

Blue Source's Assertion of GHG Emission Reductions from JB Hunt's Intermodal Transport Project

(January – July 2010)



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1.0 Introduction

In 2008, a project protocol¹ was developed in accordance with International Standards Organization (ISO) 14064 guidelines (ISO 2006b) documenting the methodology used to determine the greenhouse gas emission reductions (ERs) associated with the J.B. Hunt's Intermodal (JBI) project. It included the calculated ERs from the project during the Oct. 2006 – Sep. 2008 time-period. Emission reductions during this period totaled 3.2 million metric tonnes of CO₂e. The methodology and ERs were validated and verified by an independent 3rd party verification company consistent with the verification requirements of ISO 14064. The project is registered on the Canadian Standards Association's (CSA's) GHG CleanProjects™ Registry. Project documents are available at the registry website at <http://www.ghgregistries.ca/cleanprojects>

This GHG assertion includes the ERs associated with the project for the Jan. - Dec. 2010 time-period. An assertion of the ERs for Oct. 2008 – Dec. 2009 time period is included in a separate document. The ERs are calculated in accordance with the validated procedures contained in the project protocol.

2.0 Data Monitoring and Reporting

There have been no changes to the data monitoring, collection, and reporting procedures of data obtained from JB Hunt. The equations used to calculate ERs from the project also remain the same.

Information from a recent article² published in May 2010 was used as the basis for the calculation of the baseline intermodal percentage for the industry. Intermodal transportation's share of U.S. long-haul truck traffic (550 miles or more) hit a record high of 13.5 percent during the first quarter of 2010. Previous 2008 data indicated this value as 10.3 percent. The baseline value for all of 2010 was set at 13.5 percent.

To meet buyer requirements, a breakdown of the calculated ERs by State was performed. The breakdown was determined from the percentage of miles traveled within each State. The procedures used are explained in Attachment A.

¹ Blue Source's Greenhouse Gas Emission Reduction Protocol for JB Hunt's Intermodal Transport Project, December 2008

² Intermodal shipping: FTR says intermodal making its presence felt, Logistics Management, May 26, 2010

3.0 Summary of Emission Reductions

Baseline emissions (BE), project emissions (PE) and emission reductions (ERs) were calculated using validated procedures described in the project protocol. A monthly breakdown is shown in Table 1. A total of 1.1 million metric tonnes of ERs were created during the Jan. – Jul. 2010 time-period.

Table 2 shows a breakdown of the ERs by State using procedures outlined in Attachment A. The data and calculation spreadsheets and relevant supporting information are being provided for verification to an independent third party verification body accredited under the American National Standard Institute's Greenhouse Gas Accreditation Program.

Table 1 Summary of Baseline Emissions, Project Emissions, and Emission Reductions for Jan. – Jul. 2010 time period (tonnes CO₂e)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	TOTAL (JAN-JUL)
Baseline Truck	250,566	253,969	289,552	270,360	266,417	292,393	291,272	1,914,529
Baseline Intermodal (train+dray truck)	16,062	16,332	19,435	18,379	18,207	19,291	19,047	126,753
Total Baseline (BE)	266,628	270,301	308,987	288,740	284,624	311,684	310,318	2,041,282
Project Intermodal (train)	84,741	87,131	104,818	99,879	98,536	103,978	103,179	682,261
Project Intermodal (dray truck)	34,237	33,844	39,147	36,265	36,334	38,917	37,907	256,649
TOTAL Project (PE)	118,977	120,975	143,964	136,143	134,870	142,894	141,086	938,910
Emission Reductions (ER)	147,650	149,326	165,023	152,596	149,755	168,790	169,232	1,102,372

Table 2. Monthly Emission Reductions Breakdown by State (tonnes CO₂e)

