State of Idaho
Department of Environmental Quality
Air Quality Division

AIR QUALITY PERMIT
STATEMENT OF BASIS

Permit to Construct

Operating Permit No. P-2008.0154

Final

Commercial Fuel Recycling, LLC

Nampa, Idaho

Facility ID No. 027-00098

August 7, 2009

Mary Capiral MC

Permit Writer

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

Table of Contents

Acronyms, Units, and Chemical Nomenclature

AAC	acceptable ambient concentrations for non-carcinogens
AACC	acceptable ambient concentrations for carcinogens
acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
ASTM	American Society for Testing and Materials
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EP	emissions point
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
°F	degrees Fahrenheit
ft	feet
gal/yr	gallons per consecutive 12-calendar month period
gr/dscf	grain (1 lb = 7,000 grains) per dry standard cubic feet
HAPs	hazardous air pollutants
hrs/yr	hours per year
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
in.	inches
K	Kelvin
kPa	kiloPascals
lb/hr	pound per hour
MACT	Maximum Achievable Control Technology
$\mu g/m^3$	micrograms per cubic meter
MMBtu/hr	million British thermal units per hour
MMgal/yr	million gallons per year
MMscf	million standard cubic feet
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
PC	permit condition
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
PTC	permit to construct
RFOP	recycled fuel oil product
Rules	Rules for the Control of Air Pollution in Idaho
scf/hr	standard cubic feet per hour
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_x	sulfur oxides
T/yr	tons per consecutive 12-calendar month period
VOC	volatile organic compound

1. FACILITY INFORMATION

1.1 Facility Description

Commercial Fuel Reprocessing, LLC (Commercial Fuel) constructed and began operations at this facility in 2003. The facility receives used motor oil by truck from various sources, which is stored and treated in one of four heated oil processing tanks (Tanks 5, 6, 7 and 8) to produce fuel oil.

A Parker Model T-6800 natural gas-fired hot water boiler is used to heat a glycol-water mixture to approximately 320°F. The glycol-water mixture is then circulated through heating coils in each oil processing tank to heat the used oil to approximately 220°F to remove water, while simultaneously circulating the oil through a series of filters to remove particulate contaminants. Processing time is typically 16 to 24 hours per batch.

Recycled fuel oil product is stored in one of three unheated storage tanks (Tanks 1, 2, and 3).

2. APPLICATION SCOPE AND APPLICATION CHRONOLOGY

2.1 Application Scope

This project is for the initial Permit to Construct for an existing used motor oil recycling facility that includes a boiler, processing tanks, and storage tanks as described in Table 3.1.

2.2 Application Chronology

July 11, 2007	Pre-application meeting with Torf Environmental. Receipt of modeling protocol on behalf of Commercial Fuel, proposing to use SCREEN3.
August 6, 2007	DEQ issued a modeling protocol approval with recommendations, including that modeling should be conducted using AERMOD.
November 6, 2007	Receipt of revised modeling protocol.
November 13, 2007	DEQ approved the modeling protocol.
January 24, 2008	Receipt of PTC application and $1,000 PTC application fee.
January 28, 2008	Application determined to be incomplete.
January 29, 2008	Draft PTC and statement of basis issued for peer and Boise Regional Office review.
February 5, 2008 to February 19, 2008	Opportunity for public comment period held. No requests for a public comment period were received.
March 11, 2008	The facility provided supplemental information.
March 13, 2008	The facility provided supplemental information and revised modeling files.
March 18, 2008	Application determined to be incomplete.
March 21, 2008	The facility provided supplemental information and revised modeling files. Application determined to be complete. Draft permit and statement of basis issued for facility review.

April 21, 2008	The facility provided comments on the permit draft.
June 6, 2008	PTC processing fee of $2,500 received.
September 11, 2008	Project P-2008.0010 was terminated based on a June 19, 2008 letter from the applicant's attorney (Kevin Beaton, Stoel-Rives) to Darrell Early (Deputy AG), which was received by the air program on September 9, 2008. The letter stated that CFR had ceased operations and was liquidating its assets.
September 23, 2008	Received request from CFR's Randy Blackburn to issue a final permit for the facility, based on presumption that having a permit might make this operation more attractive to potential buyers. Project was "restarted" and assigned number P-2008.0154. Application fee and processing fee paid for P-2008.0010 were transferred to the "restarted" project.
August 7, 2009	DEQ issued PTC No. P-2008.0154.

3. TECHNICAL ANALYSIS

3.1 Emission Unit and Control Device

Table 3.1 EMISSION UNIT AND CONTROL DEVICE INFORMATION

Emission Unit /ID No.	Description	Control Device/Emissions Point
Process Boiler H-1	Manufacturer: Parker Model/ Serial No.: T-6800, #40847 Manufacture Date: 2004 Rated Heat Input Capacity: 6.8 MMBtu/hr Fuel(s): Natural gas Full Load Fuel Consumption: 6,667 scf/hr Actual Fuel Consumption: Not given Fuel Heat Content (LHV): 1,020 Btu/scf	None Boiler Stack A (EP1) Stack Height: 15.5 ft Stack Diameter: 2.0 ft Orientation: Vertical, uncapped Exhaust Temperature: 450°F (505 K) Exhaust Flow: 1,500 acfm Boiler Stack B (EP2) Stack Height: 17.5 ft Stack Diameter: 2.0 ft Orientation: Vertical, uncapped Exhaust Temperature: 450°F (505 K) Exhaust Flow: 1,500 acfm
Recycled Fuel Oil Product (RFOP) Tank 1	Construction Date: unknown (pre-2003) Type: Vertical, fixed (flat) roof, cylindrical, unheated, uninsulated Operating Pressure: Atmospheric, open roof vents Shell and Roof Color/Shade: Silver/ Silver Shell Height: 24.0 ft Shell Diameter: 22.9 ft Max. Liquid Height: 19.50 ft Avg. Liquid Height: 12.00 ft Max. Capacity: 74,000 gallons Working Volume: 60,000 gallons Turnovers: 11.86 per year Net Throughput: 711,600 gal/yr Requested Throughput: 711,864 gal/yr	None Tank Roof Pressure Control Vent (EP3): Release Height: 25.2 ft Diameter: 0.67 ft Exhaust Temperature: 53.01 °F (284.8 K) Exhaust Velocity: 0.001 m/s Tank Roof Vent/Nozzle (EP4): Release Height: 24.7 ft Diameter: 1.21 ft Orientation: Vertical, uncapped Exhaust Temperature: 53.01 °F (284.8 K) Exhaust Velocity: 0.001 m/s

Emission Unit /ID No.	Description	Control Device/Emissions Point
RFOP Tank 2	Construction Date: unknown (pre-2003) Type: Vertical, fixed (flat) roof, cylindrical, unheated, uninsulated Operating Pressure: Atmospheric, open roof vents Shell and Roof Color/Shade: Silver/ Silver Shell Height: 28.30 ft Shell Diameter: 30 ft Max. Liquid Height: 25.50 ft Avg. Liquid Height: 14.00 ft Max. Capacity: 150,000 gallons Working Volume: 135,000 gallons Turnovers: 11.86 per year Net Throughput: 1,601,100 gal/yr Requested Throughput: 1,601,695 gal/yr	None Tank Roof Pressure Control Vent (EP5): Release Height: 29.5 ft Diameter: 0.67 ft Exhaust Temperature: 53.01 °F (284.8 K) Exhaust Velocity: 0.001 m/s Tank Roof Vent/Nozzle (EP6): Release Height: 28.6 ft Diameter: 1.33 ft Orientation: Vertical, uncapped Exhaust Temperature: 53.01 °F (284.8 K) Exhaust Velocity: 0.001 m/s
RFOP Tank 3	Construction Date: unknown (pre-2003) Type: Vertical, fixed roof (3 ft height, 0.1 ft/ft slope, center-pitch) cylindrical, unheated, uninsulated Operating Pressure: Atmospheric, open roof vents Shell and Roof Color/Shade: Silver/ Silver Shell Height: Edge: 20.10 ft Center: 23.4 ft Shell Diameter: 30.00 ft Max. Liquid Height: 18.00 ft Avg. Liquid Height: 10.00 ft Max. Capacity: 110,000 gallons Working Volume: 100,000 gallons Turnovers: 11.86 per year Net Throughput: 1,186,000 gal/yr Requested Throughput: 1,186,441 gal/yr	None Tank Roof Vent/Nozzle (EP7): Release Height: 23.9 ft Diameter: 0.25 ft (3 in.) Orientation: Downward Exhaust Temperature: 53.01°F (284.8 K) Exhaust Velocity: 0.001 m/s Tank Roof Vent/Nozzle (EP8): Release Height: 20.43 ft Diameter: 1.33 ft Orientation: Vertical, uncapped Exhaust Temperature: 53.01°F (284.8 K) Exhaust Velocity: 0.001 m/s
Daily Batch Processing Tank 5	Construction Date: 2003 Type: Horizontal, cylindrical, heated, insulated Operating Pressure: Atmospheric, open roof vents Shell Color/Shade: Orange Insulation: Red/Primer Shell Height: 13.8 ft Shell Length: 32.33 ft Shell Diameter: 8.25 ft Max. Capacity: 12,929 gallons Working Volume: 10,500 gallons Turnovers: 365 per year Net Throughput: 3,832,500 gal/yr Requested Throughput: 1,400,000 gal/yr	None Tank 5 Roof Vent/Nozzle (EP9): Release Height: 13.9 ft Diameter: 2.0 ft Orientation: Vertical, w/raincap Exhaust Temperature: 140°F (333.1 K) Exhaust Velocity: 0.001 m/s Tank 5 Roof Vent/Nozzle (EP10): Release Height: 15.75 ft Diameter: 0.25 ft Orientation: Vertical, uncapped Exhaust Temperature: 140°F (333.1 K) Exhaust Velocity: 0.001 m/s
Daily Batch Processing Tank 6	Construction Date: 2003 Type: Horizontal, cylindrical, heated, insulated Operating Pressure: Atmospheric, open roof vents Shell Color/Shade: Orange Insulation: Red/Primer Shell Height: 13.8 ft Shell Length: 32.33 ft Shell Diameter: 8.25 ft Max. Capacity: 12,929 gallons Working Volume: 10,500 gallons Turnovers: 365 per year Net Throughput: 3,832,500 gal/yr Requested Throughput: 1,400,000 gal/yr	None Tank 6 Roof Vent/Nozzle (EP11): Release Height: 13.9 ft Diameter: 2.0 ft Orientation: Vertical, w/raincap Exhaust Temperature: 140°F (333.1 K) Exhaust Velocity: 0.001 m/s Tank 6 Roof Vent/Nozzle (EP12): Release Height: 15.75 ft Diameter: 0.25 ft Orientation: Vertical, uncapped Exhaust Temperature: 140°F (333.1 K) Exhaust Velocity: 0.001 m/s

