Appendix 4-7

Approval Order, Air Quality

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY

Norman H. Bangerter
Governor
Kenneth L. Alkema
Executive Director
F. Burnell Cordner
Director

1950 West North Temple
Salt Lake City, Utah
(801) 536-4000
(801) 536-4099 FAX

Reply to: State of Utah
Division of Air Quality
Department of Environmental Quality
Salt Lake City, Utah 84114-4820

DAQE-108-92

February 3, 1992

R. Jay Marshall
Genwal Coal Company
P. O. Box 1201
Huntington, Utah 84528

Re: Approval Order for an Increase in Production
Emery County CDS B ATT NSPS

Dear Mr. Marshall:

The above-referenced project has been evaluated and found to be consistent with the requirements of the Utah Air Conservation Rules (UACR) and the Utah Air Conservation Act. A 30-day public comment period was held and all comments received were evaluated. The conditions of this Approval Order (AO) reflect any changes to the proposed conditions which resulted from the evaluation of the comments received. This air quality AO authorizes the project with the following conditions and failure to comply with any of the conditions may constitute a violation of this order:

1. Genwal Coal Company, with offices located at Crandall Canyon and the mine site located at Crandall Canyon shall operate the materials handling system according to the information submitted in the Notice of Intent dated September 12, 1991 and submitted to the Executive Secretary.

   The changes covered in this AO are as follows:

   A. An increase in production from 360,000 tons per year up to 1,500,000 tons per year

   B. Elimination of a diesel generator

   C. Paving of the haul road

   A copy of this AO shall be posted on site and shall be available to the employees who operate the air emission producing equipment. All employees who operate the air emission producing equipment shall receive instruction as to their responsibilities in operating the equipment in compliance with all of the relevant conditions.

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2. The approved installations shall consist of the following equipment:

   A. A Grizzly
   B. Two (2) Crushers
   C. A Storage Silo
   D. A Wheeled Loader
   E. A Coal Stockpile
   F. A Conveyor System
   G. Loadout to Highway Vehicles

3. This AO shall replace the AO dated November 2, 1988.

4. Visible emissions from any point or fugitive emission source associated with the installation or control facilities shall not exceed 20% opacity. Opacity observations of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9. Visible emissions from mobile sources and intermittent sources shall use procedures similar to Method 9, but the requirement for observations to be made at 15 second intervals over a six minute period shall not apply. Any time interval with no visible emissions shall not be included.

   Visible emissions from haul road traffic shall not exceed 20% opacity. Visible emissions determinations for traffic sources shall use procedures similar to Method 9, but the requirement for observations to be made at 15 second intervals over a six minute period shall not apply. Six points, distributed along the length of the haul road, shall be chosen by the Executive Secretary or his representative. An opacity reading shall be made at each point when a vehicle passes the selected points. Opacity readings shall be made ½ vehicle length or greater behind the vehicle. The accumulated six readings shall be averaged for the compliance value.

5. The coal production shall not exceed 1,500,000 tons per 12-month period without prior approval in accordance with R446-1-3.1, UAC. Compliance with the annual limitation shall be determined on a rolling 12-month total. Based on the first day of each month a new 12-month total shall be calculated using the previous 12 months. Records of production shall be kept for all periods when the plant is in operation. Records of production shall be made available to the Executive Secretary or his representative upon request and shall include a period of two years ending with the date of the request. Production shall be determined by examination of company sales records and production records. The records shall be kept on a daily basis.

6. All unpaved roads and other unpaved operational areas which are used by mobile equipment shall be water sprayed and/or chemically treated to reduce fugitive dust. Control is required at all times (24 hours per day every day) for the duration of the project/operation. If chemical treatment is to be used, the plan must be approved by the Executive Secretary. Records of water treatment shall be kept for all periods when the plant is in operation. The records shall include the following items:

A. Date
B. Number of treatments made
C. Rainfall received, if any, and approximate amount
D. Time of day treatments were made

Records of treatment shall be made available to the Executive Secretary upon request and shall include a period of two years ending with the date of the request.

7. The haul road shall be paved and shall be periodically swept or sprayed clean as dry conditions warrant or as determined necessary by the Executive Secretary. Records of cleaning of the paved road shall be made available to the Executive Secretary or his representative upon request and shall include a period of two years prior to the date of request.

8. Water sprays shall be installed at the following points to control fugitive emissions:

A. All crushers
B. All screens
C. All conveyor transfer points
D. All stockpiles
E. All operation areas

The sprays shall operate whenever dry conditions warrant or as determined necessary by the Executive Secretary.