STATE	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	TOTAL
AL	1,244	1,231	1,443	1,114	1,235	1,487	1,513	9,268
AZ	14,422	14,461	16,398	14,848	14,415	16,261	16,332	107,136
AR	5,314	5,441	6,028	5,491	5,492	5,994	6,172	39,933
CA	9,513	9,694	10,721	9,622	9,403	10,939	11,271	71,162
CO	5,430	5,708	6,119	5,621	5,655	6,359	6,224	41,116
CT	149	155	195	182	198	210	220	1,308
DE	-	-	-	-	-	-	-	-
DC	0.05	0.08	0.05	0.04	0.04	-	0.05	0
FL	647	682	763	649	602	595	691	4,629
GA	-	-	-	-	-	-	-	-
ID	2,272	2,196	2,380	2,258	2,058	2,376	2,224	15,764
IL	2,979	2,879	3,124	2,999	2,836	3,435	3,723	21,974
IN	1,668	1,774	2,077	1,826	1,905	2,102	1,868	13,220
IA	5,131	5,280	5,666	5,529	5,349	6,054	5,988	38,997
KS	1,327	1,331	1,508	1,186	1,328	1,629	1,418	9,726
KY	995	1,091	1,149	1,096	1,180	1,160	1,187	7,859
LA	655	706	854	749	738	786	904	5,391
ME	-	-	-	-	-	-	-	-
MD	485	495	630	596	612	641	611	4,070
MA	-	-	-	-	-	-	-	-
MI	-	-	-	-	-	-	-	-
MN	1,204	1,237	1,101	1,036	985	1,052	1,209	7,824
MS	722	773	865	811	821	1,007	976	5,976
MO	4,987	5,114	5,725	5,394	5,281	5,994	5,883	38,378
MT	5,101	5,040	4,731	4,383	4,367	4,898	5,108	33,627
NE	8,799	8,920	9,726	9,520	9,160	10,180	9,968	66,273
NV	4,107	4,090	4,603	4,359	4,327	4,868	4,849	31,202
NH	-	-	-	-	-	-	-	-
NJ	73	69	67	68	39	41	45	402
NM	12,990	13,003	14,870	13,462	13,067	14,783	14,761	96,935
NY	406	461	433	378	465	467	579	3,190
NC	559	541	560	550	557	579	660	4,007
ND	1,797	1,755	1,609	1,500	1,481	1,542	1,718	11,401
OH	5,034	4,992	5,837	5,350	5,378	5,968	5,777	38,336
OK	9,657	9,527	11,115	10,055	9,680	10,886	10,927	71,847
OR	1,917	1,888	2,072	2,014	1,769	2,060	1,855	13,576
PA	4,100	4,025	4,678	4,240	4,172	4,883	4,716	30,815
RI	11	12	13	12	13	12	11	84
SC	230	186	261	319	414	377	381	2,169
SD	1,372	1,380	1,370	1,250	1,264	1,613	1,474	9,723
TN	5,496	5,646	6,483	6,089	6,121	6,626	6,687	43,147
TX	10,265	10,525	11,744	10,664	10,318	11,595	12,071	77,181
UT	6,164	6,311	6,872	6,471	6,371	7,184	7,027	46,401
VT	4	3	7	4	1	-	3	24
VA	2,090	2,292	2,585	2,523	2,641	2,857	2,885	17,874
WA	1,631	1,602	1,390	1,286	1,191	1,493	1,593	10,186
WV	381	410	484	472	505	517	519	3,287
WI	441	566	277	377	371	410	661	3,105
WY	5,884	5,831	6,490	6,243	5,989	6,870	6,541	43,848
TOTAL	147,650	149,326	165,023	152,596	149,755	168,790	169,232	1,102,372

ATTACHMENT A

Procedures to Split Total ERs by State

Emissions generated by the project in each State are proportional to the miles traveled in that State. Therefore each emission source shown in Table 1, calculated monthly emissions were split among the states based on the miles traveled within each State. The following procedures were used to calculate the breakdown of miles traveled in each State. The source of emissions to which each step is applied is also indicated.

Step A: Calculate road miles traveled by state based on load origin and destination cities:

Under the baseline, the majority of JBI loads would have been transported by truck using the most practical route between the origin and destination cities. In this step, the mileage between all pairs of origin and destination cities are aggregated by State and are used to calculate the splits for “Baseline Truck” source of emissions.

Key Assumptions:

- Use PCMIler 21 to estimate highway miles by state.
- Select single month to run.
- The Norfolk Southern Toledo, OH ramp zip code 43602 is not recognized by PCMIler 21. Used zip 43601 as a substitute.
- Loads moving to/from Canadian ramps are included in the monthly spreadsheet data for the Intermodal Project. They are excluded from this process because Canadian Postal Codes are not recognized in PCMIler BatchPro.