Emission Unit /ID No.	Description	Control Device/Emissions Point
Daily Batch Processing Tank 7	Construction Date: unknown (pre-2003) Type: Horizontal, cylindrical, heated, uninsulated Operating Pressure: Atmospheric, open roof vents Shell Color/Shade: Silver/Silver Shell Height: 14.4 ft Shell Length: 25.00 ft Shell Diameter: 9.17 ft Max. Capacity: 12,341 gallons Working Volume: 10,000 gallons Turnovers: 365 per year Net Throughput: 3,650,000 gal/yr Requested Throughput: 350,000 gal/yr	None Tank 7 Roof Vent/Nozzle (EP13): Release Height: 14.4 ft Diameter: 1.58 ft Orientation: Vertical, uncapped Exhaust Temperature: 140°F Exhaust Velocity: 0.001 m/s Tank 7 Roof Vent/Nozzle (EP14): Release Height: 15.07 ft Diameter: 1.67 ft Orientation: Vertical, uncapped Exhaust Temperature: 140°F Exhaust Velocity: 0.001 m/s Tank 7 Roof Vent/Nozzle (EP15): Release Height: 14.4 ft Diameter: 1.58 ft Orientation: Vertical, uncapped Exhaust Temperature: 140°F Exhaust Velocity: 0.001 m/s
Daily Batch Processing Tank 8	Construction Date: unknown (pre-2003) Type: Horizontal, cylindrical, heated, uninsulated Operating Pressure: Atmospheric, open roof vents Shell Color/Shade: Rusted: Red/Primer Shell Height: 13.0 ft Shell Length: 29.50 ft Shell Diameter: 7.80 ft Max. Capacity: 10,544 gallons Working Volume: 8,500 gallons Turnovers: 365 per year Net Throughput: 3,102,500 gal/yr Requested Throughput: 350,000 gal/yr	None Tank 8 Roof Vent/Nozzle (EP16): Release Height: 13.17 ft Diameter: 0.17 ft Orientation: Vertical, uncapped Exhaust Temperature: 140°F Exhaust Velocity: 0.001 m/s Tank 8 Roof Vent/Nozzle (EP17): Release Height: 13.0 ft Diameter: 1.58 ft Orientation: Vertical, uncapped Exhaust Temperature: 140°F Exhaust Velocity: 0.001 m/s Tank 8 Roof Vent/Nozzle (EP18): Release Height: 13.5 ft Diameter: 1.67 ft Orientation: Vertical, uncapped Exhaust Temperature: 140°F Exhaust Velocity: 0.001 m/s Tank 8 Roof Vent/Nozzle (EP19): Release Height: 13.0 ft Diameter: 1.58 ft Orientation: Vertical, uncapped Exhaust Temperature: 140°F Exhaust Velocity: 0.001 m/s
Tanker Loadout (Fugitives)	Max. capacity: 7,000 to 9,500 gallons No. Compartment Hatches: 5 Loadout Duration: 2 hours per 9,500 gallons	Compartment Hatch Openings A-F Release Height: 9.0 ft Diameter: 1.67 ft Orientation: N/A Exhaust Temperature: 53°F Exhaust Velocity: 0.001 m/s

3.2 Emissions Inventory

The application included an estimate of the uncontrolled emissions from point sources at the facility, including emissions from the Parker hot water boiler if operated at maximum capacity for 8,760 hrs/yr and assuming 365 turnovers per year of the full working volume for Process Tanks 5, 6, 7, and 8 for an estimated maximum throughput of 14.4 MMgal/yr. Uncontrolled VOC emissions from these tanks were calculated by summing the "unrestricted" pound per year values shown in Table 3 of the February 26, 2008 modeling report included with Torf's resubmittal received on March 11, 2008. DEQ estimated the uncontrolled emissions estimate for VOCs from RFOP Tanks 1, 2, and 3 using the controlled emissions estimates provided in Table 2 of the February 26, 2008 modeling report and multiplying by the ratio of the uncontrolled throughput of 14.4 MMgal/yr and the proposed controlled throughput of 3.5 MMgal/yr.

Uncontrolled emissions estimates of criteria pollutants are summarized in Table 3.2. The applicant's emission estimates for the boiler emissions were based on typical emissions for atmospheric natural gas-fired Parker Boilers, which were provided to Torf in an email from Greg Danenhauer on July 9, 2007 (Appendix C to the February 26, 2008 modeling report). Lead emissions were estimated by DEQ using AP-42, Table 1.4-1 (7/98).

Table 3.2 UNCONTROLLED EMISSIONS ESTIMATES OF CRITERIA POLLUTANTS POTENTIAL TO EMIT (PTE)

Emissions Unit	PM_{10}		SO_2		NOx		CO		VOC		LEAD
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/quarter
Point Sources Affected by the Permitting Action											
Parker T-6800 Hot Water Boiler	0.068	0.30	0.0	0.0	0.82	3.57	0.94	4.11	0.25	1.10	7.29E-03
RFOP Tanks 1, 2, and 3, combined	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5E-03	0.020	0.0
Processing Tanks 5, 6, 7, and 8, combined	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.014	0.062	0.0
Total, Point Sources	**0.068**	**0.30**	**0.0**	**0.0**	**0.82**	**3.57**	**0.94**	**4.11**	**0.27**	**1.18**	**7.29E-03**

Permitted emissions were estimated by the applicant based on operating the Parker hot water boiler at maximum capacity for 8,760 hrs/yr; collecting and processing a maximum of 3.5 MMgal/yr of used motor oil in Process Tanks 5, 6, 7, and 8, combined; and storing and shipping offsite 3.5 MMgal of RFOP in storage Tanks 1, 2, and 3, combined. Emissions were estimated by the applicant using EPA's Storage Tank Emissions Calculation Software (TANKS), version 4.0.9d, using the assumptions summarized in Table 3.3; analytical results for benzene, ethylbenzene, naphthalene, tetrachloroethylene, toluene, 1,2,4-Trimethylbenzene, and xylenes; and TANKS default information for ASTM No. 6 Residual Fuel Oil. Controlled emissions estimated of criteria pollutants are summarized in Table 3.4.

Table 3.3 PTE ASSUMPTIONS

	Tank 1	Tank 2	Tank 3	Tank 5	Tank 6	Tank7	Tank 8
Max. Capacity (gal)	74,000	150,000	110,000	12,929	12,929	12,341	10,544
Working Volume (gal)	60,000	135,000	100,000	10,500	10,500	10,000	8,500
Turnovers per Year (Batches per year)	11.86	11.9	11.9	133.3	133.3	35.0	41.2
Total (gallons)	711,864	1,601,695	1,186,441	1,400,000	1,400,000	350,000	350,000
Total (TANKS Input)	711,600	1,601,100	1,186,000	3,832,500[a]	3,832,500[a]	3,650,000[a]	3,102,500[a]

[a]The applicant scaled the estimated emissions from Tanks 5 through 8 based on the TANKS results for the uncontrolled throughput.

Table 3.4 CONTROLLED EMISSIONS ESTIMATES OF CRITERIA POLLUTANTS PTE

Emissions Unit	PM_{10}		SO_2		NOx		CO		VOC		LEAD
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/quarter
Point Sources Affected by the Permitting Action											
Parker T-6800 Hot Water Boiler	0.068	0.30	0.0	0.0	0.82	3.57	0.94	4.11	0.25	1.10	7.29E-03
RFOP Tanks 1, 2, and 3, combined	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1E-03	5.0E-03	0.0
Processing Tanks 5, 6, 7, and 8, combined	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5E-03	1.5E-03	0.0
Total, Point Sources	**0.068**	**0.30**	**0.0**	**0.0**	**0.82**	**3.57**	**0.94**	**4.11**	**0.25**	**1.11**	**7.29E-03**
Process Fugitive/Volume Sources affected by the Permitting Action											
Truck Loading	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4E-04	0.002[a]	0.0
Total, Process Fugitives	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**4.4E-04**	**0.002[a]**	0.0

[a] Calculated based on 3.14 lb/yr (application Table 2-b) x 1 ton/2000 lb = 0.00157 T/yr

Controlled emissions of hazardous air pollutants (HAPs) and toxic air pollutants (TAPs) were estimated by the applicant based on the same operating assumptions as for criteria pollutants. For the boiler HAPs/TAPs, the applicant provided a summary of the primary HAP/TAP emissions. DEQ conducted a quality assurance check for the boiler emissions using a worksheet that includes all of the AP-42 emission factors. The only change noted is that there is a slight increase in estimated annual emissions when all of the HAPs are included, from 0.055 tons per year as described in the application to the 0.0562 tons per year estimated by DEQ. HAP/TAP emissions that exceeded 50% of the applicable screening level emission level (EL) are summarized in Table 3.5.

The applicant's detailed emissions inventory and DEQ quality assurance worksheets are provided in Appendix B.

Table 3.5 TAP AND HAP EMISSIONS SUMMARY

HAP/TAP	Parker T-6800 Hot Water Boiler (lb/hr)	RFOP Tanks 1, 2, and 3, combined (lb/hr)	Processing Tanks 5, 6, 7, and 8, Combined (lb/hr)	Truck Loading (lb/hr)	Total (lb/hr)	EL (lb/hr)	Percent of EL
Arsenic	1.33E-06	0.0	0.0	0.0	1.33E-06	1.5E-06	88.9%
Benzene	1.40E-05	8.9E-05	3.73E-04	2.9E-05	5.05E-04	8.0E-04	63.1%
Cadmium	7.33E-06	0.0	0.0	0.0	7.33E-06	3.7E-06	198.2%
Formaldehyde	5.00E-04	0.0	0.0	0.0	5.00E-04	5.1E-04	98.0%
Nickel	1.40E-05	0.0	0.0	0.0	1.40E-05	2.7E-05	51.9%
Total HAPs (see Appendix B)	**0.0562 T/yr**	**0.0042 T/yr**	**0.014 T/yr**	**0.014 T/yr**	**0.088 T/yr**		

[a] Annual average. Each of these is a carcinogenic TAP.

3.3 Ambient Air Quality Impact Analysis

The facility conducted a full ambient impact analysis for emissions of NO_x, benzene, and cadmium. The facility has demonstrated compliance to DEQ's satisfaction that emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard. The facility has also demonstrated compliance to DEQ's satisfaction that an emissions increase due to this permitting action will not exceed any AAC or AACC for TAPs. The modeling analysis results for criteria pollutants and TAPs are presented in Tables 3.6 and 3.7, respectively. DEQ's detailed modeling analysis report can be found in Appendix C.

