services were subcontracted by PSC for ash content analysis.

Transport of the oil samples to PSC was primarily by air. To facilitate acceptance at air cargo terminals letters of *Transportation of Dangerous Goods Regulation* exemption status (section 2.4.1) for government workers were obtained and provided to the Resource Officers. The letters of exemption status for First Air and Canadian North are appended. The exemption status removed the documentation and labelling protocol under the *Transportation of Dangerous Goods Regulations*.

The provision of sampling and transport protocols were included in the contract with PSC Analytical Services. This is to ensure timely receipt of samples for analysis by removing an administrative burden for the sampling personnel.

2.3 Sample Collection

Fort Smith, one of the few communities serviced by road during this project, reported breakage in transit of glass drum thieves and sample bottles. Replacement plastic drum thieves and PCB grade cleaned sample jars were sent by air transport to Fort Smith the same day as reported by the Fort Smith Officer. Hay River also reported breakage of glass drum thieves and Department staff delivered replacement plastic thieves. Discussion with PSC identified cost savings as the contributing factor in selection of glass over plastic drum sampling equipment.

Sample Shipment

Yellowknife, Hay River, Fort Providence, Fort Simpson samples were sent by ground transport, all other participating communities used air transport for sample delivery to PSC, Edmonton, Alberta.

3 Results

3.1 Quality Assurance/Quality Control (QA/QC) Sample Collection

QA/QC - not possible for one sample per collection site other than inference to the following:

- samples were collected following the verbal discussion PSC had with each Officer collecting the sample
- confidence that the written instructions were followed precisely by the Officer
- chain of custody reports were completed for all samples
- no samples lost or damaged in transit to PSC laboratory

QA/QC Oil Analysis

PSC Analytical is CAEAL Accredited Environmental Laboratory that undertakes an integrated QA/QC program that includes multiple certifications and accreditations. PSC methodologies are accepted by federal, provincial authorities and the United States Environmental Protection Agency. Analytical Methodology/Quality Assurance protocol was included with the Tender documentation supplied by PSC.

3.2 Data Evaluation

Methods used by PSC Analytical Services are based on those found in Standard Methods for the Examination of Water and Wastewater, 20th Edition.

Each sample data report was detailed and accompanied by the following:

> Certificate of Analysis; Analytical Report; Spike Summary; Analysis Dates; Batch Numbers; Blank Summary; PCB's analysis results; Toxicity as Chlorine analysis; Ash Content Analysis (Core Lab Petroleum Services); Chain of Custody Record and Analysis Request form; Duplicate Summary for selected samples.

Spike analysis was acceptable for all samples.

Blank summaries were provided for parameters that exceeded minimum detection limits.

Duplicate analysis completed on one sample set, Government Liquor Warehouse, Yellowknife.