Process:

- Use Access database IMMilesByState.mdb (Enginesrv\Intermodal\ Blue Source \ IMMilesByState\)
- Develop the following queries:
 - Qry 007 Train Load by Orig and Dest for Batch 2010
 - Creates table tblDetail
 - List of origin and destination pair zip codes (one record for each load [not empty])
 - Numerous queries to replace invalid zip codes.
 - Open qry 031... can change create table name (tblIMMYYYYODPairs).
- Run macro macReplace Zips ODPairs
 - Create table tblIMMYYYY ODPairs
 - Excludes all ramp pairs with a Canadian postal code as the origin or destination
- Export tblIMMYYYY ODPairs as tab delimited text file with no text qualifiers. Put file in Enginesrv\Intermodal\ Blue Source \ IMMilesByState\ tblIMMYYYY ODPairs.txt

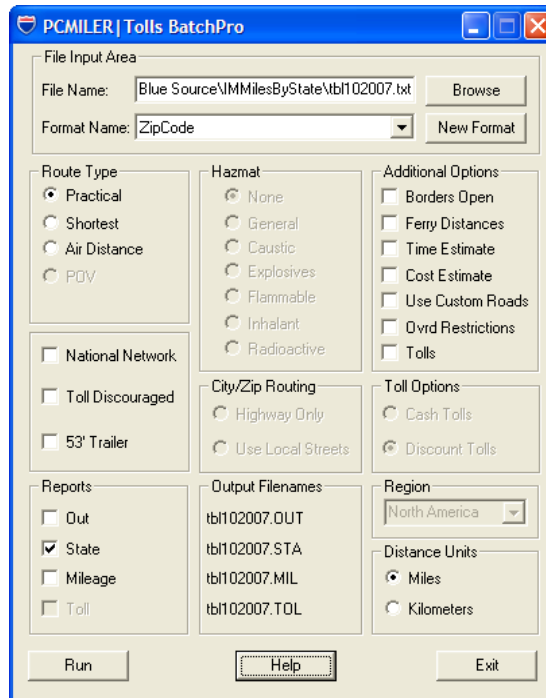


Figure A-1 Sample PC miler BatchPro GUI screen

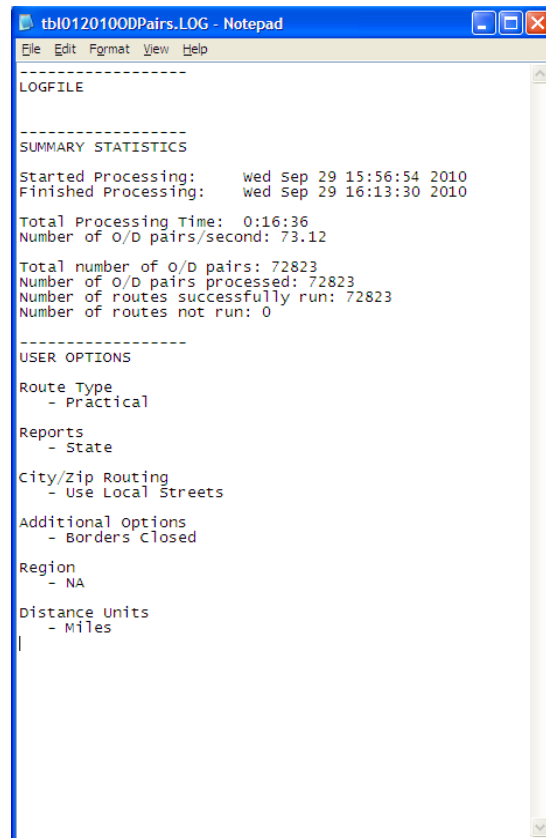


Figure A-2 Step A Batch Process Log for January 2010

No errors were generated during the batch process.

