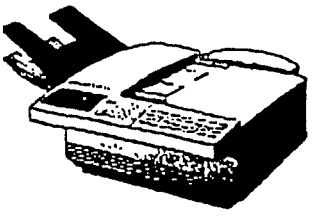
A-99-03
II-D-3

ENSR
ENSR Consulting and Engineering



Facsimile Cover Sheet

TO:	Jawad Touma	EPA-OAQPS/RTP	919-541-0044\
	Name	Firm/Location	Fax Number
FROM:	David Heinold	Air Quality Studies	3166
	Name	Division/Dept.	Tel. Ext.
DATE:	September 15, 1997	4:26pm	
	Date	Time	
RE:	CMA MEK Petition		

COMMENTS:

Dear Joe:

I have taken another shot at providing the source information for major MEK emitters that you requested. The attached 16 pages include the summary table (for significant sources) and a single page listing of parameters for all sources at each of 15 facilities (E1, E3, E4, E7, E8, E9, E15, E17, E20, E21, E23, E25, E28, E29, E32). Emission rates are provided categorically to maintain confidentiality.

Please give me a call at your convenience with any comments or questions so that I can finalize the information and send it on to CMA.

Regards, Dave

Dave

Cover Page + 16 Pages

Accounting No: 1410-016-300

Call **(508) 635-9500** regarding problems with this transmission.

35 Nagog Park
Acton, MA 01720
FAX (508) 635-9180

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DRAFT

TABLE 1

Modeling Input Parameters for Signficiant Sources

(Significant sources are those which, combined, contribute at least 90% of the emissions for a facility.)

→ Rationale why PM10 is significant? not enough

Source ID	AREA SOURCE PARAMETERS: Emission Rate per Source (g/s) 0 - 5	5 - 10	10 - 15	Size of Area Source (m^2) < 1000	1000 - 5000	5000-13000	POINT SOURCE PARAMETERS: Emission Rate per Source (g/s) 0 - 5	5 - 10	10 - 35	Stack Gas Temperature (K) < 300	300 - 330	330 - 450	Stack Gas Velocity (m/s) 0 - 1	1 - 15	15 - 50	Stack Inside Diameter (m) < 0.5	0.5 - 1	1 - 15
E1		NA			NA			X			X			X				X
E3	X					X		NA			NA			NA			NA	
E4	X			X			X				X	X	X				X	X
E7		NA			NA		X			X	X		X					X
E8	X	X			X	X		NA			NA			NA			NA	
E9	X			X			X			X		X	X	X		X	X	X
E15		NA			NA		X		X		X	X			X		X	X
E17	X				X		X			X			X	X		X		
E20	X	X			X		X	X		X	X	X		X	X		X	
E21	X				X		X			X	X		X	X			X	
E23	X	X				X	X	X			X				X		X	
E25		X	X		X	X		NA			NA			NA			NA	
E28		NA			NA		X			X			X				X	
E29		X		X			X			X				X		X		
E32		NA			NA			X				(789)			X			X

NA = Not applicable.

Source ID	Release Height (m) A = areas, P = points < 5	5 - 10	10 - 17	Max GEP Height (m)[a] $2.5*H_b$	Buoyancy Flux (m^4/s^3) $gv_sd_s^2(dT/4T_s)$	Dispersion Environment Rural	Urban	Flat Terrain? Yes	No	Shortest Dist. from Source to Property Boundary (m) < 100	100 - 150	> 150	Level of Modeling TIER 2	TIER 3
E1			P	34	22		X	X		X			X	
E3	A			NA	NA	X		X		X	X		X	X
E4		A	P	36	0	X		X			X	X	X	X
E7		P		18	0	X		X		X			X	X
E8	A			NA	NA		X	X		X		X	X	
E9	A,P	P		21	0 - 1.3	X		X		X	X		X	X
E15	P	P		40	1.2 - 121	X			X[b]	X		X		X
E17	A	P		52	0	X		X		X			X	X
E20	A		P	55	0 - 7.1		X	X		X			X	
E21	A	P		46	0 - 0.9		X	X		X	X		X	
E23		P	A	43	1.1	X		X		X		X	X	
E25	A			NA	NA		X	X		X		X	X	X
E28	P			19	0	X		X		X			X	X
E29		A	P	43	0		X	X		X			X	
E32			P	38	149	X		X		X			X	

[a] All buildings that influence stacks are squat, i.e., building width is greater than height (H_b). Thus, GEP stack height, $H_b + 1.5*L_b$, reduces to $2.5*H_b$.
[b] Modeling (performed by facility) considered terrain elevations, although maximum concentration occured at boundary where terrain was flat.
NA = Not applicable.