3.3

PSC ANALYTICAL SERVICES

GOVERNMENT OF THE NWT WASTE OIL SAMPLING ANALYTICAL RESULTS, RFP 580569

Department of Resources, Wildlife and Economic Development

Attention: Don Helfrick

Date: March 28, 2002

Created By: Joanne Kuprys, PSC Analytical

TABLE 1: ANALYTICAL RESULTS

				ANALYSIS				
LOCATION	COMPANY	FIELD SAMPLE ID	MATRIX	Ash Content (Wt%)	PCB (ug/g) Max. 2 ppm	TOX (as chlorine) (ug/g) Max. 1000 ppm	Total ICP Metals (ug/g)	Flashpoint (°C) Max. 37.7°C
Yellowknife	Energy Wall & Bldg. Products	YK001-A1:A3	Oil	0.360	<1.0	<100	see attached	<61 (flash @ 23)
Yellowknife	Energy Wall & Bldg. Products	YK002-A1:A3	Oil	0.551	<1.0	128	see attached	>61
Yellowknife	Westown Tire Shop	YK004-A1:A3	Oil	0.629	<1.0	<100	see attached	>61
Norman Wells	Trav-Cor	Norman Wells	Oil	0.868	<1.0	447	see attached	>61
Yellowknife	Yellowknife Liquor Warehouse	Yellowknife Liquor Warehouse	Oil	0.721	<1.0	129	see attached	<61,>23
Yellowknife	Buffalo Airways	YK005-A1:A2	Oil	0.281	<1.0	<100	see attached	<61, >23
Yellowknife	YK Motors Ltd.	YK003-A1:A3	Oil	0.705	<1.0	122	see attached	>61
Yellowknife	Kingland Ford	YK006-A1:A3	Oil	0.750	<1.0	697	see attached	>61
Yellowknife	AutoTec	YK007-A1:A3	Oil	0.746	<1.0	693	see attached	<61, >23
Yellowknife	Yellowknife Chrysler	YK008-A1:A3	Oil	0.597	<1.0	3470	see attached	<61 (flash @ 23)
Hay River	Kingland Ford	Kingland Ford	Oil	0.699	<1.0	2600	see attached	>61
Hay River	King Manufacturing	King Manufacturing	Oil	0.745	<1.0	851	see attached	>61
Yellowknife	Capital Transit Mix	Capital Transit Mix	Oil	0.593	<1.0	388	see attached	<61, >23
Fort Simpson	FS#1-#4	FS#1-#4	Oil	0.777	<1.0	252	see attached	>61
Deline	Meckeon	Meckeon	Oil	3.610	<1.0	<100	see attached	>61
Tulita	Tulita #1-#3	Tulita #1-#3	Oil	0.785	<1.0	<100	see attached	>61
Tsiigehtchic	Tsiigehtchic Community	Tsiigehtchic #1-#3	Oil	0.876	<1.0	<100	see attached	>61
Inuvik	Matco	Matco #1-#3	Oil	0.562	<1.0	<100	see attached	>61
Fort Smith	Bumper to Bumper	SM-01	Oil	0.622	<1.0	<100	see attached	>61
Fort Smith	Armando Berton	SM-02	Oil	0.002	<1.0	<100	see attached	>61
Fort Smith	Target North	SM-03	Oil	0.670	<1.0	290	see attached	>61
Fort Smith	Big River Air	SM-04	Oil	0.597	2.01	141	see attached	<61 (flash @ 23)
Fort Providence	Snowshoe Inn	Snowshoe Inn	Oil	0.068	<1.0	<100	see attached	<61 (flash @ 23)

PSC ANALYTICAL SERVICES

Sample ID	Al	Sb	As	Ba	Be	Bi	B	Cd Max. 2 ppm	Ca	Cr Max. 10 ppm	Co	Cu	Fe	Pb Max. 100 ppm	Li	Mg	Mn	Mo	Ni	P
YK001	<10	<2.0	<0.7	2.0	<0.1	<10	27	0.8	335	0.8	0.3	11.2	74	96.7	0.3	90	17	6.1	<0.8	216
YK002	<10	<2.0	<0.7	<0.2	<0.1	<10	46	<0.2	264	0.4	<0.3	<0.5	17	<2.0	<0.1	36	<0.2	<0.4	<0.8	433
YK004	202	2.3	5.8	33.3	<0.1	<10	148	0.5	1660	4.1	<0.3	22.5	2130	99.1	3.8	613	47.0	64.8	2.50	1050
Norman Wells	<10	<2.0	<0.7	127	<0.1	<10	139	0.2	359	0.5	<0.3	7.3	198	215	0.7	56	8.1	48.2	<0.8	459
Yellowknife Liquor Warehouse	<10	<2.0	<0.7	1.3	<0.1	<10	45	<0.2	299	1.6	<0.3	2.0	84	8.6	<0.1	38	0.9	4.1	<0.8	540
YK005	<10	<2.0	<0.7	0.9	<0.1	<10	35	2.0	63	<0.2	<0.3	3.9	34	173	0.1	30	0.6	3.8	<0.8	136
YK003	<10	<2.0	<0.7	0.2	<0.1	<10	<10	<0.2	499	0.6	<0.3	19.6	59	5.2	0.2	26	15	33	<0.8	533
YK006	<10	<2.0	<0.7	0.8	<0.1	<10	38	<0.2	549	0.6	<0.3	7.9	132	8.9	<0.1	43	31	32.7	<0.8	535
YK007	<10	<2.0	<0.7	5.2	<0.1	<10	41	<0.2	450	0.7	<0.3	10.3	176	5.1	0.4	95	34	33.4	<0.8	451
YK008	<10	<2.0	<0.7	4.0	<0.1	<10	15	<0.2	400	1.0	<0.3	18.7	280	6.2	0.4	60	44	20.2	1.0	373
Kingland Ford	<10	<2.0	<0.7	0.3	<0.1	<10	41	<0.2	145	<0.2	<0.3	5.2	118	9.7	<0.1	15	7.6	31.9	<0.8	392
King Manufacturing	<10	<2.0	<0.7	0.8	<0.1	<10	40	<0.2	191	<0.2	<0.3	6.7	115	11.1	0.2	30	11	31.8	<0.8	366
Capital Transit Mix	<10	<2.0	<0.7	7.0	<0.1	<10	278	<0.2	3070	0.6	<0.3	7.7	164	2.2	3.5	580	4.7	30.4	<0.8	851
FS#1-#4	<10	<2.0	<0.7	1.3	<0.1	<10	58	<0.2	312	0.7	<0.3	11	139	19.4	<0.1	51	16	43.1	<0.8	450
Meckeon	<10	<2.0	<0.7	0.5	<0.1	<10	108	<0.2	450	0.3	<0.3	3.0	29	5.8	<0.1	38	3.5	67.3	<0.8	603
Tulita	<10	<2.0	<0.7	<0.2	<0.1	<10	96	<0.2	112	<0.2	<0.3	<0.5	<10	<2.0	<0.1	<10	<0.2	52.2	<0.8	475
Tsiigehtchic	<10	<2.0	<0.7	0.6	<0.1	<10	80	<0.2	107	<0.2	<0.3	1.5	10	<2.0	<0.1	<10	0.4	47.1	<0.8	596
Matco	11	<2.0	<0.7	2.6	<0.1	<10	233	<0.2	646	1.0	<0.3	6.9	151	22.1	0.6	172	67	14.4	<0.8	582
SM-01	<10	<2.0	<0.7	0.8	<0.1	<10	45	0.6	97	<0.2	<0.3	11.1	86	13.7	<0.1	13	5.3	18.6	0.8	385
SM-02	<10	<2.0	<0.7	0.6	<0.1	<10	<10	0.4	<20	0.7	<0.3	1.7	564	6.1	<0.1	<10	3.0	0.7	<0.8	9.3
SM-03	<10	<2.0	<0.7	0.6	<0.1	<10	31	0.3	128	<0.2	<0.3	6.1	72	41.4	<0.1	<10	5.6	35.2	<0.8	373
SM-04	<10	<2.0	<0.7	1.5	<0.1	<10	47	0.4	121	0.2	<0.3	5.9	51	140	0.1	<10	0.5	27.4	<0.8	263
Snowshoe Inn	<10	<2.0	<0.7	0.4	<0.1	<10	<10	0.9	21	0.2	<0.3	3.4	36	11.2	0.1	<10	0.5	3.5	<0.8	46.8