Batch Process Results:

Column Headers in Results file

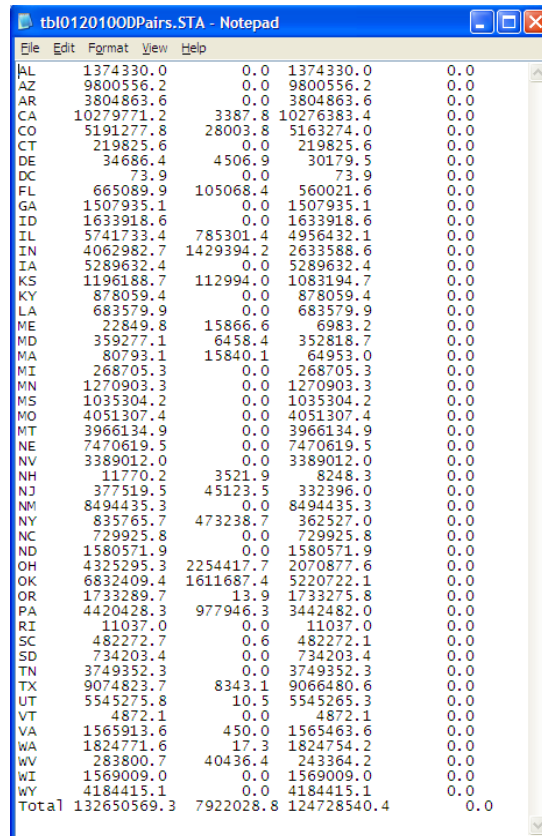
Column 1: State

Column 2: Total Miles

Column 3: Toll Miles

Column 4: Freeway Miles

Column 5: Ferry Miles



State	Total Miles	Toll Miles	Freeway Miles	Ferry Miles
AL	1374330.0	0.0	1374330.0	0.0
AZ	9800556.2	0.0	9800556.2	0.0
AR	3804863.6	0.0	3804863.6	0.0
CA	10279771.2	3387.8	10276383.4	0.0
CO	5191277.8	28003.8	5163274.0	0.0
CT	219825.6	0.0	219825.6	0.0
DE	34686.4	4506.9	30179.5	0.0
DC	73.9	0.0	73.9	0.0
FL	665089.9	105068.4	560021.6	0.0
GA	1507935.1	0.0	1507935.1	0.0
ID	1633918.6	0.0	1633918.6	0.0
IL	5741733.4	785301.4	4956432.1	0.0
IN	4062982.7	1429394.2	2633588.6	0.0
IA	5289632.4	0.0	5289632.4	0.0
KS	1196188.7	112994.0	1083194.7	0.0
KY	878059.4	0.0	878059.4	0.0
LA	683579.9	0.0	683579.9	0.0
ME	22849.8	15866.6	6983.2	0.0
MD	359277.1	6458.4	352818.7	0.0
MA	80793.1	15840.1	64953.0	0.0
MI	268705.3	0.0	268705.3	0.0
MN	1270903.3	0.0	1270903.3	0.0
MS	1035304.2	0.0	1035304.2	0.0
MO	4051307.4	0.0	4051307.4	0.0
MT	3966134.9	0.0	3966134.9	0.0
NE	7470619.5	0.0	7470619.5	0.0
NV	3389012.0	0.0	3389012.0	0.0
NH	11770.2	3521.9	8248.3	0.0
NJ	377519.5	45123.5	332396.0	0.0
NM	8494435.3	0.0	8494435.3	0.0
NY	835765.7	473238.7	362527.0	0.0
NC	729925.8	0.0	729925.8	0.0
ND	1580571.9	0.0	1580571.9	0.0
OH	4325295.3	2254417.7	2070877.6	0.0
OK	6832409.4	1611687.4	5220722.1	0.0
OR	1733289.7	13.9	1733275.8	0.0
PA	4420428.3	977946.3	3442482.0	0.0
RI	11037.0	0.0	11037.0	0.0
SC	482272.7	0.6	482272.1	0.0
SD	734203.4	0.0	734203.4	0.0
TN	3749352.3	0.0	3749352.3	0.0
TX	9074823.7	8343.1	9066480.6	0.0
UT	5545275.8	10.5	5545265.3	0.0
VT	4872.1	0.0	4872.1	0.0
VA	1565913.6	450.0	1565463.6	0.0
WA	1824771.6	17.3	1824754.2	0.0
WV	283800.7	40436.4	243364.2	0.0
WI	1569009.0	0.0	1569009.0	0.0
WY	4184415.1	0.0	4184415.1	0.0
Total	132650569.3	7922028.8	124728540.4	0.0

Figure A-3 Step A Results for January 2010

Step B: Calculate miles traveled by state based on rail ramp-to-ramp pairs

Under the project condition, JBI loads are transported by truck (dray) to a rail ramp nearest to the point of origin and dispatched by rail to the ramp nearest the point of destination. There may be some intermediate ramp-to-ramp transfers. Loads are finally delivered from the destination ramp to the customer via dray truck. In this step, the mileage between all ramp pairs used by JBI are aggregated by state and used to calculate the splits for “Project Intermodal (train)” source of emissions. Project Dray miles are aggregated in Step C.