Table 3.6 FULL IMPACT ANALYSIS RESULTS FOR CRITERIA POLLUTANT(S)

Pollutant	Averaging Period	Facility Ambient Impact (µg/m3)	Background Concentration (µg/m^3)	Total Ambient Concentration (µg/m^3)	NAAQS (µg/m^3)	Percent of NAAQS
PM_{10}	24-hour	N/A	N/A	N/A	150	NA
	Annual	N/A	N/A	N/A	50	NA
NO_2	Annual	21.3	32	53.3	100	53.3%
SO_2	3-hr	N/A	N/A	N/A	1,300	NA
	24-hr	N/A	N/A	N/A	365	NA
	Annual	N/A	N/A	N/A	80	NA
CO	1-hour	N/A	N/A	N/A	40,000	NA
	8-hour	N/A	N/A	N/A	10,000	NA
Pb	Quarterly	N/A	N/A	N/A	1.5	NA

NA: The emissions rate is below the modeling threshold; modeling is not required in accordance with State of Idaho Air Quality Modeling Guidance DEQ Publication, December 2002, or alternative threshold approved by DEQ Modeling Coordinator.

Table 3.7 FULL IMPACT ANALYSIS RESULTS FOR TAP(S)

Pollutant	Averaging Period	Concentration (µg/m^3)	Regulatory AACC [a] (µg/m^3)	Percent of Limit
Benzene	Annual	0.058 (west ambient boundary, west of office)	0.12	48.3 %
Cadmium	Annual	1.9E-04 (south fence line)	5.6E-04	33.9%

[a] Acceptable Ambient Concentration for Carcinogens (AACC, for carcinogenic annual averaging periods).

4. REGULATORY REVIEW

4.1 Attainment Designation (40 CFR 81.313)

The facility is located in Canyon County which is designated as attainment or unclassifiable for PM_{10}, $PM_{2.5}$, CO, NO_2, SO_X, and Ozone. Reference 40 CFR 81.313.

4.2 Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201 ..... Permit to Construct Required

The facility's proposed project does not meet the permit to construct exemption criteria contained in Sections 220 through 223 of the Rules. Therefore, a PTC is required.

4.3 Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401 ..... Required Tier II Operating Permits

The facility is not subject to IDAPA 58.01.01.300 through 399 and is not requesting an optional Tier II operating permit. Therefore, the requirements of IDAPA 58.01.01.401 do not apply.

4.4 Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

IDAPA 58.01.01.301 ..... Tier I Operating Permit

The facility is not a Tier I source in accordance with IDAPA 58.01.01.006.113. Therefore, the requirements of IDAPA 58.01.01.301 do not apply.

4.5 PSD Classification (40 CFR 52.21)

40 CFR 52.21..... ..... Prevention of Significant Deterioration of Air Quality

The facility is not subject to Prevention of Significant Deterioration (PSD) requirements because the facility is not a designated facility as defined in IDAPA 58.01.01.006, and as initially constructed does not emit or have the potential to emit a regulated pollutant(s) in amounts equal to or greater than 250 tons per year.

4.6 NSPS Applicability (40 CFR 60)

40 CFR 60 Subpart Dc ..... Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

Subpart Dc applies to industrial-commercial-institutional steam generating units (i.e., boilers) with a design heat capacity greater than or equal to 2.9 megawatts (MW)(10 MMBtu/hr) but less than or equal to 29 MW. The Parker T-6800 hot water boiler has a nominal design heat input capacity of 6.8 MMBtu/hr (1.99 MW). Therefore, this NSPS does not apply.

40 CFR 60 Subpart Kb ..... Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984.

In accordance with § 60.110b(a), the requirements of this subpart applies to each storage vessel with a capacity greater than or equal to 75 m^3 (19,800 gallons) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984. All tanks at this facility were constructed or reconstructed after 1984. Tanks 5 and 6 (12,900 gallons each), Tank 7 (12,300 gallons), and Tank 8 (10,500 gallons) each have a capacity less than 75 m^3, and are therefore exempt from the requirements of NSPS Subpart Kb.

In accordance with §60.110b(b), this subpart does not apply to storage vessels with a capacity greater than or equal to 151 m^3 (39,900 gallons) storing a liquid with a maximum true vapor pressure less than 3.5 kPa. Tank 1 (74,000 gallons), Tank 2 (150,000 gallons), and Tank 3 (110,000 gallons) each have a capacity greater than 151 m^3. The three tanks (Tanks 1, 2, and 3) each store a liquid with a maximum vapor pressure less than 3.5 kPa since used motor oil has a maximum true vapor pressure less than 0.01 kPa[1]. Thus, Tanks 1, 2, and 3 are exempt from the requirements of NSPS Subpart Kb.

4.7 NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements pursuant to 40 CFR 61.

4.8 MACT Applicability (40 CFR 63)

The facility does not emit 10 tons per year of any HAP or 25 tons per year of all HAPs, and is not in any of the area source categories subject to regulation under 40 CFR 63.

4.9 CAM Applicability (40 CFR 64)

Commercial Fuel's Nampa facility does not meet the first criterion to be subject to Compliance Assurance Monitoring; this is not a major (Title V) facility.

4.10 Permit Conditions Review

This is the initial permit for this existing facility, so all of the permit conditions (PC) discussed below are "new."

Permit Condition 2.3 (Grain Loading) requires that the permittee shall not discharge to the atmosphere from the Process Boiler stack PM in excess of 0.015 gr/dscf of effluent gas corrected to 3% oxygen by volume for gas, as required by IDAPA 58.01.01.676.

Permit Condition 2.4 (Opacity Limit) requires that emissions from the Process Boiler stack, daily batch processing tanks vent stacks, and pressure control vent stacks, or any other stack, vent, or functionally equivalent opening associated with the used motor oil recycling facility, shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625.

Permit Conditions 2.5 and 2.9 (Storage and Reprocessing Limited to Uncontaminated Used Motor Oil, Used Oil Acceptance Monitoring) limit the type of used oil accepted at Commercial Fuel's Nampa facility to used motor oil. Demonstration of compliance with the ozone NAAQS (VOC emissions), state-only TAPs rules, and applicable NSPS Subpart Kb requirements was based on handling only "typical" used motor oil as a feedstock. The TANKS analysis conducted by the applicant used analytical results for benzene, ethylbenzene, naphthalene, tetrachloroethylene, toluene, 1,2,4-Trimethylbenzene, and xylenes; and TANKS default information for ASTM No. 6 Residual Fuel Oil. A review of the TANKS reports included with the application confirmed that the emissions were estimated based on handling a liquid with a very low vapor pressure (0.0006 psi, or ~0.004 kPa). The vapor pressure for ASTM No. 2 diesel is an order of magnitude higher, at ~0.05 kPa, which would result in considerably greater working loss and breathing loss emissions compared to used motor oil. The Used Oil

[1] MSDS for AMTECOL Automotive Lubricants, synthetic motor oils, all grades (Vapor Pressure < 0.1 mm Hg); and MSDS for CITGO Supergard Motoroil 5W-30 (Vapor Pressure < 0.01 kPa, < 0.1 mm Hg), accessed 1/28/2008 at http://www.amtecol.com/Html/MSDS/MSDS%20fully%20synt.engine%2012022.html, and http://www.toro.com/safety/docs/106-5901.pdf, respectively.

Acceptance Monitoring PC requires monitoring and recordkeeping to demonstrate that the feedstock stored and recycled at Commercial Fuel's Nampa facility to assure that more volatile mixtures are not being stored or processed, and to reasonably assure that the feedstock has not been contaminated with high-VOC liquids or polychlorinated biphenyls.

Permit Condition 2.6 (Throughput Limits) limits the throughput of oil in each of the tanks, which inherently limit the emissions of VOCs and toxic air pollutants. Compliance with the NAAQS was demonstrated based on running the Parker boiler at maximum capacity for 24 hours per day and 8,760 hours per year. Pollutant-specific emission limits were therefore not necessary to assure compliance with the NAAQS and state-only TAPs rules.

Permit Condition 2.7 (Hot Water Boiler (H-1) Operations) requires that the hot water boiler be fueled by natural gas, exclusively.

Permit Condition 2.8 (Fugitive Emissions) requires that all reasonable precautions be taken to prevent PM from becoming airborne in accordance with IDAPA 58.01.01.650-651. This permit condition was added because fugitive emissions may occur at the facility from truck traffic on site.

Permit Condition 2.10 (Throughput Monitoring) requires that the permittee shall monitor and record the use motor oil throughput for each tank (Tanks 1, 2, 3, 5, 6, 7, and 8) on a monthly basis, in units of gallons per month and gallons for the most recent consecutive 12-calendar month period. The throughput limits imposed on each tank reflect the assumptions made in the applicant's analysis and the modeling. These are necessary because of the relatively small size of the facility, and because the tanks with the lowest throughputs are also the closest to the facility ambient air boundary.

5. PERMIT FEES

Table 5.1 lists the processing fee associated with this permitting action. The facility is subject to a processing fee of $2,500 because its permitted emissions are greater or equal to one ton per year but less than ten tons per year. Refer to the chronology for fee receipt dates.

Table 5.1 PTC PROCESSING FEE TABLE

Emissions Inventory			
Pollutant	**Annual Emissions Increase (T/yr)**	**Annual Emissions Reduction (T/yr)**	**Annual Emissions Change (T/yr)**
NO_X	3.57	0	3.57
SO_2	0.0	0	0.0
CO	4.11	0	4.11
PM_{10}	0.30	0	0.22
VOC	1.10	0	1.10
HAPS	0.088	0	0.088
Total:	**9.09**	0	**9.09**
Fee Due	**$ 2,500.00**		

6. PUBLIC COMMENT

An opportunity for public comment period on the PTC application was provided from February 5, 2008 through February 19, 2008, in accordance with IDAPA 58.01.01.209.01.c. During this time, there were no comments on the application and no requests for a public comment period on DEQ's proposed action.

Appendix A – AIRS Information

AIRS/AFS Facility-wide Classification – Data Form

Facility Name: Commercial Fuel, LLC

Facility Location: 702 N. Sugar Street, Nampa, Idaho 83867

Facility ID: 027-00098 Date: July 24, 2009

Project/Permit No.: P-2008.0154 Completed By: Mary Capiral

☐ Check if there are no changes to the facility-wide classification resulting from this action. (compare to form with last permit)
Comments:

☐ Yes, this facility is an SM80 source.