Aluminum (Al), Antimony (Sb), Arsenic (As), Barium (Ba), Beryllium (Be), Bismuth (Bi), Boron (B), Cadmium (Cd), Calcium (Ca), Chromium (Cr), Cobalt (Co), Copper (Cu), Iron (Fe), Lead (Pb), Lithium (Li), Magnesium (Mg), Manganese (Mn), Molybdenum (Mo), Nickel (Ni), Phosphorus (Total P).

PSC ANALYTICAL SERVICES

Sample ID	K	Se	Ag	Na	Sr	S	Te	Tl	Sn	Ti	U Max. <5.0	V	Zn	Zr
YK001	24	<1.0	<1.0	38	0.6	1080	<5.0	<2.0	<2.0	0.4	<5.0	<0.4	254	<0.5
YK002	<20	<1.0	<1.0	<10	0.2	1820	<5.0	<2.0	<2.0	<0.3	<5.0	0.7	289	<0.5
YK004	127	1.6	<1.0	159	3.2	6210	<5.0	<2.0	8.7	7.2	<5.0	<0.4	796	<0.5
Norman Wells	53	<1.0	<1.0	145	2.4	756	<5.0	2.1	<2.0	<0.3	<5.0	<0.4	130	<0.5
Yellowknife Liquor Warehouse	31	<1.0	<1.0	22	0.3	706	<5.0	<2.0	<2.0	0.8	<5.0	<0.4	163	<0.5
YK005	41	<1.0	<1.0	21	0.2	325	<5.0	<2.0	<2.0	<0.3	<5.0	<0.4	115	<0.5
YK003	<20	<1.0	<1.0	<10	0.7	1060	<5.0	<2.0	2.7	<0.3	<5.0	<0.4	283	<0.5
YK006	26	<1.0	<1.0	22	0.6	979	<5.0	<2.0	<2.0	0.4	<5.0	<0.4	250	<0.5
YK007	32	<1.0	<1.0	38	0.5	1070	<5.0	<2.0	2.9	0.4	<5.0	<0.4	237	<0.5
YK008	<20	1.2	<1.0	10	0.4	1060	<5.0	<2.0	<2.0	<0.3	<5.0	<0.4	218	<0.5
Kingland Ford	47	<1.0	<1.0	13	0.1	784	<5.0	<2.0	<2.0	<0.3	<5.0	<0.4	99.4	<0.5
King Manufacturing	38	<1.0	<1.0	17	0.2	761	<5.0	<2.0	2.0	0.3	<5.0	<0.4	128	<0.5
Capital Transit Mix	248	2.4	<1.0	524	2.2	1450	<5.0	4.6	<2.0	<0.3	<5.0	<0.4	146	<0.5
FS#1-#4	86	<1.0	<1.0	37	0.4	1010	<5.0	<2.0	<2.0	0.5	8.9	<0.4	164	<0.5
Meckeon	<20	<1.0	<1.0	<10	0.3	1050	<5.0	<2.0	<2.0	<0.3	<5.0	<0.4	332	<0.5
Tulita	<20	<1.0	<1.0	<10	<0.1	616	<5.0	<2.0	<2.0	<0.3	<5.0	<0.4	206	<0.5
Tsiigehtchic	<20	<1.0	<1.0	<10	<0.1	523	<5.0	2.2	<2.0	<0.3	<5.0	<0.4	184	<0.5
Matco	1030	<1.0	<1.0	1070	0.7	627	<5.0	2.8	2.9	<0.3	<5.0	<0.4	513	<0.5
SM-01	25	<1.0	<1.0	12	0.1	656	<5.0	<2.0	<2.0	<0.3	<5.0	<0.4	84.9	<0.5
SM-02	24	<1.0	<1.0	<10	<0.1	656	<5.0	<2.0	<2.0	0.5	<5.0	<0.4	6.6	<0.5
SM-03	<20	<1.0	<1.0	<10	0.1	651	<5.0	<2.0	<2.0	<0.3	<5.0	<0.4	75.2	<0.5
SM-04	<20	<1.0	<1.0	<10	0.1	468	<5.0	<2.0	<2.0	<0.3	<5.0	<0.4	101	<0.5
Snowshoe Inn	22	<1.0	<1.0	16	0.1	434	<5.0	<2.0	<2.0	<0.3	<5.0	<0.4	36.7	<0.5