9. In addition to the requirements of this AO, <u>all provisions of 40 CFR 60, NSPS Subparts A and Y apply to the affected facilities of this installation</u>.

10. For sources which are subject to NSPS, visible emission observations which are performed during the initial compliance inspection shall consist of 30 observations of six minutes each in accordance with 40 CFR 60, Appendix A, Method 9. It is the responsibility of the owner/operator of the source(s) to supply these observations to the Executive Secretary. Emission points which are subject to NSPS shall include the following:

A. Coal processing and conveying equipment (includes breakers and crushers)

B. Coal storage systems

C. Coal transfer and loading systems

11. The moisture content of the material shall be maintained at a value of no less than <u>6% by weight</u>. The moisture content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

12. The following limits shall apply to the storage pile:

    A. Size not to exceed 3000 tons
    B. Throughput not to exceed 285,000 tons per 12-month period

    The storage piles shall be watered to minimize generation of fugitive dusts as dry conditions warrant or as determined necessary by the Executive Secretary.

    Compliance with the annual limitation shall be determined on a rolling 12-month total. Based on the first day of each month a new 12-month total shall be calculated using the previous 12 months. Records of throughput shall be kept for all periods when the plant is in operation. Records of throughput shall be made available to the Executive Secretary or his representative upon request and shall include a period of two years ending with the date of the request. Throughput shall be determined by examination of records of pile throughput which shall be kept by management. The records shall be kept on a daily basis.

13. All records referenced in this AO or in an applicable NSPS or NESHAPS, which are required to be kept by the owner/operator, shall be made available to the Executive Secretary or his representative upon request.

14. All installations and facilities authorized by this AO shall be adequately and properly maintained. The owner/operator shall comply with R446-1-4.7, UAC. R446-1-4.7, UAC addresses unavoidable breakdown reporting requirements. The owner/operator shall calculate/estimate the excess emissions whenever a breakdown occurs. The sum total of excess emissions shall be reported to the Executive Secretary for each calendar year no later than January 31 of the following year.

15. The Executive Secretary shall be notified in writing upon start-up of the installation, as an initial compliance inspection is required. Eighteen months from the date of this AO the Executive Secretary shall be notified in writing of the status of construction/installation if construction/installation is not completed. At that time the Executive Secretary shall require documentation of the continuous construction/installation of the operation and may revoke the AO in accordance with R446-1-3.1.5, UAC.

Any future modifications to the equipment approved by this order must also be approved in accordance with R446-1-3.1.1, UAC.

This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including the Utah Air Conservation Rules.

Annual emissions for this source (the entire plant) are currently calculated at the following values:

A. 13.91 tons/yr for Particulate
B. 5.57 tons/yr for PM_{10}
C. 0.39 tons/yr for SO_2
D. 4.02 tons/yr for NO_x
E. 0.54 tons/yr for VOC
F. 1.23 tons/yr for CO
G. 0.09 tons/yr for Aldehydes

These calculations are for the purposes of determining the applicability of PSD and nonattainment area major source requirements of the UAC. They are not to be used for purposes of determining compliance.

Sincerely,

F. Burnell Cordner

F. Burnell Cordner, Executive Secretary
Utah Air Quality Board

FBC:DJ:cl

cc: EPA Region VIII, Mike Owens
SouthEastern Utah District Health Department

GENWAL COAL COMPANY

RECEIVED
SEP 12 1991
AIR QUALITY

Pride & Performance

GENWAL COAL CO.

CRANDALL CANYON MINE

Huntington, Utah

LETTER OF INTENT

BUREAU OF AIR QUALITY

September 12, 1991

GENWAL COAL COMPANY

RECEIVED
SEP 12 1991
AIR QUALITY

September 16, 1991

F. Burnell Cordner, Director
Bureau of Air Quality
1950 West North Temple
P.O. Box 16690
Salt Lake City, Utah 84116-0690

Dear Mr. Cordner:

At this time Genwal Coal Company would like to submit this Notice Of Intent to expand our production and modify our surface facilities to handle the increase in production. In addition, this Notice of Intent will reflect the upgrades to our power system and haulage road.

Currently we are approved to mine 360,000 tons of coal per year, and we would like to expand this production to 1,500,000 tons. Only slight changes in the operating procedures will be required and these changes will reduce emissions from the present state. Even with the increased number of coal haulage trucks total emissions will be reduced due to the paving of the coal haulage road.

Emissions will be further reduced due the elimination of the diesel generator previously used for power generation.