Identify the facility's area classification as A (attainment), N (nonattainment), or U (unclassified) for the following pollutants:

	SO2	PM10	VOC
Area Classification:	A	A	A

DO NOT LEAVE ANY BLANK

Check one of the following:

☒ **SIP** [0] - Yes, this facility is subject to SIP requirements. (do not use if facility is Title V)

OR

☐ **Title V** [V] - Yes, this facility is subject to Title V requirements. (If yes, do not also use SIP listed above.)

For SIP or TV, identify the classification (A, SM, B, C, or ND) for the pollutants listed below. Leave box blank if pollutant is not applicable to facility.

	SO2	NOx	CO	PM10	PT (PM)	VOC	THAP
Classification:	B	B	B	B	B	B	B

☐ **PSD** [6] - Yes, this facility has a PSD permit.

If yes, identify the pollutant(s) listed below that apply to PSD. Leave box blank if pollutant does not apply to PSD.

	SO2	NOx	CO	PM10	PT (PM)	VOC	THAP
Classification:	☐	☐	☐	☐	☐	☐	☐

☐ **NSR - NAA** [7] - Yes, this facility is subject to NSR nonattainment area (IDAPA 58.01.01.204) requirements.

Note: As of 9/12/08, Idaho has no facility in this category.

If yes, identify the pollutant(s) listed below that apply to NSR-NAA. Leave box blank if pollutant does not apply to NSR - NAA.

	SO2	NOx	CO	PM10	PT (PM)	VOC	THAP
Classification:	☐	☐	☐	☐	☐	☐	☐

☐ **NESHAP** [8] - Yes, this facility is subject to NESHAP (Part 61) requirements. (THAP only)

If yes, what CFR Subpart(s) is applicable?

☐ **NSPS** [9] - Yes, this facility is subject to NSPS (Part 60) requirements.

If yes, what CFR Subpart(s) is applicable?

If yes, identify the pollutant(s) regulated by the subpart(s) listed above. Leave box blank if pollutant does not apply to the NSPS.

	SO2	NOx	CO	PM10	PT (PM)	VOC	THAP
Classification:	☐	☐	☐	☐	☐	☐	☐

☐ **MACT** [M] - Yes, this facility is subject to MACT (Part 63) requirements. (THAP only)

If yes, what CFR Subpart(s) is applicable?

Appendix B – Emissions Inventory

P-2008.0010.DEQ.QA Calculations - Commercial Fuel Reprocessing, LLC, Process Boiler H-1

NATURAL GAS COMBUSTION, AP-42 SECTION 1.4 (7/98) 3/18/2008 16:53

6.8 MMBtu/hr / 1,020 MMBtu/MMscf = 6.67E-03 MMscf/hr

Operating Assumptions: 24 hr/day 8,760 hr/yr

Criteria Air Pollutants	Emission Factor	Emissions (AP-42, Table 1.4-1)		Emission Factor	Emissions (Parker Boiler Co)	
	lb/MMscf	lb/hr	T/yr	lb/MMBtu	lb/hr	T/yr
NOx	100	6.67E-01	2.92E+00	0.12	0.82	3.57
CO	84	5.60E-01	2.45E+00	0.138	0.94	4.11
PM10	7.6	5.07E-02	2.22E-01	0.01	0.068	0.30
SO2	0.6	4.00E-03	1.75E-02	0	0.00	0.00
VOC	5.5	3.67E-02	1.61E-01	0.0371	0.25	1.10
Lead	0.0005	3.33E-06	1.46E-05	--	0.00	0.00
Lead			7.30E-03	lb/quarter		
		TOTAL	5.77 T/yr			9.09 T/yr

Hazardous Air Pollutants (HAPs) and Toxic Air Pollutants (TAPs

	lb/MMscf	lb/hr	EL (lb/hr)	Exceeds EL?	Idaho TAP?	Emissions > 100% of EL?
PAH HAPs						
2-Methylnaphthalene	2.4E-05	1.60E-07				
3-Methylchloranthrene	1.8E-06	1.20E-08	2.50E-06	no	Y	no
Acenaphthene	1.8E-06	1.20E-08				
Acenaphthylene	1.8E-06	1.20E-08				
Anthracene	2.4E-06	1.60E-08				
Benzo(a)anthracene	1.8E-06	1.20E-08		See POM	Y	
Benzo(a)pyrene	1.2E-06	8.00E-09	2.00E-06	See POM	Y	
Benzo(b)fluoranthene	1.8E-06	1.20E-08				
Benzo(g,h,i)perylene	1.2E-06	8.00E-09		See POM	Y	
Benzo(k)fluoranthene	1.8E-06	1.20E-08		See POM	Y	
Chrysene	1.8E-06	1.20E-08		See POM	Y	
Dibenzo(a,h)anthracene	1.2E-06	8.00E-09		See POM	Y	
Dichlorobenzene	1.2E-03	8.00E-06				
Fluoranthene	3.0E-06	2.00E-08				
Fluorene	2.8E-06	1.87E-08				
Indeno(1,2,3-cd)pyrene	1.8E-06	1.20E-08		See POM	Y	
Naphthalene	6.1E-04	4.07E-06	3.33	no	Y	no
Phenanathrene	1.7E-05	1.13E-07				
Pyrene	5.0E-06	3.33E-08				
Polycyclic Organic Matter (POM) 7-PAH Group		7.60E-08	2.00E-06	no	Y	no
Non-PAH HAPs						
Benzene	2.1E-03	1.40E-05	8.00E-04	no	Y	no
Formaldehyde	7.5E-02	5.00E-04	5.10E-04	no	Y	no
Hexane	1.8E+00	1.20E-02	12	no	Y	no
Toluene	3.4E-03	2.27E-05	25	no	Y	no
Non-HAP Organic Compounds						
7,12-Dimethylbenz(a)anthracene	1.6E-05	1.07E-07				
Butane	2.1E+00	1.40E-02				
Ethane	3.1E+00	2.07E-02				
Pentane	2.6E+00	1.73E-02	118	no	Y	no
Propane	1.6E+00	1.07E-02				
Metals (HAPs)						
Arsenic	2.0E-04	1.33E-06	1.5E-06	no	Y	no
Barium	4.4E-03	2.93E-05	0.033	no	Y	no
Beryllium	1.2E-05	8.00E-08	2.8E-05	no	Y	no
Cadmium	1.1E-03	7.33E-06	3.7E-06	YES	Y	YES
Chromium	1.4E-03	9.33E-06	0.033	no	Y	no
Cobalt	8.4E-05	5.60E-07	0.0033	no	Y	no
Copper	8.5E-04	5.67E-06	0.013	no	Y	no
Manganese	3.8E-04	2.53E-06	0.067	no	Y	no
Mercury	2.6E-04	1.73E-06	0.003	no	Y	no
Molybdenum	1.1E-03	7.33E-06	0.333	no	Y	no
Nickel	2.1E-03	1.40E-05	2.7E-05	no	Y	no
Selenium	2.4E-05	1.60E-07	0.013	no	Y	no
Vanadium	2.3E-03	1.53E-05	0.003	no	Y	no
Zinc	2.9E-02	1.93E-04	0.667	no	Y	no
		Total HAPs	5.62E-02	T/yr		

Table 1-a:
Tank Heater Criteria Pollutant Emissions Analysis

Natural Gas-Fired Equipment	Make / Model	Rated Input (MMBtu per hr)	On-Line Rating hrs/yr	Fuel Rate[1] (scfh)		Emission Factors: Source	Factor	Units	Uncontrolled Emissions: lb/hr	tons/yr	Modeling Threshold: lb/hr	tons/yr
Tank Heater	Parker Boiler	6.800	8760	6667	NO_x	AP-42 Table 1.4-1	100	lb/MMscf	0.67	2.92	--	1.0
					CO		84		0.56	2.45	14	--
					SO_2		0.6		0.0040	0.0175	0.2	1.0
					PM_{10}		7.6		0.0507	0.2219	0.2	1.0
					Lead		0.0005		3.33E-06	1.46E-05	--	0.6
					VOC		5.5		0.0367	0.1606	--	--
									Total =	5.77	tons/year	
	T-6800				NO_x	Parker Boiler Company	0.12	lb/MMBtu	0.82	3.67	--	1.0
					CO		0.138		0.94	4.11	14	--
					SO_2		0		0.00	0.00	0.2	1.0
					PM_{10}		0.01		0.068	0.30	0.2	1.0
					Lead		--		0.00	0.00	--	0.6
					VOC		0.0371		0.25	1.10	--	--
									Total =	9.09	tons/year	

Note 1: Assume natural gas heating value of 1020 Btu/scf.

Table 1-b:
Tank Heater Toxic Air Pollutant Emissions Analysis

Unit ID	Rated Input MMBtu per hr	On-line Rating Used (hrs/yr)	Emission Factors AP-42 Tables 1.4-3 and 1.4-4 Toxic Air Pollutant	lb/MMBtu	Uncontrolled Combustion Emissions lbs/hr	58.01.01 Screening Level lbs/hr
Tank Heater Parker T6800 HW Boiler	6.800	8760	Arsenic	2.0E-07	1.3E-06	1.50E-06
			Barium	4.3E-06	2.9E-05	0.033
			Benzene	2.1E-06	1.40E-05	8.00E-04
			Cadmium	1.1E-06	7.3E-06	3.70E-06
			Chromium	1.4E-06	9.3E-06	0.033
			Cobalt	8.2E-08	5.6E-07	0.0070
			Copper	8.3E-07	5.7E-06	0.07
			Dichlorobenzene	1.2E-06	8.0E-06	20
			Formaldehyde	7.4E-05	5.0E-04	5.10E-04
			Hexane	1.8E-03	0.012	12
			Manganese	3.7E-07	2.5E-06	0.060
			Mercury	2.5E-07	1.7E-06	0.001
			Molybdenum	1.1E-06	7.3E-06	0.333
			Naphthalene	6.0E-07	4.1E-06	3.33
			Nickel	2.1E-06	1.4E-05	2.70E-05
			Pentane	2.5E-03	1.7E-02	118
			Toluene	3.3E-06	2.3E-05	25
			Vanadium	2.3E-06	1.5E-05	0.003
			Zinc	2.8E-05	1.9E-04	0.067
				Total =	0.13	tons/year