Facility E1
Source Parameters for Modeling

** DRAFT **

Type	Emission Category	Hs (m)	Ts (K)	Vs (m/s)	Ds (m)	Distance to Fence (m)	Max GEP Ht. (m)
POINT	E	16.8	328	11.5	2.74	20	34

Notes:

Emission rates, in terms of tons MEK emitted per year, fall into the following categories:

VL = very low (<= 1)
A = 1 - 10
B = 10 - 50
C = 50 - 150
D = 150 - 200
E = 200 - 400

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Facility E3
Source Parameters for Modeling

** DRAFT **

Type	Emission Category	Hs (m)	Area (m²)	Distance to Fence (m)	Max GEP Ht. (m)
AREA	D	3	7245	150	NA
AREA	B	1.5	6480	270	NA

Notes:

Emission rates, in terms of tons MEK emitted per year, fall into the following cat

VL = very low (<= 1)
A = 1 - 10
B = 10 - 50
C = 50 - 150
D = 150 - 200
E = 200 - 400

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Facility E4
Source Parameters for Modeling

** DRAFT **

Type	Emission Category	Hs (m)	Ts (K)	V (m/s)	Ds (m)	Distance to Fence (m)	Max GEP Ht. (m)
POINT	A	14.6	367	0	0.91	183	36
POINT	B	15.2	311	0	0.91	152	36
POINT	B	13.1	311	0	0.79	148	36
POINT	B	13.4	311	0	0.76	142	36
POINT	B	16.2	311	0	0.76	162	36
POINT	B	14.6	311	0	0.71	170	36
POINT	B	14.6	311	0	0.71	180	36
POINT	VL	15.2	674	8.2	1.17	236	36
POINT	A	14.6	311	0	0.61	221	36
POINT	C	11.3	322	0	0.53	188	36
POINT	C	12.2	322	0	0.61	206	36
POINT	C	12.2	408	0	0.91	200	36
POINT	C	12.2	333	0	0.61	184	36
POINT	C	12.2	394	0	0.51	177	36
POINT	C	12.2	303	0	1.12	162	36
					Area (m^2)		
AREA	VL	7.3			40	183	NA
AREA	A	7.5			73	152	NA
AREA	A	6.5			73	148	NA
AREA	A	6.7			65	140	NA
AREA	A	8.1			105	162	NA
AREA	A	7.3			105	170	NA
AREA	A	7.3			105	180	NA
AREA	VL	7.6			240	188	NA
AREA	VL	7.3			43	236	NA
AREA	A	5.6			56	221	NA
AREA	B	6.1			88	206	NA
AREA	B	6.1			88	199	NA
AREA	B	6.1			84	184	NA
AREA	B	6.1			84	177	NA
AREA	B	6.1			76	162	NA

Notes:

Emission rates, in terms of tons MEK emitted per year, fall into the following categories:

VL = very low (<= 1)
A = 1 - 10
B = 10 - 50
C = 50 - 150
D = 150 - 200
E = 200 - 400

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Facility E7
Source Parameters for Modeling

** DRAFT **

Type	Emission Category	% of Tot. Emissions	Hs (m)	Ts (K)	Vs (m/s)	Ds (m)	Dist. to Fence (m)	Max GEP Ht. (m)
POINT	B	10	7.6	294	0	4.6	37	18
POINT	B	9	8.5	325	0	8.2	38	18
POINT	B	20	6	299	0	8.2	39	18
POINT	B	9	7.3	325	0	11.6	47	18
POINT	B	20	6.7	299	0	6.7	50	18
POINT	B	9	7	325	0	11.6	64	18
POINT	B	20	6.4	299	0	7.6	66	18
						Area (m^2)		
AREA	A	1	3			400	47	NA
AREA	A	1	3			225	54	NA
AREA	A	1	1.2			18	17	NA

Notes:

Emission rates, in terms of tons MEK emitted per year, fall into the following categories:

VL = very low (<= 1)
A = 1 - 10
B = 10 - 50
C = 50 - 150
D = 150 - 200
E = 200 - 400

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Facility E8
Source Parameters for Modeling

** DRAFT **

Type	Emission Category	Hs (m)	Ts (K)	Vs (m/s)	Area (m²)	Distance to Fence (m)	Max GEP Ht. (m)
AREA	E	2.6			6161	390	NA
AREA	B	1.4			2862	85	NA
AREA	B	1.0			113218	1	NA
AREA	A	6.1			958	330	NA
AREA	A	0.0			23804	15	NA

Notes:

Emission rates, in terms of tons MEK emitted per year, fall into the following categories:

VL = very low (<= 1)
A = 1 - 10
B = 10 - 50
C = 50 - 150
D = 150 - 200
E = 200 - 400