Please find enclosed the calculations used to determine emission levels and coal handling schematics, and production schedules for your review.

Your timely review of this modification would be greatly appreciated. If there are any further questions or comments please feel free to contact me at 687-9813. Thank you very much for your time and consideration.

Sincerely,

R. Jay Marshall

R. Jay Marshall P.E.
Chief Engineer
Genwal Coal Company

P O Box 1201 • Huntington, Utah 84528 Telephone (801) 687-9813

GENWAL COAL COMPANY
Letter of Intent (LOI)
Bureau of Air Quality

(I) DESCRIPTION OF PROPOSAL

Genwal Coal Company proposes to make changes to our existing coal operation. Genwal Coal Company currently operates under an air quality approval order dated November 2, 1988. The total coal production is limited to 360,000 tons per year. The current approval allows for two crushers, screens, conveyors, and a grizzly, a surge bin, storage hoppers, and a truck load-out facility. The new proposal will up allowable production from 360,000 tons to 1,500,000 tons per year.

Genwal coal is the present owner of the following leases:

1) U-54762 T. 15S., R. 7E. Section 31: SE 1/4 SE 1/4, Section 32: S 1/2 SW 1/4, SW 1/4 SE 1/4; T. 16S., R.7E. Section 5: Lots 2,3, and 8.

2) SL-062648 T. 16S., R.7E. Section 5: SW 1/4 NW 1/4 Lot 4, Section 6: SE 1/4 NE 1/4, Lot 1

3) U-66438 T.15S., R.7E. Section 31: lots, 10, 11, and 12. (ROW)

4) ML-21568 T. 15S., R.6E. Section 36: ALL

5) ML-21569 T. 16S., R.6E. Section 2: All

Coal from all five leases is removed from one set of portals and is processed and loaded at one surface facility.

The following numbers describe the present operation:

1. 1,500,000 tons per year
2. 6,250 tons per day
3. 240 days per year
4. 20 hours per day
5. Pile size - 1,500 tons average
6. Truck payload - 45 tons
7. Road Length - 1.35 miles
8. Power - UPL line service

R.O.M. BELT (A)

Presently coal is mined with a continuous mining machine and transported by the R.O.M. (Run of Mine) conveyor belt (A) out of the mine and onto a Grizzly (B). (See Figures 1 and 2) The speed of the R.O.M. belt is less than 550 feet per minute. The drop for the R.O.M. coal from the R.O.M. conveyor to the Grizzly is less than five (5) feet.

GRIZZLY (B)

The grizzly dimension will be approximately 5' wide and 8' long. The Run of Mine (R.O.M.) belt will transport up to 1,500,000 Tons of coal a year starting in 1992.

The coal will be separated into one of two circuits at the grizzly. During normal operations the primary coal circuit will be used. The secondary circuit will only be used when the primary circuit fails or becomes overloaded. It is estimated that 1,350,000 tons will take the primary circuit and only 150,000 tons will end up in the secondary circuit. The primary circuit will be discussed first.

PRIMARY CRUSHER (C)

Coal leaving the grizzly and entering the primary circuit will leave as either 2" plus which will flow over the grizzly and into the primary crusher (C), or 2" minus which will pass through the grizzly, bypassing the crusher and drop directly onto the silo belt (D). It is estimated that of the 1,500,000 tons of R.O.M. coal, 1,080,000 tons will flow over the grizzly and into the primary crusher. Approximately 270,000 of the R.O.M. coal will pass through the grizzly and drop onto the silo belt.

SILO BELT (D)

The silo belt is approximately 100 feet long and travels at less than 550 feet per minute. From the silo belt the coal will drop into the silo (400 ton storage bin). The drop from the silo belt into the silo (E) is approximately 5 feet.

SILO (E)

The silo is built of steel and is fully enclosed. The silo is constructed with an overflow. If the silo is full the coal will flow out the top of the overflow and onto the storage pile (J). This overflow coal will then be handled by the secondary circuit. The overflow coal will amount to approximately 135,000 tons a year. Approximately 1,215,000 tons of coal will pass through the silo and be reclaimed by the reclaim belt.

RECLAIM BELT (F)

The reclaim belt is approximately 50 feet long and travels at a speed of less than 550 feet per minute. Once the coal is weighed on the reclaim belt it is conveyed into coal haul trucks to be delivered to our buyers.

COAL HAUL TRUCKS (G)

These coal haul trucks are not owned by Genwal Coal Company but are owned and operated by Savage Industries. These trucks are specially designed to haul coal long distances with minimal spillage.