The results of this step were also used to calculate the splits for the “Baseline Intermodal (train + dray truck)” source of emissions. As indicated in Section 2, a small percentage of

the loads about 13.5 percent would have been transported via intermodal under the baseline. Since baseline intermodal emissions are about 10 percent of total ERs, and dray emissions are about 30 percent of total baseline intermodal emissions, baseline intermodal dray emissions are only about 3 percent of the total ERs. Therefore using this Step to split baseline dray emissions (instead of Step C) does not materially affect the ER splits.

Key Assumptions:

- Use PCMiler 21 to estimate rail miles by state
- Select single month to run.
- The Norfolk Southern Toledo, OH ramp zip code 43602 is not recognized by PCMiler 21. Used zip 43601 as a substitute.
- Loads moving to/from Canadian ramps are included in the monthly spreadsheet data for the Intermodal Project. They are excluded from this process because Canadian Postal Codes are not recognized in PCMiler BatchPro.

Process:

- Create Access database IMMilesByState.mdb (Enginesrv\Intermodal\ Blue Source \ IMMilesByState\)
- Use QMF query Blue_Source_Q4_IMT as a guide (match the criteria used in the monthly spreadsheet data) to create query qry Train Load by Ramp Pair for Batch 2010.
- Develop the following queries and run them in order:
 - Qry 005 Train Load by Ramp Pair for Batch 2010
 - Creates table tblDetail
 - List of origin and destination ramp pair zip codes (one record for each load [not empty] moved between the ramp pair)
 - Qry 010 Change Orig Zip 43602 to 43601
 - Replaces all origin 43602 zips with 43601 since 43602 is invalid in PCMiler (238 records changed)
 - Qry 020 Change Dest Zip 43602 to 43601
 - Replaces all destination 43602 zips with 43601 (300 records changed)
 - Qry 030 Eliminate Canadian Zips
 - Create table tblIMMYYYY (change output table name)
 - Excludes all ramp pairs with a Canadian postal code as the origin or destination
 - Export tblIMMYYYY as tab delimited text file with no text qualifiers. Put file in Enginesrv\Intermodal\ Blue Source \ IMMilesByState\ tblIMMYYYY.txt
- Run PCMiler Batch Pro
 - Borders Open not checked will prevent US origin/destination loads from crossing into Canada.
 - Run PCMiler Practical routes.
 - Generate the State mileage report with distances in miles.

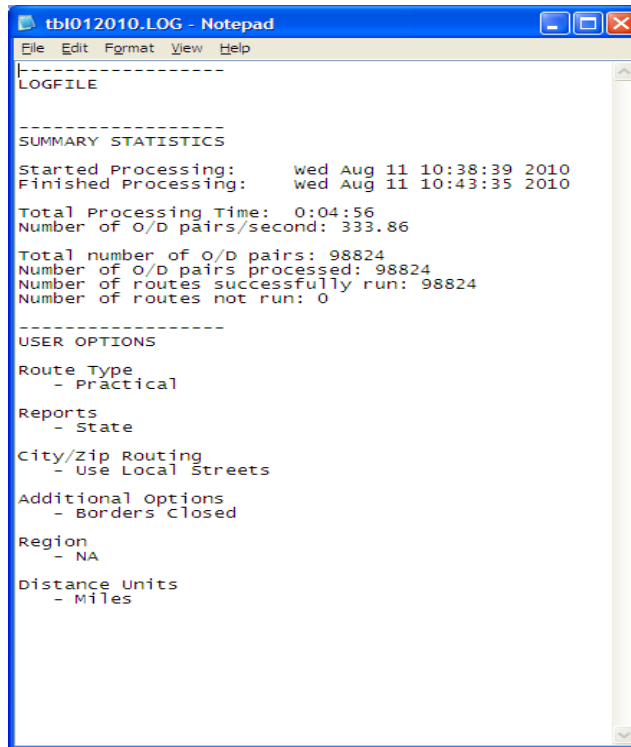


Figure A-4 Step B Batch Process Log for January 2010

No errors were generated during the batch process.