Table 2:
Storage Tanks 1-3 Estimated Emissions

TANKS Input Data		Tank 1	Tank 2	Tank 3
Tank Type		Vertical, Fixed Roof, Unheated		
Roof Type		Flat		3' Ctr Pitch
Tank Contents		Recycled Fuel Oil Product		
Tank Exterior		Silver Paint (entered as "White")		
Tank Length (ft)		24.0	28.3	20.1
Tank Diameter (ft)		22.9	30.0	30.0
Tank Capacity (gals)		74,000	150,000	110,000
Tank Working Vol (gals)		60,000	135,000	100,000
Average Level		50%	50%	50%
Annual Throughput (gal/yr)	Total	3,500,000		
	Per Tank	711,864	1,601,695	1,186,441
Batches per Year		11.86	11.9	11.9

TANKS Output	Controlled Emissions			Proposed Permit Annual Emissions	Proposed Permit Hourly Emissions	58.01.01 Screening Level
	Tank 1	Tank 2	Tank 3			
Air Pollutant	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/hr	lbs/hr
Benzene	0.17	0.36	0.25	0.78	8.90E-05	8.00E-04
Ethylbenzene	0.08	0.17	0.12	0.37	4.22E-05	29
Naphthalene	0.00	0.00	0.00	0.00	0.00E+00	3.33
Tetrachloroethene	0.10	0.22	0.16	0.48	5.48E-05	1.30E-02
Toluene	0.99	2.12	1.51	4.62	5.27E-04	25
1,2,4-Trimethylbenzene	0.07	0.15	0.11	0.33	3.77E-05	8.2
Xylenes	0.44	0.95	0.68	2.07	2.36E-04	29
Fuel Oil VOCs	0.21	0.46	0.32	0.99	1.13E-04	--
			Total =	0.0048	tons/year	

Table 2-b:
Truck Loading Estimated Emissions

Unit ID	Proposed Thruput	Truck Capacity	Loading Time (hr)	AP-42 Section 6.2 Loading Loss (lbs/Mgal)[1]	Loading Loss (lbs/yr average)	Loading Loss (lbs/hr max)	Air Pollutant	Wt.% in Vapor[2]	Uncontrolled Loading Emissions	58.01.01 Screening Level
	gal per year	Gallon							lbs/hr[3]	lbs/hr
Truck Loading	3.5E+06	9500	2	0.00090	3.140	4.26E-03	Benzene	8.0%	2.9E-05	8.0E-04
							Ethylbenzene	3.9%	1.7E-04	29
							Naphthalene	0.1%	2.6E-06	3.33
							Tetrachloroethene	5.1%	1.8E-05	1.3E-02
							Toluene	47.9%	2.0E-03	25
							1,2,4-Trimethylbenzene	3.3%	1.4E-04	8.2
							Xylenes	21.4%	9.1E-04	29
							Fuel Oil VOCs	10.3%	4.4E-04	--

Notes:

1. Factor calculated from AP-42 Section 5.2 Formula 1 for Loading Loss = 12.46*SPM/T (page 5.2-4).
   S = Saturation Factor = 0.6 for dedicated truck with submerged loading (Table 5.2-1).
   P = vapor pressure of liquid = 0.0006 psia.
   M = molecular weight of vapors = 102.6 lb/lb mol.
   T = average temperature of bulk liquid = 53 degrees F = 513 degrees R
   P, M, and T calculated by TANKS for Recycled Fuel Oil Product. See Tanks 1-3 Output Reports.
2. Vapor composition calculated by TANKS for Recycled Fuel Oil product. See Storage Tanks 1-3 TANKS Output Reports.
3. Benzene and tetrachloroethene (586 TAPs) hourly rates are annual averages. All other pollutant hourly rates are maximums.

Table 3: Process Tanks 5-8 TANKS Input and Estimated Emissions

TANKS Input Data		Tank 5	Tank 6	Tank 7	Tank 8	
Tank Type		Horizontal, Heated				
Tank Contents		Used Oil				
Tank Exterior		Orange Insulation ("Red")		Silver Paint	Rust ("Red")	
Tank Length (ft)		32.3	32.3	25.0	29.5	
Tank Diameter (ft)		8.3	8.3	9.2	7.8	
Tank Maximum Vol (gals)		12929	12929	12341	10544	
Tank Working Vol (gals)		10,500	10,500	10,000	8,500	
Max Annual Operations	Batches/yr	365	365	365	365	Total (gal)
	Calc'd Thruput (gal	3,832,500	3,832,500	3,650,000	3,102,500	14,417,500

Processing Tanks Uncontrolled Emissions (TANKS Output)	Tank 5		Tank 6		Tank 7		Tank 8		Unrestricted Annual Emissions	Unrestricted Hourly Emissions	68.01.01 Screening Level
Air Pollutant	lbs/yr	lbs/batch	lbs/yr	lbs/batch	lbs/yr	lbs/batch	lbs/yr	lbs/batch	lbs/yr	lbs/hr	lbs/hr
Benzene	3.58	0.0098	3.58	0.0098	3.41	0.0093	2.91	0.0080	13.48	1.54E-03	8.00E-04
Ethylbenzene	1.03	0.0028	1.03	0.0028	0.99	0.0027	0.84	0.0023	3.89	4.44E-04	29
Naphthalene	0.04	0.0001	0.04	0.0001	0.04	0.0001	0.03	0.0001	0.15	1.71E-05	3.33
Tetrachloroethene	1.72	0.0047	1.72	0.0047	1.64	0.0045	1.40	0.0038	6.48	7.40E-04	1.30E-02
Toluene	17.99	0.0493	17.99	0.0493	17.15	0.0470	14.61	0.0400	67.74	7.73E-03	25
1,2,4-Trimethylbenzene	1.53	0.0042	1.53	0.0042	1.46	0.0040	1.24	0.0034	5.76	6.58E-04	8.2
Xylenes	7.22	0.0198	7.22	0.0198	6.98	0.0191	5.85	0.0161	27.28	3.11E-03	29
Fuel Oil VOCs	0.03	0.0001	0.03	0.0001	0.03	0.0001	0.03	0.0001	0.12	1.37E-05	–

Proposed Operations		Tank 5	Tank 6	Tank 7	Tank 8
Permitted Throughput (gal/yr)	Total	3,500,000			
	Per Tank	1,400,000	1,400,000	350,000	350,000
Batches per Year		133.3	133.3	35.0	41.2

Processing Tanks Controlled Emissions	Tank 5	Tank 6	Tank 7	Tank 8	Proposed Permit Annual Emissions	Proposed Permit Hourly Emissions	
Air Pollutant	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/hr	
Benzene	1.3078	1.3078	0.3270	0.3283	3.27	3.73E-04	Note 1
Ethylbenzene	0.3763	0.3763	0.0949	0.0948	0.94	1.08E-04	
Naphthalene	0.0146	0.0146	0.0038	0.0034	0.04	4.16E-06	
Tetrachloroethene	0.6283	0.6283	0.1573	0.1579	1.57	1.79E-04	
Toluene	6.5717	6.5717	1.6445	1.6482	16.44	1.88E-03	
1,2,4-Trimethylbenzene	0.5589	0.5589	0.1400	0.1399	1.40	1.60E-04	
Xylenes	2.6374	2.6374	0.6693	0.6611	6.61	7.54E-04	
Fuel Oil VOCs	0.0110	0.0110	0.0029	0.0034	0.03	3.22E-06	
				Total =	0.015	tons/year	

Note 1. 02/26/08: Corrected error in benzene total hourly emissions formula. Individual tank emissions used in modeling are unchanged.

Table 4: Facility Criteria, Hazardous, and Toxic Air Pollutants Emissions Summary

Criteria Pollutants - Facility Total	Averaging Period	Modeling Threshhold (ton/yr)	Unrestricted Boiler Emissions (ton/yr)	Proposed Storage Tanks 1-3 Emissions (ton/yr)	Proposed Process Tanks 5-8 Emissions (ton/yr)	Proposed Truck Loading Emissions (ton/yr)	Proposed Facility Emissions (ton/yr)
Lead [1]	Annual	0.6	1.46E-05	--	--	--	1.46E-05
NO_x	Annual	1.0	3.57	--	--	--	3.57
VOC	Annual	--	1.10	0.005	0.015	0.002	1.13

Toxic Air Pollutants - Facility Total	TAP Type (24 hr or Annual Averaging)	58.01.01 Screening Emission Level (lb/hr)	Unrestricted Boiler Emissions (lb/hr)	Proposed Storage Tanks 1-3 Emissions (lb/hr)	Proposed Process Tanks 5-8 Emissions (lb/hr)	Proposed Truck Loading Emissions (lb/hr)	Proposed Facility Emissions (lb/hr)	Proposed Facility Emissions (% of EL)
Arsenic [1]	586 (Annual)	1.50E-06	1.33E-06				1.33E-06	88.9%
Barium	585 (24 hr)	0.033	2.93E-05				2.93E-05	0.09%
Benzene [1]	586 (Annual)	8.00E-04	1.40E-05	8.90E-05	3.73E-04	2.88E-05	5.05E-04	63.2%
Cadmium [1]	586 (Annual)	3.70E-06	7.33E-06				7.33E-06	198.2%
Chromium [1]	585 (24 hr)	0.033	9.33E-06				9.33E-06	0.03%
Cobalt [1]	585 (24 hr)	0.0070	5.60E-07				5.60E-07	0.01%
Copper	585 (24 hr)	0.07	5.67E-06				5.67E-06	0.01%
Dichlorobenzene [1]	585 (24 hr)	20	8.00E-06				8.00E-06	0.00004%
Ethyl Benzene [1]	585 (24 hr)	29		4.22E-05	1.08E-04	1.66E-04	3.16E-04	0.0011%
Formaldehyde [1]	586 (Annual)	5.10E-04	5.00E-04				5.00E-04	98.0%
n-Hexane [1]	585 (24 hr)	12	1.20E-02				1.20E-02	0.10%
Manganese [1]	585 (24 hr)	0.060	2.53E-06				2.53E-06	0.004%
Mercury [1]	585 (24 hr)	0.001	1.73E-06				1.73E-06	0.17%
Molybdenum	585 (24 hr)	0.333	7.33E-06				7.33E-06	0.002%
Naphthalene [1]	585 (24 hr)	3.33	4.07E-06	0.00E+00	4.16E-06	2.56E-06	1.08E-05	0.0003%
Nickel [1]	586 (Annual)	2.70E-05	1.40E-05				1.40E-05	51.9%
Pentane	585 (24 hr)	118	1.73E-02				1.73E-02	0.01%
Tetrachloroethene [1]	586 (Annual)	1.30E-02		5.48E-05	1.79E-04	1.82E-05	2.52E-04	1.9%
Toluene [1]	585 (24 hr)	25	2.27E-05	5.27E-04	1.88E-03	2.04E-03	4.47E-03	0.02%
1,2,4 Trimethylbenzene	585 (24 hr)	8.2		3.77E-05	1.60E-04	1.42E-04	3.39E-04	0.004%
Vanadium	585 (24 hr)	0.003	1.53E-05				1.53E-05	0.51%
Xylenes [1]	585 (24 hr)	29		2.36E-04	7.54E-04	9.14E-04	1.90E-03	0.007%
Zinc	585 (24 hr)	0.067	1.93E-04				1.93E-04	0.29%