The above discussion describes the Primary coal circuit which handles approximately 1,350,000 tons of the total production of 1,500,000 tons. The remaining 150,000 tons will be handled by the secondary coal circuit.

SECONDARY CRUSHER (H)

Coal leaving the grizzly and entering the secondary circuit will leave as either 2" plus which will flow over the grizzly and into the secondary crusher (H), or 2" minus which will pass through the grizzly, bypassing the crusher and drop directly onto the bypass conveyor (I). It is estimated that of the 1,500,000 tons of R.O.M. coal, 120,000 tons will flow over the grizzly and into the secondary crusher. Approximately 30,000 tons of the R.O.M. coal will pass through the grizzly and drop directly onto the bypass belt.

BYPASS CONVEYOR (I)

The bypass conveyor is approximately 40 feet long and travels at less than 550 feet per minute. Approximately 150,000 tons per year of coal from the bypass conveyor will drop approximately 75 feet onto the coal storage pile (J).

COAL STOCKPILE (J)

Coal will only be stored on the stock pile if the primary circuit fails or if the silo overflow is being utilized. The amount of coal on the stockpile will change from day to day. The stock pile will collect coal from the secondary circuit as well as from the silo over flow. Approximately 135,000 tons a year will come from the silo over flow and 150,000 tons a year will come from the secondary coal circuit. The maximum amount of coal expected on the pile at any one time will be 3,000 tons. The majority of the time the pile will be depleted to minimal tonnages. Coal will be reclaimed from the coal stock pile by the use of a loader.

LOADER OPERATIONS

A cat loader, owned and operated by Savage Industries, will reclaim coal from the coal stock pile and place it into the reclaim coal hopper (K). The travel distance for this loader is less than 100 feet.

RECLAIM COAL HOPPER (K)

This hopper is approximately 5 foot square and will hold nearly 3.5 tons. It is anticipated that only 285,000 tons of coal a year will be handled by the loader.

HOPPER BELT (L)

Coal from the hopper will drop from the bottom of the hopper onto a short conveyor which in turn will deposit the coal onto the reclaim conveyor. The hopper conveyor is approximately 20 feet long and travels at under 400 feet a minute. It is at the reclaim conveyor that the "primary" circuit and the "secondary" circuit join together

representing the total 1,500,000 tons a year of production. The total coal production will travel from the reclaim belt to the truck load out as discussed above.

The grizzly, and crushers are owned and operated by Genwal Coal Company. The loader, silo, and truck load out are owned and operated by Savage Industries. However, for the purpose of this Letter of Intent all equipment on Genwal Coal Companies permitted mine property was taken into consideration regardless of ownership.

(II) EMISSION SUMMARY

The emissions from the Genwal Operation are shown below with a comparison of present vs projected. A net emission increase is shown for convenience.

Emission	Present	Projected	Net Increase
Particulate	22.36	13.91	-8.47
PM_{10}	8.47	5.57	-2.85
SO_2	4.43	.39	-4.04
NOX	65.71	4.02	-61.7
CO	14.46	1.23	-13.23
VOC	5.35	.54	-4.82
Methane	0.00	0.00	0.00
Aldehydes	1.00	0.09	-0.91
Total Yearly Emission Decrease			8.47 TONS

(III) BEST AVAILABLE CONTROL TECHNOLOGY (BACT) ANALYSIS

The following points will require application of best available control technology (BACT) and were included in the emission calculations:

Haul road
Grizzly
Crushing
Conveying
Storage pile
Drop points
Disturbed soil, wind erosion
Diesel engine emissions

Haul Road

The old gravel haul road has been paved greatly reducing emissions. Due to the paving of the road no BACT evaluation is needed.

Grizzly

BACT for this emission point will include the following. The grizzly will be completely enclosed. The distance coal is dropped onto the grizzly will be minimized. Coal spray's will be used to suppress dust if the coal moisture content drops below 6%. Adding moisture to the coal reduces the value of the coal. For each per cent increase in moisture there is a corresponding decrease of about 200 BTU's. The 6% moisture level is well above the 4% required to be classified as "wet" crushing. Due to environmental conditions the sprays will only be used during the late spring, summer and early fall months to minimize the chances of freezing.

Conveying

According to previous submittals the BACT for this emission point has been determined to be 10% opacity limitation. It will be met through the use of water sprays at the conveyor transfer points underground, where the water is protected from freezing. Water will also be applied at the face during the mining process. Experience has shown that adequate watering will allow the opacity limitation to be met. The conveyor will not be completely covered due to the low speed of the conveyors (6.8 MPH).