Batch Process Results:

State	Col 1	Col 2	Col 3	Col 4	Col 5
AL	1853032.4	0.0	1853032.4	0.0	0.0
AZ	7576309.1	0.0	7576309.1	0.0	0.0
AR	2803192.8	0.0	2803192.8	0.0	0.0
CA	10042431.0	0.0	10042431.0	0.0	0.0
CO	8332074.3	0.0	8332074.3	0.0	0.0
CT	144549.9	0.0	144549.9	0.0	0.0
DE	25571.5	2310.9	23260.6	0.0	0.0
FL	578871.7	78191.2	500680.3	0.0	0.0
GA	1585119.5	0.0	1585119.5	0.0	0.0
ID	1549383.8	0.0	1549383.8	0.0	0.0
IL	7557892.7	778467.1	6779425.6	0.0	0.0
IN	4729729.7	2749396.9	1980332.9	0.0	0.0
IA	7645183.9	0.0	7645183.9	0.0	0.0
KS	1114320.1	119243.7	995076.4	0.0	0.0
KY	753762.3	0.0	753762.3	0.0	0.0
LA	725617.1	0.0	725617.1	0.0	0.0
MD	144241.3	4883.1	139358.1	0.0	0.0
MA	79644.5	18652.3	60992.1	0.0	0.0
MN	1702863.3	0.0	1702863.3	0.0	0.0
MS	1361419.7	0.0	1361419.7	0.0	0.0
MO	2097682.2	0.0	2097682.2	0.0	0.0
MT	4589863.8	0.0	4589863.8	0.0	0.0
NE	10225190.2	0.0	10225190.2	0.0	0.0
NV	4337932.6	0.0	4337932.6	0.0	0.0
NJ	362759.9	62644.7	300115.2	0.0	0.0
NM	5721139.7	0.0	5721139.7	0.0	0.0
NY	986396.8	228197.1	758199.6	0.0	0.0
NC	506011.2	0.0	506011.2	0.0	0.0
ND	2297430.9	0.0	2297430.9	0.0	0.0
OH	4827430.7	3511047.9	1316382.8	0.0	0.0
OK	4722644.7	870824.3	3851820.4	0.0	0.0
OR	1612152.0	0.0	1612152.0	0.0	0.0
PA	4950104.2	596637.3	4353466.9	0.0	0.0
SC	508370.9	0.0	508370.9	0.0	0.0
TN	1485380.1	0.0	1485380.1	0.0	0.0
TX	8200722.2	22822.0	8177900.2	0.0	0.0
UT	8213741.3	0.0	8213741.3	0.0	0.0
VA	988985.4	0.0	988985.4	0.0	0.0
WA	1935342.0	0.0	1935342.0	0.0	0.0
WV	198409.3	41467.0	156942.2	0.0	0.0
WI	2058182.6	0.0	2058182.6	0.0	0.0
WY	3837937.2	0.0	3837937.2	0.0	0.0
Total	134971020.8	9084785.7	125886235.1	0.0	0.0

Figure A-5 Step B Results for January 2010

Step C: Calculate dray miles traveled by State based on load origin-destination and rail ramps.

Under the project condition, dray miles occur in those states where JBI or contractor trucks pick up and deliver loads between customer locations and rail ramps. In this step the miles traveled by dray trucks in each State are aggregated and are used to calculate the splits for “Project Intermodal (dray truck)” source of emissions.

Key Assumptions:

- Use PCMiller 21 to estimate dray miles by state.
- Select single month to run.
- The Norfolk Southern Toledo, OH ramp zip code 43602 is not recognized by PCMiller 21. Used zip 43601 as a substitute.
- Loads moving to/from Canadian ramps are included in the monthly spreadsheet data for the Intermodal Project. They are excluded from this process because Canadian Postal Codes are not recognized in PCMiller BatchPro.