[1]Hazardous Air Pollutants - Facility Total	Major Facility Threshold (ton/yr)	Unrestricted Boiler Emissions (ton/yr)	Proposed Storage Tanks 1-3 Emissions (ton/yr)	Proposed Process Tanks 5-8 Emissions (ton/yr)	Proposed Truck Loading Emissions (ton/yr)	Proposed Facility Emissions (ton/yr)
Total HAPS	25	0.055	0.0042	0.014	0.014	0.088

Appendix C – Ambient Air Quality Impact Analysis

MEMORANDUM

DATE: March 21, 2008

BY: Cheryl A. Robinson, P.E., Staff Engineer, Air Program

THROUGH: Darrin Mehr, Stationary Source Modeling, Air Program

PROJECT NUMBER: P-2008.0154

SUBJECT: Modeling Review for the Commercial Fuel Recycling, LLC, Permit to Construct Application for an existing motor oil recycling facility in Nampa, Idaho

1.0 Summary

Commercial Fuel Recycling, LLC (Commercial) submitted a Permit to Construct (PTC) application for an existing motor oil reprocessing facility located in Nampa, Idaho. Air quality analyses involving atmospheric dispersion modeling of emissions associated with operations of the facility were submitted to demonstrate that the modification would not cause or significantly contribute to a violation of any ambient air quality standard (IDAPA 58.01.01.203.02 [Idaho Air Rules Section 203.02]). Torf Environmental Management (Torf), Commercial's consultant, conducted the submitted ambient air quality analyses.

A technical review of the submitted air quality analyses was conducted by DEQ. The submitted modeling analyses, with DEQ's verification review: 1) utilized appropriate methods and models; 2) was conducted using reasonably accurate or conservative model parameters and input data; 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that predicted pollutant concentrations from emissions associated with the proposed facility were below significant contribution levels (SCLs) or other applicable regulatory thresholds; or b) that predicted pollutant concentrations from emissions associated with the facility, when appropriately combined with background concentrations, were below applicable air quality standards at all receptor locations. Table 1 presents key assumptions and results that should be considered in the development of the permit.

Table 1. KEY ASSUMPTIONS USED IN MODELING ANALYSES

Criteria/Assumption/Result	Explanation/Consideration
The ambient boundary includes an area on the west side of the facility that is outside of the facility's fenced enclosure. The applicant noted that this area as being posted with No Trespassing signs, and that facility staff are trained to prevent members of the public from entering this area. These control measures should be included as enforceable permit conditions.	The maximum benzene impacts are at the ambient air boundary. Members of the public must be excluded from this area.

2.0 Background Information

2.1 Applicable Air Quality Impact Limits and Modeling Requirements

This section identifies applicable ambient air quality limits and analyses used to demonstrate compliance.

2.1.1 Area Classification

The Commercial facility is located in Nampa, Idaho. The area is designated as attainment or unclassifiable for all criteria pollutants.

2.1.2 Significant and Full NAAQS Impact Analyses

If estimated maximum pollutant impacts to ambient air from the emissions sources associated with the proposed facility exceed the significant contribution levels (SCLs) of Idaho Air Rules Section 006, then a full impact analysis is necessary to demonstrate compliance with National Ambient Air Quality Standards (NAAQS) and Idaho Air Rules Section 203.02. A full NAAQS impact analysis for attainment area pollutants involves adding ambient impacts from facility-wide emissions, and emissions from any nearby co-contributing sources, to DEQ-approved background concentration values that are appropriate for the criteria pollutant/averaging-time at the facility location and the area of significant impact. The resulting maximum pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 2. Table 2 also lists SCLs and specifies the modeled value that must be used for comparison to the NAAQS.

Table 2. APPLICABLE REGULATORY LIMITS

Pollutant	Averaging Period	Significant Contribution Levels[a] ($\mu g/m^3$)[b]	Regulatory Limit[c] ($\mu g/m^3$)	Modeled Value Used[d]
PM_{10}[e]	Annual[f]	1.0	50[g]	Maximum 1st highest[h]
	24-hour	5.0	150[i]	Maximum 6th highest[j]
$PM_{2.5}$[e1]	Annual	Not established	15	Use PM_{10} as surrogate
	24-hour	Not established	35	Use PM_{10} as surrogate
Carbon monoxide (CO)	8-hour	500	10,000[k]	Maximum 2nd highest[h]
	1-hour	2,000	40,000[k]	Maximum 2nd highest[h]
Sulfur Dioxide (SO_2)	Annual	1.0	80[g]	Maximum 1st highest[h]
	24-hour	5	365[k]	Maximum 2nd highest[h]
	3-hour	25	1,300[k]	Maximum 2nd highest[h]
Nitrogen Dioxide (NO_2)	Annual	1.0	100[g]	Maximum 1st highest[h]
Lead (Pb)	Quarterly	NA	1.5[l]	Maximum 1st highest[h]

[a] Idaho Air Rules Section 006.90

[b] Micrograms per cubic meter

[c] Idaho Air Rules Section 577 for criteria pollutants

[d] The maximum 1st highest modeled value is always used for significant impact analysis

[e] Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers

[e1] Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers

[f] The annual PM_{10} standard was revoked in 2006. The standard is still listed because compliance with the annual $PM_{2.5}$ standard is demonstrated by a PM_{10} analysis that demonstrates compliance with the revoked PM_{10} standard.

[g] Never expected to be exceeded in any calendar year

[h] Concentration at any modeled receptor

[i] Never expected to be exceeded more than once in any calendar year

[j] Concentration at any modeled receptor when using five years of meteorological data

[k] Not to be exceeded more than once per year

New source review requirements for assuring compliance with $PM_{2.5}$ standards have not yet been developed. EPA has asserted through a policy memorandum that compliance with $PM_{2.5}$ standards will be assured through an air quality analysis for the corresponding PM_{10} standard. Although the PM_{10} annual standard was revoked in 2006, compliance with the revoked PM_{10} annual standard must be demonstrated as a surrogate to the annual $PM_{2.5}$ standard.

2.1.3 Toxic Air Pollutant Analyses

Emissions of toxic substances are generally addressed by Idaho Air Rules Section 161:

> *Any contaminant which is by its nature toxic to human or animal life or vegetation shall not be emitted in such quantities or concentrations as to alone, or in combination with other contaminants, injure or unreasonably affect human or animal life or vegetation.*

Permit requirements for toxic air pollutants from new or modified sources are specifically addressed by Idaho Air Rules Section 203.03 and require the applicant to demonstrate to the satisfaction of DEQ the following:

> *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.*

Per Section 210, if the emissions increase associated with a new source or modification exceeds screening emission levels (ELs) of Idaho Air Rules Section 585 or 586, then the ambient impact of the emissions increase must be estimated. If ambient impacts are less than applicable Acceptable Ambient Concentrations (AACs) for non-carcinogens of Idaho Air Rules Section 585 and Acceptable Ambient Concentrations for Carcinogens (AACCs) of Idaho Air Rules Section 586, then compliance with TAP requirements has been demonstrated.

2.2 Background Concentrations

Background concentrations are used in the full NAAQS impact analyses to account for impacts from sources not explicitly modeled. Table 3 lists appropriate background concentrations for the location of the proposed facility. DEQ provided Torf with background concentration values.

Background concentrations were revised for all areas of Idaho by DEQ in March 2003[1]. Background concentrations in areas where no monitoring data are available were based on monitoring data from areas with similar population density, meteorology, and emissions sources. Ambient impact modeling was required only for the NO_x emissions from the Commercial facility. Emissions of other criteria pollutants did not exceed DEQ modeling thresholds. NO_x (NO_2) background concentrations were based on the maximum annual monitoring results in Pocatello from 1996 through 1999. This value is conservative for Nampa as a small town/suburban (non-industrial small town) because Nampa has a lower level of

1 Hardy, Rick and Schilling, Kevin. *Background Concentrations for Use in New Source Review Dispersion Modeling*. Memorandum to Mary Anderson, March 14, 2003.

industrial activity than Pocatello. Based on this information, DEQ provided a background annual NO_x (NO_2) concentration of 32 $\mu g/m^3$ to Torf. This value was suggested to assure impacts from surrounding industrial sources were adequately considered without specifically modeling those sources with the Commercial facility.

Table 3. BACKGROUND CONCENTRATIONS		
Pollutant	**Averaging Period**	**Background Concentration ($\mu g/m^3$)[a]**
PM_{10}[b]	24-hour	
	Annual	
Carbon monoxide (CO)	1-hour	
	8-hour	
Sulfur dioxide (SO_2)	3-hour	
	24-hour	
	Annual	
Nitrogen dioxide (NO_2)	Annual	32
Lead (Pb)	Quarterly	

[a] Micrograms per cubic meter
[b] Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers

3.0 Modeling Impact Assessment

3.1 Modeling Methodology

This section describes the modeling methods used by the applicant and DEQ to demonstrate compliance with applicable air quality standards.

3.1.1 Overview of Analyses

Table 4 provides a brief description of parameters used in the submitted modeling analyses.

Table 4. MODELING PARAMETERS		
Parameter	**Description/Values**	**Documentation/Addition Description**
Model	AERMOD	AERMOD with the PRIME downwash algorithm, version 07026
Meteorological data	1988 – 1992 Rural dispersion	National Weather Service surface data and upper air data from the Boise airport. Rural dispersion coefficients (i.e., the rural algorithm option) were used to adjust the wind speed profile, dispersion rates, and mixing heights.
Terrain	Considered/Rural	Receptor, building, and emissions source elevations were determined using Digital Elevation Model (DEM) file: Nampa, ID, 7.5°, NAD27.
Building downwash	Considered	The building profile input program (BPIP) was used
Receptor Grid	Grid 1	10-meter spacing along the property boundary
	Special Grid 1A	2-meter spacing along the west ambient air boundary, and along a line 2 meters out from the west and south ambient air boundaries.
	Grid 2	25-meter spacing out to 75 meters
	Grid 3	50-meter spacing out to 200 meters
	Grid 4	100-meter spacing out to 600 meters
	Grid 5	250-meter spacing out to 1200 meters
	Grid 6	500-meter spacing out to 2,500 meters

3.1.2 Modeling protocol and Methodology

An October 31, 2007 modeling protocol developed by Torf was received by DEQ on November 6, 2007, and was approved with comments on November 13, 2007. Modeling was generally conducted using methods and data presented in the protocol and the *State of Idaho Air Quality Modeling Guideline.*

3.1.3 Model Selection

Idaho Air Rules Section 202.02 requires that estimates of ambient concentrations be based on air quality models specified in 40 CFR 51, Appendix W (Guideline on Air Quality Models). The refined, steady state, multiple source, Gaussian dispersion model AERMOD was promulgated as the replacement model for ISCST3 in December 2005. EPA provided a 1-year transition period during which either ISCST3 or AERMOD could be used at the discretion of the permitting agency. AERMOD must be used for all air impact analyses, performed in support of air quality permitting, conducted after November 2006.