Storage Pile

The coal stock is needed to handle any overflow coal or coal handled in the secondary circuit. The maximum size of this pile will be 3,000 tons. However, the average or normal level will be less than 500 tons. BACT for this pile has been determined to be minimizing of emissions through an operating practice of watering as dry conditions warrant. Experience has shown that adequate watering will control fugitive dusts.

Drop Points

The emissions from drop points at conveyor termination points will be controlled by water sprays employed when the coal moisture content drops below 6%. Again the spray system will only be used during warm dry weather.

Disturbed Soil, Wind Erosion

BACT for disturbed areas and wind erosion from these areas has been determined to be minimizing of emissions through an operating practice of watering as dry conditions warrant. Experience has shown that adequate watering will control fugitive dusts.

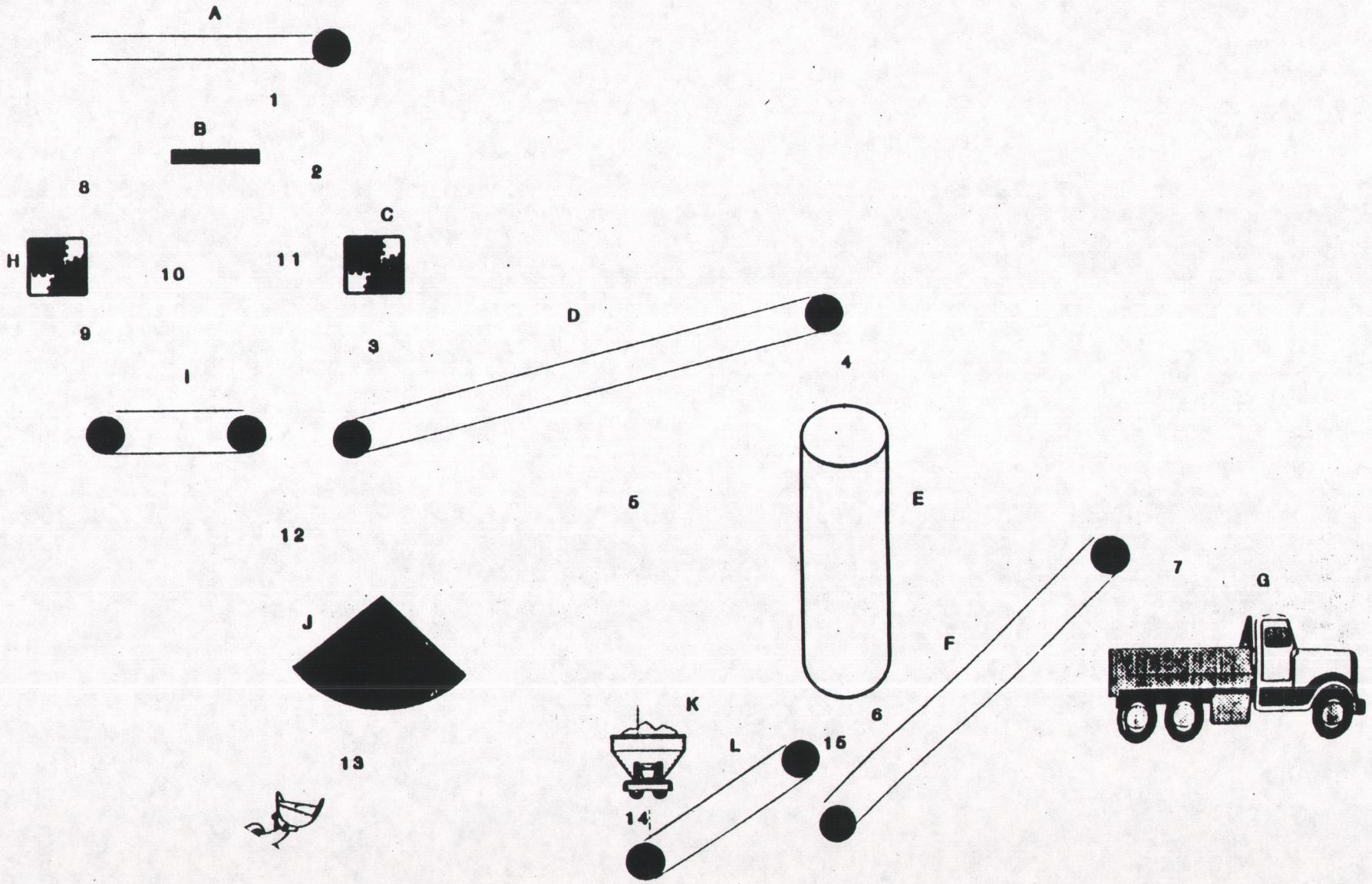
Diesel Engine Emissions

BACT for all diesel engines at the coal mine has been determined to be minimizing of emissions through an operating practice of proper maintenance and low sulfur fuel as required by section 4.2.1, Utah Air Conservation Regulations (UACR).