Process:

- Use Access database IMMilesByState.mdb (Enginesrv\Intermodal\ Blue Source \ IMMilesByState\)
- Develop the following queries:
 - Qry 008 Train Load Shipper to Orig Ramp for Batch 2010
 - Qry 009 Train Load Dest Ramp to Receiver for Batch 2010
 - Populates table tblDetail
 - Numerous queries to replace invalid zip codes.
 - Open qry 031 and change output file name (tblIMMYYYY Dray Pairs).
- Run macro macReplace Zip Dray Pairs
 - Create table tblIMMYYYY DrayPairs
 - Export tblIMMYYYY DrayPairs as tab delimited text file with no text qualifiers. Put file in Enginesrv\Intermodal\ Blue Source \ IMMilesByState\ tblIMMYYYY DrayPairs.txt
- Run the text file through PCMiller BatchPro.

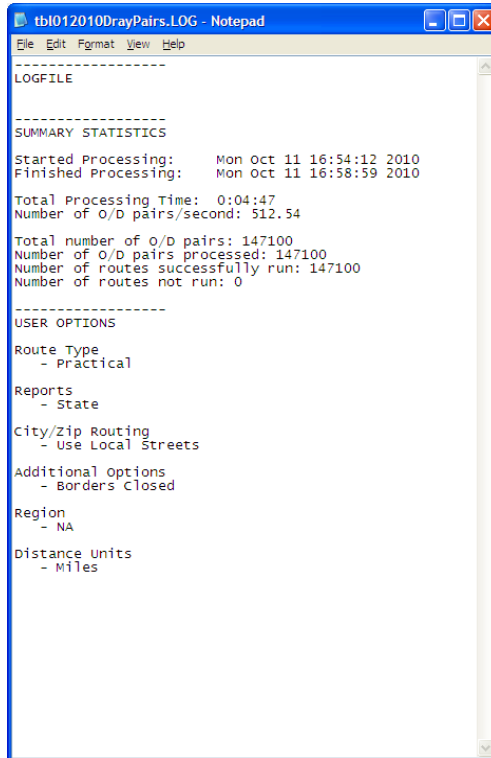


Figure A-6 Step C Batch Process Log for January 2010

tbl012010DrayPairs.STA - Notepad

AL	128578.9	0.0	128578.9	0.0
AZ	25421.7	0.0	25421.7	0.0
AR	126443.1	0.0	126443.1	0.0
CA	1526147.4	59.6	1526087.8	0.0
CO	25085.9	0.0	25085.9	0.0
CT	62293.8	0.0	62293.8	0.0
DE	22355.2	4102.4	18252.8	0.0
DC	29.4	0.0	29.4	0.0
FL	99987.7	7182.9	92804.8	0.0
GA	1025835.9	0.0	1025835.9	0.0
ID	416.2	0.0	416.2	0.0
IL	1297606.4	360192.1	937414.3	0.0
IN	1165141.7	140470.6	1024671.1	0.0
IA	297582.2	0.0	297582.2	0.0
KS	114259.1	17097.6	97161.5	0.0
KY	87110.5	0.0	87110.5	0.0
LA	84585.1	2.1	84583.0	0.0
ME	22876.8	15842.6	7034.2	0.0
MD	37530.2	82.0	37448.2	0.0
MA	67565.0	11099.5	56465.6	0.0
MI	273167.2	0.0	273167.2	0.0
MN	103279.6	0.0	103279.6	0.0
MS	173403.7	0.0	173403.7	0.0
MO	502321.6	0.0	502321.6	0.0
NE	4483.5	0.0	4483.5	0.0
NV	13871.9	0.0	13871.9	0.0
NH	16218.3	6024.0	10194.3	0.0
NJ	148058.3	53813.0	94245.3	0.0
NM	695.9	0.0	695.9	0.0
NY	216694.2	76484.5	140209.7	0.0
NC	181042.2	0.0	181042.2	0.0
ND	2.6	0.0	2.6	0.0
OH	203298.8	21731.4	181567.5	0.0
OK	240737.2	63345.2	177392.1	0.0
OR	167763.0	0.0	167763.0	0.0
PA	548632.8	20749.4	527883.4	0.0
RI	3089.8	0.0	3089.8	0.0
SC	136561.1	0.0	136561.1	0.0
TN	250668.9	0.0	250668.9	0.0
TX	843289.5	16409.9	826879.5	0.0
UT	20797.6	0.0	20797.6	0.0
VT	1519.4	0.0	1519.4	0.0
VA	111072.1	648.0	110424.0	0.0
WA	264461.5	0.0	264461.5	0.0
WV	16269.9	0.0	16269.9	0.0
WI	478482.2	0.0	478482.2	0.0
WY	1089.7	0.0	1089.7	0.0
Total	11137824.8	815336.8	10322488.0	0.0