AERMOD retains the single straight line trajectory of ISCST3, but includes more advanced algorithms to assess turbulent mixing processes in the planetary boundary layer for both convective and stable stratified layers.

AERMOD offers the following improvements over ISCST3:

- Improved dispersion in the convective boundary layer and the stable boundary layer
- Improved plume rise and buoyancy calculations
- Improved treatment of terrain affects on dispersion
- New vertical profiles of wind, turbulence, and temperature

AERMOD was used in the submitted analysis. DEQ reviewed the submitted analysis model input, summary output file, and jpg output files provided by the applicant, but did not rerun the model.

3.1.4 Meteorological Data

National Weather Service surface and upper air meteorological data collected over the five-year period from 1988 through 1992 at the Boise, Idaho airport were pre-processed by DEQ using AERMET and provided to Torf as two 5-year files for input into AERMOD (an sfc file containing surface parameters and a pfl file containing wind profile data).

3.1.5 Terrain Effects

Terrain effects on dispersion were considered in the analyses. Receptor elevations were obtained by Torf using a Digital Elevation Model (DEM) 7.5-minute file.

3.1.6 Facility Layout

The facility layout used in the modeling analyses, including the ambient air boundary, buildings, and emissions units, were checked against the layout provided in the application. The layout used in the model was sufficiently representative of the existing site layout described in the submitted plot plan.

3.1.7 Building Downwash

Downwash effects potentially caused by structures at the facility were accounted for in the dispersion modeling analyses. The Building Profile Input Program (BPIP) was used to calculate direction-specific building dimensions and Good Engineering Practice (GEP) stack height information from building dimensions/configurations and emissions release parameters for AERMOD.

3.1.8 Ambient Air Boundary

Torf used the facility's north, east, and south fenceline as the ambient air boundary. The ambient air boundary on the west side of the facility was defined as a line 26 feet (8 meters) to the west of the fenceline. This encompasses the truck loadout area, which is outside the facility fence. As described in the application, this area is owned by Commercial, is posted with No Trespassing signs, and facility staff are trained to prevent members of the public from accessing this area. DEQ determined that these reasonable measures will be sufficient to preclude public access to all areas of the property.

3.1.9 Receptor Network

The receptor grid used in the submitted analysis is summarized in Table 4, and met the minimum recommendations specified in the *State of Idaho Air Quality Modeling Guideline*. DEQ determined the receptor grid was adequate to reasonably resolve maximum modeled concentrations. Figure 3-I shows the model layout and receptor grid near the ambient boundary.

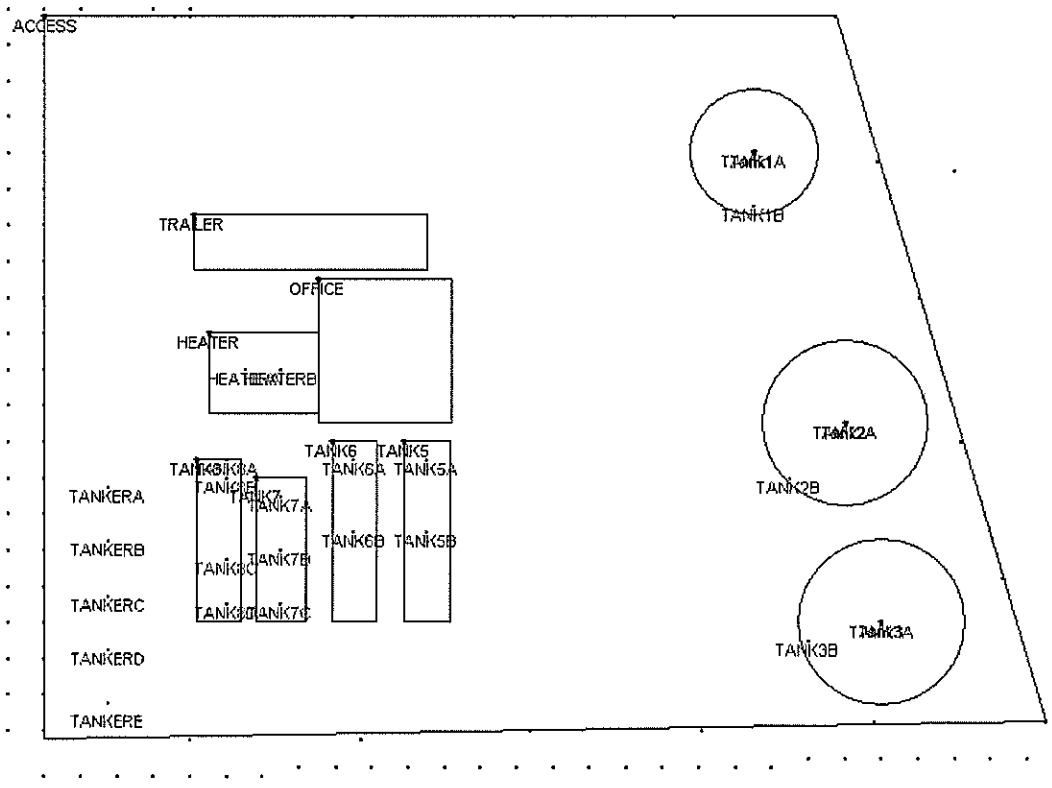

Figure 3-1. MODEL SETUP SHOWING NEAR-FIELD RECEPTORS

3.2 *Emission Release Parameters and Emission Rates*

Table 5 provides emissions release parameters for the submitted analyses including stack height, stack diameter, exhaust temperature, exhaust velocity, and modeled emission rates for the three pollutants for which modeling was required. Hourly emissions were based on 8,760 hours of operation per year for the process boiler, and processing 3.5 million gallons of used motor oil per year through the storage and processing tanks. Stack parameters are within reasonably expected values for the type of source.

Table 5. EMISSION RELEASE PARAMETERS

POINT SOURCES		Easting (X)	Northing (Y)	Base Elev	Stack Ht	Temp	Exit Vel	Stack Diam	NOx	Benzene	Cadmium
Source ID	Stk Rel Type	(m)	(m)	(m)	(ft)	(°F)	(m/s)	(ft)	(lb/hr)	(lb/hr)	(lb/hr)
HEATERA	VERT	536986	4826314	765.05	15.5	450	2.40	2.00	0.408	7.00E-06	3.67E-06
HEATERB	VERT	536988	4826314	765.05	17.5	450	2.40	2.00	0.408	7.00E-06	3.67E-06
TANK1A	VERT	537014	4826326	765.05	25.2	53	0.001	0.67		4.53E-06	
TANK1B	VERT	537014	4826323	765.05	24.7	53	0.001	1.21		1.49E-05	
TANK2A	VERT	537019	4826311	765.05	29.5	53	0.001	0.67		8.22E-06	
TANK2B	VERT	537016	4826308	765.05	28.6	53	0.001	1.33		3.29E-05	
TANK3A	HORIZ	537021	4826300	765.05	23.9	53	0.001	0.00		9.69E-07	
TANK3B	VERT	537017	4826299	765.05	20.4	53	0.001	1.33		2.76E-05	
TANK5A	CAP	536996	4826309	765.05	13.9	140	0.001	2.00		1.47E-04	
TANK5B	VERT	536996	4826305	765.05	15.7	140	0.001	0.25		2.30E-06	
TANK6A	CAP	536992	4826309	765.05	13.9	140	0.001	2.00		1.47E-04	
TANK6B	VERT	536992	4826305	765.05	15.7	140	0.001	0.25		2.30E-06	
TANK7A	VERT	536988	4826307	765.05	14.4	140	0.001	1.58		1.20E-05	
TANK7B	VERT	536988	4826304	765.05	15.1	140	0.001	1.67		1.33E-05	
TANK7C	VERT	536988	4826301	765.05	14.4	140	0.001	1.58		1.20E-05	
TANK8A	VERT	536985	4826309	765.05	13.2	140	0.001	0.17		1.33E-07	
TANK8B	VERT	536985	4826308	765.05	13.0	140	0.001	1.58		1.20E-05	
TANK8C	VERT	536985	4826303.5	765.05	13.5	140	0.001	1.67		1.33E-05	
TANK8D	VERT	536985	4826301	765.05	13.0	140	0.001	1.58		1.20E-05	
TANKERA	VERT	536978.5	4826307.5	765.05	9.0	53	0.001	1.67		5.79E-06	
TANKERB	VERT	536978.5	4826304.5	765.05	9.0	53	0.001	1.67		5.79E-06	
TANKERC	VERT	536978.5	4826301.5	765.05	9.0	53	0.001	1.67		5.79E-06	
TANKERD	VERT	536978.5	4826298.4	765.05	9.0	53	0.001	1.67		5.79E-06	
TANKERE	VERT	536978.5	4826295.3	765.05	9.0	53	0.001	1.67		5.79E-06	

3.3 Results for Significant and Full Impact Analyses

The submitted modeling analysis did not include a significant impact analysis; a full impact analysis was conducted for NO_x, the only criteria pollutant that was required to be modeled. The process heater is the only source of NO_x emissions at the facility. DEQ did not conduct verification analyses because no errors in submitted emissions or modeling parameters were identified, and modeling output files verified results shown in Table 6.

Table 6. RESULTS FOR FULL IMPACT ANALYSES

Pollutant	Averaging Period	Maximum Modeled Concentration ($\mu g/m^3$)[a]	Background Concentration ($\mu g/m^3$)	Total Ambient Impact ($\mu g/m^3$)	NAAQS[b] ($\mu g/m^3$)	Percent of NAAQS
PM_{10}[c]	24-hour				150	
	Annual				50	
Carbon monoxide (CO)	1-hour				40,000	
	8-hour				10,000	
Sulfur dioxide (SO_2)	3-hour				1,300	
	24-hour				365	
	Annual				80	
Nitrogen dioxide (NO_2)	Annual	21.3	32	53.3	100	53.3%

[a]Micrograms per cubic meter
[b]National ambient air quality standards
[c]Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers

3.4 Results for TAPs Analyses

Compliance with TAP increments were demonstrated by modeling controlled TAP emissions increases associated with the facility (those TAPs with emissions exceeding the ELs). Table 7 summarizes the submitted ambient TAP analyses. TAP impacts from increased emissions associated with the existing facility operations are all below applicable AACs/AACCs. Maximum benzene impacts are located along the western facility ambient boundary. Maximum cadmium impacts are located on the south fence line. These concentrations quickly fall along the trajectory between the sources and the maximum impact point on the ambient air boundary, dropping by about 50% compared to the maximum value within about 25 meters of the boundary.