By implementing the above plans Genwal Coal Company can effectively reduce emissions from 22.36 down to 13.91 even with an increase of production from 360,000 tons to 1,500,000 tons per year.

GENWAL COAL COMPANY

Drop Flow Diagram



GENWAL COAL COMPANY

Process Flow Diagram

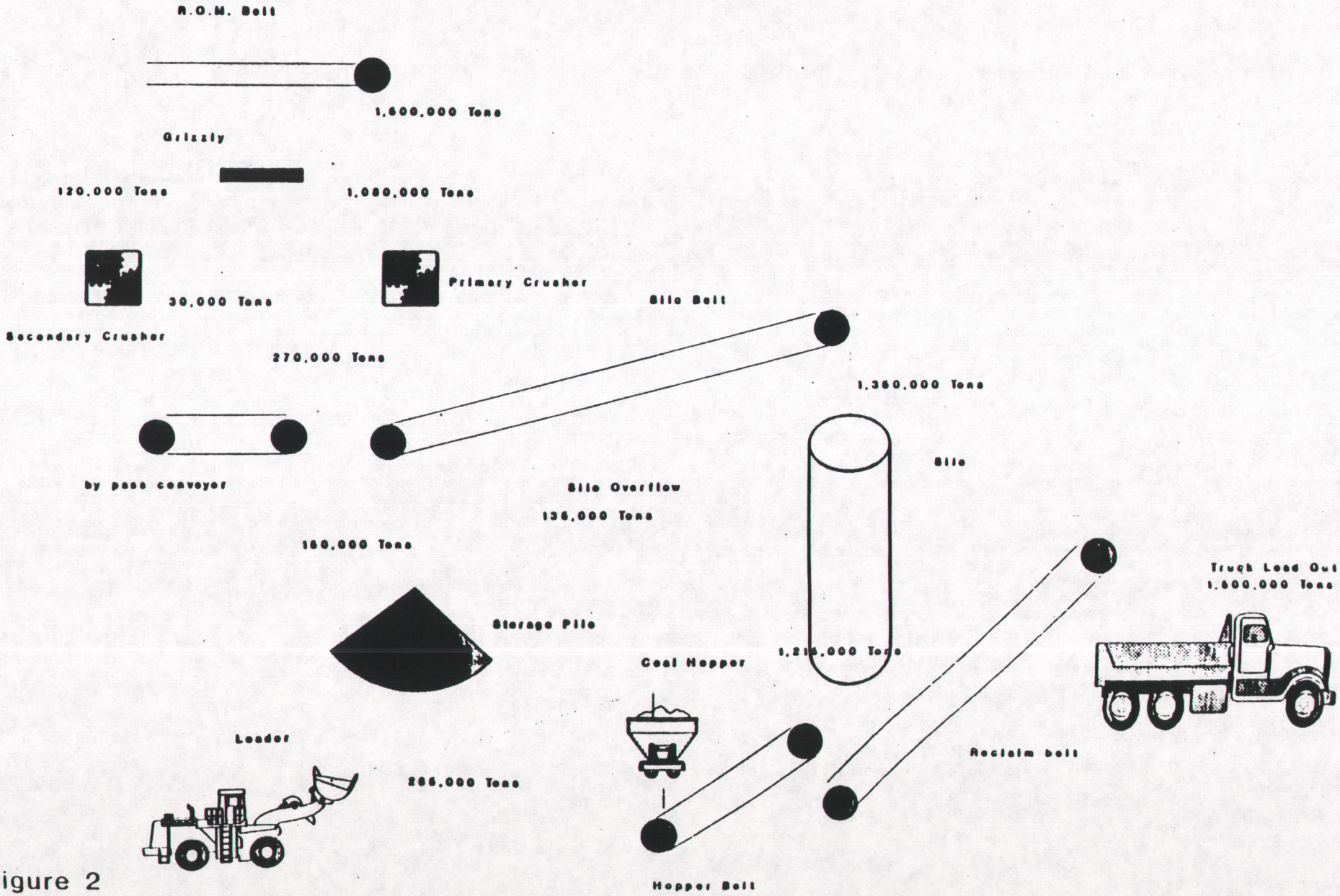


Figure 2

GENWAL COAL COMPANY
(Summary)
COMPARING 360,000 TONS/YR
WITH 1,500,000 TONS/YR

SOURCE	360,000 TONS TSP	360,000 TONS PM-10	1,500,000 TONS TSP	1,500,000 TONS PM-10	NET EMISSION INCREASE TSP	NET EMISSION INCREASE PM-10
HAUL ROAD	10.700	4.800	2.431	0.851	-8.27	-3.95
MISC SOURCES	4.4000	0.2900	1.45	0.69	-2.95	0.40
CRUSHER			1.08	0.07	1.08	0.07
LOADER OPERATION	0.0048	0.0022	5.93	2.67	5.93	2.67
STORAGE PILE	0.146	0.054	0.146	0.054	0.00	0.00
DISTURBED SOIL WIND	2.40	0.87	2.51	0.90	0.11	0.03
DIESEL ENGINE EMISS	4.73	2.40	0.37	0.33	-4.36	-2.07
TOTAL	22.38	8.42	13.91	5.57	-8.47	-2.85

(NET EMISSION INCREASE)
TOTAL ANNUAL EMISSIONS ESTIMATE IN TONS/YR

	360,000 BEFORE	1,500,000 AFTER	1,140,000 CHANGE NET EMISSION INCREASE
TSP	22.38	13.91	-8.47
PM-10	8.42	5.57	-2.85
SOx.....	4.43	0.39	-4.04
NOx.....	65.71	4.02	-61.70
CO	14.46	1.23	-13.23
VOC non METHAN	5.36	0.54	-4.82
VOC METHANE ..	0.00	0.00	0.00
ALDEHYDES	1.00	0.09	-0.91

LOI Calculations
URBAN PAVED ROAD
assume Local Street roadway category

e = k (sL/.7)^p (lb/VMT)

Particulate Emission Factor	e =	0.05402	lbs/VMT TSP	
total road surface loading and surface silt content, fraction particles <75 um	sL =	2.0215	grains/ft2	From Table 11.2.5-3
base emission factor,	k =	0.0208	lb/VMT	From Table 11.2.5-1
exponent	p =	0.90	dimensionless	From Table 11.2.5-1

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e = k (sL/.7)^p (lb/VMT)

Particulate Emission Factor	e =	0.01892	lbs/VMT PM-10	