Facility E9
Source Parameters for Modeling

** DRAFT **

Type	Emission Category	Hs (m)	Ts (K)	Vs (m/s)	Ds (m)	Distance to Fence (m)	Max GEP Ht. (m)
POINT	VL	2.7	293	0	0.25	21	23
POINT	B	4	293	0	0.3	21	23
POINT	B	4.2	360	0	0.29	21	23
POINT	B	10	311	12.59	0.91	107	45
POINT	A	5.1	293	14.42	0.2	107	45
POINT	VL	5.1	293	13.66	0.1	107	45
POINT	C	7.6	293	7.32	1.22	122	21
POINT	B	8.6	293	6.46	0.91	122	21
POINT	A	7.8	293	3.96	0.46	122	21
POINT	B	7.9	394	5.58	0.61	122	21
POINT	C	8.4	394	9.69	0.32	137	21
POINT	B	8.4	293	4.18	0.41	137	21
POINT	C	9.3	293	7.38	0.91	137	21
					Area (m^2)		
AREA	C	1.65			315	122	NA
AREA	D	1.5			600	137	NA

Notes:

Emission rates, in terms of tons MEK emitted per year, fall into the following categories:

VL = very low (<= 1)
A = 1 - 10
B = 10 - 50
C = 50 - 150
D = 150 - 200
E = 200 - 400

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Facility E15
Source Parameters for Modeling

** DRAFT **

Type	Emission Category	Hs (m)	Ts (K)	Vs (m/s)	Ds (m)	Distance to Fence (m)	Max GEP Ht. (m)
POINT	B	4.6	305	20.8	0.76	52	40
POINT	D	15.2	444	18	2.84	174	23

Notes:

Emission rates, in terms of tons MEK emitted per year, fall into the following categories:

VL = very low (<= 1)
A = 1 - 10
B = 10 - 50
C = 50 - 150
D = 150 - 200
E = 200 - 400

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Facility E17
Source Parameters for Modeling

** DRAFT **

Type	Emission Category	Hs (m)	Ts (K)	Vs (m/s)	Ds (m)	Distance to Fence (m)	Max GEP Ht. (m)
POINT	A	5.0	293	0.01	0.3	105	23.6
POINT	VL	6.1	293	0.01	0.3	105	23.6
POINT	VL	5.6	293	0.01	0.2	110	23.6
POINT	B	6.7	293	0.01	0.4	115	23.6
POINT	B	5.6	293	0.01	0.5	105	23.6
POINT	C	6.9	293	0.01	0.4	100	23.6
POINT	A	7.6	293	0.01	0.7	100	23.6
POINT	A	7.9	293	0.01	0.3	100	23.6
POINT	A	6.7	293	0.01	0.3	100	23.6
POINT	VL	6.7	293	0.01	0.3	110	23.6
POINT	B	6.2	293	2.5	0.2	56	51.8
POINT	C	6.6	293	5.1	0.4	60	51.8
POINT	C	6.3	293	7.6	0.3	52	45.8
POINT	B	6.3	293	4	0.2	46	51.8
POINT	C	6.7	293	1	0.3	49	51.8
POINT	VL	5.5	293	13.7	0.3	80	51.8
POINT	VL	5.3	293	1	0.9	105	23.6
POINT	VL	5.8	293	0.01	0.8	95	45.8
POINT	VL	6.7	293	0.01	0.5	100	23.6
POINT	VL	6.7	293	0.01	3.0	120	22.9
					Area (m^2)		
AREA	VL	1.5			18	100	NA
AREA	C	3.4			4184	50	NA

Notes:

Emission rates, in terms of tons MEK emitted per year, fall into the following categories:

VL = very low (<= 1)
A = 1 - 10
B = 10 - 50
C = 50 - 150
D = 150 - 200
E = 200 - 400

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Facility E20
Source Parameters for Modeling

** DRAFT **

Type	Emission Category	Hs (m)	Ts (K)	Vs (m/s)	Ds (m)	Distance to Fence (m)	Max GEP Ht. (m)
POINT	A	11.6	339	17.8	0.56	45	21
POINT	A	11.5	369	12.9	0.58	41	22
POINT	A	11.0	293	7.4	0.91	43	21
POINT	A	11.8	293	4	0.64	43	22
POINT	A	11.8	339	14.1	0.67	46	21
POINT	A	11.8	372	13.2	0.55	43	21
POINT	A	11.8	293	12.7	0.91	42	21
POINT	B	11.8	366	12.5	0.97	45	21
POINT	B	11.8	293	14.8	0.52	44	22
POINT	B	11.8	293	11.4	0.7	42	22
POINT	B	11.8	376	13	1	44	22
POINT	B	9.7	293	25.9	0.46	47	22
POINT	B	11.8	394	6.4	1.25	37	22
POINT	B	11.8	293	10.5	0.49	42	22
POINT	B	9.2	293	6.4	0.52	41	22
					Area (m^2)		
AREA	D	3.0			2500	50	NA