Figure A-7 Step C Results for January 2010

Step D. Split total emissions based on miles traveled in each State

Emissions from each source shown in Table 1 are split by State using the following equation

$$E_{i,j,k} = (SM_{i,j}) / (TM_j) \times ES_{j,k}$$

where,

$E_{i,j,k}$ = Emissions in State i during month j from source k (tonnes CO₂e)

$SM_{i,j}$ = Total miles traveled in State i during month j using appropriate STEP A,B, or C

TM_j = Total miles traveled in all states during month j using same STEP A, B, or C

$ES_{j,k}$ = Total emissions in month j from source k (tonnes CO₂e)

Tables A-1 to A-7 show the calculated monthly emissions from each source by State. Calculated ERs and the ERs corrected for leakage (described below) are also shown in the tables.

Example Calculation

As an example, calculations for the State of Alabama during Jan 2010 are outlined below.

Baseline truck emissions are calculated using mileage splits from Step A (Figure A-3)

$$\begin{aligned} E_{AL, Jan2010, baseline\ truck} &= 1,374,330 / 132,650,569.3 \times 250,566 \\ &= 2,596 \text{ tonnes CO}_2\text{e} \end{aligned}$$

Baseline Intermodal emissions are calculated using data from Step B (Figure A-5)

$$\begin{aligned} E_{AL, Jan2010, baseline\ intermodal} &= 1,853,032.4 / 134,971,020.8 \times 16,062 \\ &= 221 \text{ tonnes CO}_2\text{e} \end{aligned}$$

Project Intermodal emissions are calculated using data from Step B (Figure A-5)

$$\begin{aligned} E_{AL, Jan2010, project\ intermodal} &= 1,853,032.4 / 134,971,020.8 \times 84,741 \\ &= 1,163 \text{ tonnes CO}_2\text{e} \end{aligned}$$

Project Dray emissions are calculated using data from Step C (Figure A-7)

$$\begin{aligned} E_{AL, Jan2010, project\ intermodal} &= 128,578.9 / 11,137,824.8 \times 34,237 \\ &= 395 \text{ tonnes CO}_2\text{e} \end{aligned}$$

Emission Reductions are calculated as the difference between baseline and project emissions. Accordingly,

$$\begin{aligned} ER_{AL, Jan2010} &= (2,596 + 221) - (1,163 + 395) \\ &= 1,258 \text{ tonnes CO}_2\text{e} \end{aligned}$$

A similar procedure was used to calculate ERs for the other states.

Leakage Correction

While ERs in Alabama are positive, the transport of JBI loads via intermodal can cause small emission increases in other States when compared to the baseline (leakage). For example in the State of Georgia, the Atlanta ramp is a major hub for intermodal traffic. This results in increased drayage transport emissions within the State from the movement of goods from neighboring states that use this hub. The net effect is an emission increase in Georgia.

Total leakage emissions are small (~1 percent of total ERs). To account for these emission increases, the calculated ERs for each state with an emission increase (i.e. negative ER) was set to zero and the ERs for each of the remaining states were corrected downward in proportion to its share of the total ERs. The total ERs across all states remained unchanged. The corrected ERs by state are also shown in Tables A-1 to A-7.

As shown in Table A-1 for January 2010, a total of 149,261 tonnes CO₂e of emission decreases (positive ERs) and a total of 1,610 tonnes CO₂e of emission increases (negative ERs) were generated. The ERs for Alabama were corrected as

$$\begin{aligned}\text{Corrected ER}_{AL, \text{Jan}2010} &= 1,258 - 1,258 / 149,261 \times 1,610 \\ &= 1,244 \text{ tonnes CO}_2\text{e}\end{aligned}$$

The corrected ERs for each State are reported in the GHG assertion in Table 2 of this report