Potassium (K), Selenium (Se), Silver (Ag), Sodium (Na), Strontium (Sr), Sulphur (S), Tellurium (Te), Thallium (Tl), Tin (Sn), Titanium(Ti), Uranium (U), Vanadium (V), Zinc (Zn), Zirconium (Zr)

4 Conclusions and Recommendations

4.1 Conclusions

Analytical results indicate negligible contamination of the waste oil feed stocks used in the NWT for heat (BTU) recovery. The cost of purchasing and installing a waste oil furnace in the NWT is between $8K and $12K. In general, operators are not supplying substandard or contaminated fuels to their furnaces in order to maintain their investment. Furnace operators were cooperative with Officers collecting samples and freely provided information and assistance with sample collection.

The Fort Simpson waste oil furnace is not serviceable due to the use of Jet B fuel, which is not a fuel approved by the furnace manufacturer. (personal conversation Fort Simpson SAO).

The use of waste oil for BTU recovery replaces the equivalent of heating oil trucked into the NWT from Alberta. The replacement of fuel also eliminates air emissions subsequent to transport of fuel to the NWT. RWED supports the four R's and no data exist indicating environmental concern with BTU recovery in approved waste oil furnaces. RWED Officers indicate a high level of concern for safety, furnace performance and longevity by the owners (personal communications with Officers).

Until 1990 waste oil was the largest volume hazardous waste generated in the NWT (Renewable Resources 1990). This has been met by advancement of furnace technology with acceptance and use by industry. What was once a liability is now considered a fuel asset.

4.2 Recommendations

Consideration should continue to be focused on waste oil quality. Only minor excursions of a few parameters in the proposed standards were recorded, concluding that any concerns are readily mitigated.

With only a few exceptions oil quality used to feed furnaces is acceptable. As the data show however, re-sampling at a later date, possibly after one year, would confirm the continued quality of waste oil feedstock. A sampling project with QA/QC collection controls would ensure sound data for monitoring of the minor excursions noted.

Complete discussions with the service departments of Kingland Ford and Yellowknife Chrysler, the two automobile dealerships reporting elevated chlorine levels. Chlorinated compounds are not readily available to the public and only specialized industry has access through chemical supply houses. Re-sampling over an extended time period will determine if the levels were transient.

Re-sampling at Big River Air is required in determining any potential PCB contamination or potential source.

Re-sampling at Fort Simpson is required to determine if the uranium contamination 8.9 ppm is an analytical error or sampling related.

Further evaluation by sampling to determine if leaded aviation fuel is the source of the increased lead in samples. Two of the three high lead levels are from the aviation industry. Aviation fuel is exempt from lead removal legislation. Other possible lead sources would include dated waste oil from the days of leaded gasoline (i.e. pre 1986 lead phase out in gasoline).

Reference Materials

Inventory of Waste Oil Volumes Generated In The Northwest Territories, Department of Renewable Resources, Government of the Northwest Territories, prepared by Stanley Associates Engineering Ltd., 1990.