total road surface loading and surface silt content, fraction particles <75 um	sL =	2.0215	grains/ft2	From Table 11.2.5-3
base emission factor,	k =	0.0081	lb/VMT	From Table 11.2.5-1
exponent	p =	0.80	dimensionless	From Table 11.2.5-1

SUMMARY

Vechicle miles traveled (VMT)

Tons Produced	1,500,000	tons
Length of Road	2.70	miles per trip
Tons per trip	45.00	

Urban paved road emissions in TONS/Year	
TSP	PM-10
2.431	0.851

VMT = (tons prod)/tons per trip) * Road Length

VMT = 90,000

CONTROLLED ANNUAL EMISSION RATE ESTIMATE FOR: CRUSHER

SOURCE: 2 Crushers

COMPANY NAME: Genwal Coal Company
LOCATION: Huntington, Utah
28-Aug-1991

Annual Emissions Estimate in Tons/Year =
(uncontrolled Emissions)*(100-% Control)

Particulate (TSP) = 1.08 Tons/Year
PM-10 . . . . . = 0.07 Tons/Year

AP-42 Supplement A October 1986
Section 8 Mineral Products Industry Sources
8.19.2 Crushed Stone Processing
Table 8.19.2-1, Primary or Secondary crushing Dry Material

Emission Factors in LB/TON
TSP (From table 8.19.2-1).... 0.018 LB/TON
PM10 (Ratio From above)..... 0.001 LB/TON

Crusher Through-Put: Percentage of Production Rate . . . 0.80

Production Rate of Crushing Plant 1,500,000 TONS\YEAR

Uncontrolled Particulate Emissions

TSP = (EMISS. FACT.)(Prod Rate)(% Through-put)
/2000 LB/TON

TSP = 10.80 TON/YEAR

PM-10 = (EMISS. FACT.)(Prod Rate)(% Through-put)
/2000 LB/TON

PM-10 = 0.72 TON/YEAR

Controlled Particulate Emissions
Percent Control: Enclosed Source 0.90

:nwel Coal Company MISCELLANEOUS SOURCES

ırticulate emissions generated by drop
ɔerations. (Miscellaneous Sources)
)I 1991

duction = 1500000 Tons

)tal Particulate emissions

E = K((.0032)(U/5))^1.3/((M/2)^1.4) lb/ton From 11.2.3-3

E = emission factor
K = particle size multiplier (dimensionles)
U = mean wind speed, (MPH)
M= material moisture content (%)