Table 7. RESULTS OF TAP ANALYSES

TAP	Averaging Period	Maximum Modeled Concentration ($\mu g/m^3$)[a]	AAC/AACC[b] ($\mu g/m^3$)	Percent of AAC/AACC
Benzene	Annual	0.058	0.12	48.3 %
Cadmium	Annual	1.9E-04	5.6E-4	33.9%

[a]Micrograms per cubic meter
[b]Acceptable Ambient Concentration or Acceptable Ambient Concentration for a Carcinogen

4.0 Conclusions

The ambient air impact analyses demonstrated to DEQ's satisfaction that emissions from the facility will not cause or significantly contribute to a violation of any air quality standard.

Appendix D – Facility Comments

The following comments were received from the facility on April 21, 2008:

Facility Comment: Change "Used Oil Storage and Batch Processing Tanks 7 and Tank 8" to "Daily Batch Processing Tanks 7 and Tank 8."

Facility's Justification for Revision: Commercial Fuel does not store used motor oil on site. Tanks 7 and 8 are daily batch processing tanks and not storage tanks.

DEQ Response: The suggested change will be made to the PTC.

Facility Comment: Revise the wording in the Used Oil Acceptance Monitoring Permit Condition (PC) from "The permittee shall obtain records from the supplier on an as-received basis for each delivery of used oil, and shall ensure that acceptance is restricted to..." to "The permittee shall perform analysis on an as-received basis for each delivery of used oil to ensure that..."

Facility's Justification for Revision: Commercial Fuel's suppliers will not agree to perform any analysis on their used oil. However, Commercial Fuel is willing to perform certain analysis on each truckload of used oil that is delivered to site.

DEQ Response: DEQ will provide Commercial Fuel the option of having the used motor oil analyzed by a qualified laboratory if the used motor oil supplier does not provide certification.

Revised Used Oil Acceptance Monitoring PC: The PC will be revised to "The permitte shall obtain a used motor oil certification from the supplier for each delivery on an as-received basis or by having the fuel analyzes by a qualified laboratory..." The certification will be required to include the following information:

- the name and address of the used motor oil supplier
- the measured concentration of each constituent
- the analytical method or methods used to determine the concentration of each constituent
- the date and location of each sample the date of each certification analysis

Facility Comment: Revise the wording in the Used Oil Acceptance Monitoring PC from "Contaminant levels that are reasonably represented (i.e., no more than 20% higher for any contaminant) by the chemical analysis results submitted with Commercial Fuel's January 24, 2008 PTC application" to "Benzene in the used oil processed at the facility does not exceed 908 pounds per year."

Facility's Justification for Revision: Used oil is not a material with a fixed composition, and the various hydrocarbon species found in it are not necessarily "contaminants." Commercial Fuel analyzed one typical used oil feed sample and one Recycled Fuel Oil Product sample in order to provide DEQ with detailed information for the permit analysis. However, Commercial Fuel cannot agree to reject used oil feed that contains, for example, 66 ppm naphthalene as opposed to the 54 ppm naphthalene that was used in the permit analysis. This condition is too stringent and not necessary to ensure compliance with air quality standards. As determined in the permit application, the used oil feed constituent of concern at the Nampa site is benzene. As summarized in Table 1 below, all other Toxic Air Pollutant (TAP) emissions that result from the oil as it is being processed or stored are less than 2% of the Screening Emission Level, and all but tetrachloroethene are less that 0.02%.

Table 1: Commercial Fuel TAP Emission Analysis

Toxic Air Pollutants - Facility Total	TAP Type (24 hr or Annual Averaging)	58.01.01 Screening Emission Level (lb/hr)	Proposed Facility Emissions[1] (lb/hr)	Proposed Facility Emissions (% of EL)
Benzene	586 (Annual)	8.00E-04	5.05E-04	63.2%
Ethyl Benzene	585 (24 hr)	29	3.16E-04	0.0011%
Naphthalene	585 (24 hr)	3.33	1.08E-05	0.0003%
Tetrachloroethene	586 (Annual)	1.30E-02	2.52E-04	1.9%
Toluene	585 (24 hr)	25	4.47E-03	0.02%
1,2,4 Trimethylbenzene	585 (24 hr)	8.2	3.39E-04	0.004%
Xylenes	585 (24 hr)	29	1.90E-03	0.007%
Note 1: Includes Unrestricted Boiler, and Proposed Storage Tanks 1-3, Processing Tanks 5-8 and Truck Loading Emissions				

Since benzene emissions are regulated on an annual basis, Commercial Fuel proposes analyzing each used oil feed delivery for benzene, and using the result to maintain a 12-month running tally of benzene in the used oil feed. This will allow Commercial Fuel to accept feed with some variation in benzene levels while remaining in compliance with air quality standards. This approach will also prevent Commercial Fuel from having to store used oil feed in trucks and/or on-site while waiting for analysis. One of Commercial Fuel's competitive advantages is the ability to guarantee immediate processing of the used oil feed to its suppliers.

The permit analysis was based on 31.1 ppm benzene in 3,500,000 gallons of used oil feed per year. Using a specific gravity for used oil feed of 0.89, this equals 908 pounds per year of benzene in the used oil feed. Concern over chlorinated solvent contamination was also expressed in the Statement of Basis. This is an area of concern already addressed in the used oil regulations. Commercial Fuel currently tests each tanker shipment with a Chlor-D-Tect Test Kit No. 1000. In addition, each processing tank batch, or composite of several batches, are analyzed for arsenic, cadmium, chromium, lead, flash point and PCBs.

DEQ Response: Since Commercial Fuel's emissions estimates were based only on one typical used oil feed sample and one recycled fuel oil product sample, the requirement to analyze used motor oil for all TAPs will remain in the PTC. However, the concentration of TAPs in the used motor oil will be increased to 20% of corresponding EL values.

The concentration limits of TAPs in the used motor oil will be:

Table D.1: TAP CONCENTRATION LIMITS

TAP	Concentration in Test Sample (ppm)	Concentration in Test Sample (lb/yr)	Amount Emitted (lb/hr)	Amount Emitted (lb/yr)	5% of EL (lb/hr)	TAP Limit (lb/yr)	TAP Concentration Limit (ppm)
Benzene	31.1				N/A[a]		37.3
Ethylbenzene	60.7	1569	3.16E-04	2.77	1.45	7.2E06	278,482
Napthalene	46.2	1194.5	1.08E-05	0.09	0.17	1.98E07	764,470
Tetrachloroethene	60.7	1569	2.52E-04	2.21	2.6E-03	16,169.9	625.4
Toluene	440	11376	4.47E-03	39.16	1.25	3.2E06	123,034
1,2,4 Trimethylbenzene	ND (assumed 0.01)	0.26	3.39E-04	2.97	0.41	31.4	1.2
o-xylenes	409						
m,p-xylenes	86.9						
Xylenes (total)	495.9	12821.2	1.90E-03	16.64	1.45	9.79E06	378,657

[a] Since the potential emissions of benzene are estimated to be 63.2% of the EL, the concentration limit for benzene is limited to no more than 20% higher than the concentration reported in the chemical analysis report submitted with the facility's application (31.1 ppm x 1.2 = 37.3 ppm).

The following equations were used in determining the concentration limit:

Concentration in Test Sample (lb/yr) = [Specific Gravity of Used Motor oil (.89) x Density of Water (8.3 lb/gal) x Used motor oil throughput limit (3.5E06 gal/yr) x Concentration of TAP in test sample (ppm) ÷ 1.0E06)]

Amount Emitted (lb/yr) = [Amount Emitted (lb/hr) x (8,760 hr/yr)]

Concentration Limit in Used Motor Oil (lb/yr) = [Concentration in Test Sample (lb/yr) x 20% of EL (lb/hr) x 8,760 hr/yr ÷ Amount Emitted (lb/yr)]

Concentration Limit in Used Motor Oil (ppm) = [Concentration Limit in Used Motor Oil (lb/yr) ÷ (.89 x 8.3 lb/gal x 3.5E06 gal/yr ÷ 1.0E06)]

Facility Comment: Delete the maximum true vapor pressure less than 0.01 kPa limit from the Used Oil Acceptance Monitoring PC.

Facility's Justification for Revision: Concern over Volatile Organic Compounds (VOCs) was expressed in the Statement of Basis. Based on the used oil feed and recycled fuel oil product compositions used in the permit analysis, VOC emissions from oil processing and storage are 0.02 T/yr. This is far below a level of regulatory concern. It is true that some used oil collectors accept diesel as a blending stock. However, this is not the case with Commercial Fuel for fiscal reasons. Due to the nature of Commercial Fuel's process (heating the oil to drive off water), processing used oil feed with any significant percentage of lighter hydrocarbons costs Commercial Fuel in excessive boiler fuel use and processing time. Therefore, Commercial Fuel avoids collecting used oil from suppliers who mix in lighter hydrocarbons, and would discontinue collection of any supply that is regularly found to contain lighter hydrocarbons during processing (as evidenced by extensive heat-up time).

From an analytical standpoint, the 0.01 kPa vapor pressure standard of the draft permit condition is too low for direct determination. The vapor pressure would have to be calculated based on a detailed analysis of the used oil feed. Again, in addition to the cost, this permit condition of used oil feed acceptance would require Commercial Fuel to store the used oil feed on trucks and/or on-site while waiting for analysis.

DEQ Response: The requirements in the permit condition are necessary as they were based on assumptions used in the applicant's analysis and modeling to show compliance with IDAPA rules.

Revised Throughput Limit PC: The suggested change will be made to the PTC.

Facility Comment: Commercial Fuel, LLC will track each tank's throughput, as stated in the Throughput Limit PC, but asks that the individual throughput limitations for Tanks 1 to 3 be removed.

DEQ Response: The throughput limits imposed on each tank reflect the assumptions made in the applicant's analysis and the modeling. These are necessary because of the relatively small size of the facility, and because the tanks with the lowest throughputs are also the closest to the facility ambient air boundary.

Revised Throughput Limit PC: No revisions made