Notes:

Emission rates, in terms of tons MEK emitted per year, fall into the following categories:

VL = very low (<= 1)
A = 1 - 10
B = 10 - 50
C = 50 - 150
D = 150 - 200
E = 200 - 400

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Facility E21
Source Parameters for Modeling

** DRAFT **

Type	Emission Category	Hs (m)	Ts (K)	Vs (m/s)	Ds (m)	Distance to Fence (m)	Max GEP Ht. (m)
POINT	B	9.3	318	12.9	0.61	80	46
POINT	C	7.6	293	0	1.04	120	19
					Area (m^2)		
AREA	C	3.8			2100	65	NA

Notes:

Emission rates, in terms of tons MEK emitted per year, fall into the following categories:

VL = very low (<= 1)
A = 1 - 10
B = 10 - 50
C = 50 - 150
D = 150 - 200
E = 200 - 400

Facility E23

Source Parameters for Modeling

** DRAFT **

Type	Emission Category	Hs (m)	Ts (K)	Vs (m/s)	Ds (m)	Distance to Fence (m)	Max GEP Ht. (m)
POINT	A	6.1	305.4	16.33	0.81	115	43
POINT	A	6.1	305.4	16.33	0.81	160	43
					Area (m^2)		
AREA	E	15			12200	60	NA

Notes:

Emission rates, in terms of tons MEK emitted per year, fall into the following categories:

VL = very low (<= 1)

A = 1 - 10

B = 10 - 50

C = 50 - 150

D = 150 - 200

E = 200 - 400

Facility E25
Source Parameters for Modeling

** DRAFT **

Type	Emission Category	Ha (m)	Ts (K)	Vs (m/s)	Ds (m)	Distance to Fence (m)	GEP Ht. (m)
POINT	A	27.4	299	1.83	0.08	114	18
					Area (m²)		
AREA	VL	15.2			550	9	NA
AREA	D	3.1			3910	166	NA
AREA	E	3.1			8100	40	NA
AREA	VL	7.3			42	74	NA
AREA	VL	7.3			25	91	NA

Notes:

Emission rates, in terms of tons MEK emitted per year, fall into the following categories:

VL = very low (<= 1)
A = 1 - 10
B = 10 - 50
C = 50 - 150
D = 150 - 200
E = 200 - 400

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Facility E28
Source Parameters for Modeling

** DRAFT **

Type	Emission Category	Hs (m)	Ts (K)	Vs (m/s)	Ds (m)	Distance to Fence (m)	Max GEP Ht. (m)
POINT	B	4.9	297	0	1	30	19
POINT	B	4.9	297	0	1	40	19
POINT	B	4.9	297	0	1	30	19
POINT	B	4.9	297	0	1	30	19
POINT	B	4.9	297	0	1	25	19
POINT	B	4.9	297	0	1	25	19

Notes:

Emission rates, in terms of tons MEK emitted per year, fall into the following categories:

VL = very low (<= 1)
A = 1 - 10
B = 10 - 50
C = 50 - 150
D = 150 - 200
E = 200 - 400

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Facility E29
Source Parameters for Modeling

** DRAFT **

Type	Emission Category	Hs (m)	Ts (K)	Vs (m/s)	Ds (m)	Distance to Fence (m)	Max GEP Ht (m)
POINT	B	13.4	289	2.8	0.05	70	43
					Area (m²)		
AREA	E	8.5			650	88	NA

Notes:

Emission rates, in terms of tons MEK emitted per year, fall into the following categories:

VL = very low (<= 1)
A = 1 - 10
B = 10 - 50
C = 50 - 150
D = 150 - 200
E = 200 - 400

Facility E32
Source Parameters for Modeling

** DRAFT **

Type	Emission Category	Hs (m)	Ts (K)	Vs (m/s)	Ds (m)	Distance to Fence (m)	Max GEP Ht. (m)
POINT	E	15.2	789	24.7	1.98	50	38
					Area (m^2)		
AREA	VL	1.0			576	50	NA
AREA	VL	1.5			0.25	50	NA
AREA	VL	1.5			110	50	NA
AREA	VL	1.5			36	50	NA
AREA	VL	1.0			576	50	NA

Notes:

Emission rates, in terms of tons MEK emitted per year, fall into the following categories:

VL = very low (<= 1)
A = 1 - 10
B = 10 - 50
C = 50 - 150
D = 150 - 200
E = 200 - 400