NWT Hazardous Waste Survey, Department of Renewable Resources, Government of the Northwest Territories, prepared by Vista Engineering, 1994.

Waste Oil Furnace Emission Testing, Department of Renewable Resources, Government of the Northwest Territories, prepared by British Columbia Research Corporation, 1990.

Used Oil Guidelines Technical Working Group; Environment Canada; Indian and Northern Affairs Canada; Fisheries and Oceans Canada; Department of Renewable Resources, Government of the Northwest Territories 1991.

Comparison of Air Pollutant Emissions from Vaporizing and Air Atomizing Waste Oil Heaters, Robert E. Hall, W. Marcus Cook and Rachael L. Barbour, 1983.

Appendices

- Sampling instructions
- ICAO exemption confirmation letters
- Proposed Standards for the Level of Impurities in Waste Oil
- Letter to waste oil furnace operators
- Waste oil furnaces registered in the NWT

Waste Oil Furnace Feedstock Sampling Project

Table of Contents

Landers
Auto Recycling

Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: Title V Air General Permit

To Whom It May Concern:

This is to inform you that we have shut down our smelter and will no longer need a Title V Air permit. Our Airs Identification number is 951263 registered under the name of Cheap Dave's Auto Salvage.

Thank you,

Edward H. Landers
President

3024 Apopka Blvd. ▣ Apopka, FL 32703 ▣ Phone: 407-293-1313 ▣ Fax: 407-294-7397

Department of Environmental Protection

Jeb Bush
Governor

Division of Air Resource Management
2600 Blair Stone Road, MS 5510
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

TO: Holder of Title V Air General Permit

Our records indicate that, as the owner or operator of an eligible facility, you have claimed entitlement to the use of a Title V Air General Permit under Rule 62-213.300, Florida Administrative Code (F.A.C.).

For your facility to maintain its eligibility for the Title V Air General Permit, Rule 62-213,300(3)(b), F.A.C. states "...the owner or operator of the facility must, upon written notice from the Department, submit payment of an annual operation fee in the amount of $50.00. This fee is due and payable between January 15 and March 1 of each year for which the facility is in operation and subject to the requirements of this rule and the general permit." This invoice constitutes the Department's written notice, as required under the general permit rule.

Please make your check or money order payable to the Department of Environmental Protection and staple it to the detachable portion of this invoice below. To maintain your facility's eligibility for the general permit, the fee must be received by the Department not later than March 1. Your check and the detachable portion of this invoice below should be mailed to:

Title V Air General Permits
Receipts
Post Office Box 3070
Tallahassee, FL 32315-3070

(CUT HERE)

THIS PORTION MUST BE ATTACHED TO REMITTANCE FOR PROPER HANDLING

Please include your AIRS ID# on your check or money order. This number is located on the mailing label.

TOTAL AMOUNT DUE: $50.00

Do NOT Remove Label CLOSED

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Grant, Patricia

From: Thomas, Bruce X.

Sent: Thursday, March 02, 2006 1:45 PM

To: 'John.Parker@ocfl.net'; 'Ilka.Bundy@ocfl.net'

Cc: Grant, Patricia; Bowman, Sandy

John and Ilka,

Cheap Dave's Auto Salvage (0951263) has notified us they have ceased smelting operations. The facility status has been changed to inactive in the database. Bruce

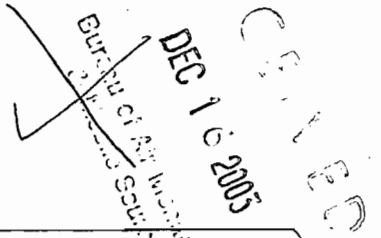
Bruce Thomas, P.E.
Division of Air Resource Management
(850)-921-7744 or Bruce.X.Thomas@dep.state.fl.us

THIS PORTION MUST BE ATTACHED TO REMITTANCE FOR PROPER HANDLING

434176 DEC12 2003

Please include your AIRS ID# on your check or money order. This number can be found below on your mailing label.

TOTAL AMOUNT DUE: $50.00



Do NOT Remove Label

951263
EDWARD LANDER
CHEAP DAVE'S AUTO SALVAGE
3024 APOPKA BLVD
APOPKA FL 32703

FOR GOVERNMENT USE ONLY
Org.: 37550101000 EO: A1
Fund: 20-2-035001
Obj.: 002273

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CHEAP DAVE'S AUTO SALVAGE
3024 Apopka Blvd
APOPKA, FL 32703

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DEC 1
Bureau of Air Monitoring
& Mobile Sources

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