K =	0.74	TSP		From Table 11.2.3-2
K =	0.35	PM- 10		From Table 11.2.3-2
U =	2.	MPH	Enclosed Area	
U =	7	MPH	Open Area	Default average value
M =	5.8	%		Actual measured average

ETSP =0.00016 lb/ton
Total TSP = 1.45 Tons/year

Total EPM-10 = 0.00008 lb/ton
Total PM-10 = 0.69 Tons/year

No.	Tons	ETSP	TSP	EPM-10	PM-10	Drop FT.	From	To	Drop Description
	1,500,000	0.00016	0.12	0.00008	0.06	5	A	B	ROM belt to Grizzly
2	1,080,000	0.00016	0.09	0.00008	0.04	5	B	C	Oversized from Grizzly to Primary Crusher
3	1,080,000	0.00016	0.09	0.00008	0.04	1	C	D	Crushed from Primary Crusher to Silo Belt
4	1,350,000	0.00016	0.11	0.00008	0.05	5	D	E	Crushed and undersized from silo belt to silo
5	135,000	0.00083	0.06	0.00039	0.03	60	E	J	Silo overflow to stock pile
6	1,215,000	0.00016	0.10	0.00008	0.05	3	E	F	Silo discharge to reclaim belt
7	1,500,000	0.00083	0.62	0.00039	0.29	12	F	G	Reclaim belt to haulage trucks
8	120,000	0.00016	0.01	0.00008	0.00	5	B	H	Oversized from Grizzly to Secondary Crusher
9	120,000	0.00016	0.01	0.00008	0.00	1	H	I	Crushed from Secondary Crusher to by-pass conveyor
10	30,000	0.00016	0.00	0.00008	0.00	6	B	I	Undersized from Grizzly to by-pass conveyor
11	270,000	0.00016	0.02	0.00008	0.01	6	B	D	Undersized from Grizzly to Silo Belt
12	150,000	0.00083	0.06	0.00039	0.03	75	I	J	Crushed and Undersized from by-pass conveyor to stock
13	285,000	0.00083	0.12	0.00039	0.06	2	J	K	Stock pile loaded into Coal Hopper using Front end lo
14	285,000	0.00016	0.02	0.00008	0.01	1	K	L	Coal Hopper to Hopper Belt
15	285,000	0.00016	0.02	0.00008	0.01	1	L	F	Hopper Belt to Reclaim Belt
otals			1.45		0.69				

EE DROP FLOW DIAGRAM (Figure 1)
EE PROCESS FLOW DIAGRAM (Figure 2)

ontrolled Annual Emission Rate Estimate For:

LOADER OPERARTIONS AREA

OURCE: Loader Operation Area

enwal Coal Company
ington, Utah
just 1991

nnual Emissions Estimate in Tons/Yr

Particulate (TSP)..... 5.93 TONS/YEAR

PM10 ..... 2.67 Tons/YEAR

P-42 Supplement A October 1986
ection 11 Miscellaneous Sources
1.2 Fugitive Dust Sources
1.2.1 Unpaved Roads: Loader Operations Area

b/VMT = Equation #1 From PG. 11.2.1-1 =
(5.9)((s/12)(S/30)((W/3)^.7)((w/4)^.5)((365-p)/365)..... 14.659 LBS/VMT
(5.9)((s/12)(S/30)((W/3)^.7)((w/4)^.5)((365-p)/365)..... 6.597 LBS/VMT

= Part. Size Fact. <30 micr. from PG. 11.2.1-3 0.80
= Part. Size Fact. <10 micr. from PG. 11.2.1-3 0.36
= Silt Cont MEAN DEFAULT VALUE FROM PG. 11.2.1-3 12.20 %
= SPEED DEFAULT VALUE ..... 15 MPH
= Vehicle Weight: (Loaded Wt. + Empty Wt.)/2 45.00 Tons
= Mean # wheels: BAQ DEF Value from PG. 11.2.1-3 4 Wheels
of days > .01 in H2O (estimated) ..... 30 Days

M/YR = (Miles/Trip)*(Trips/Year) ..... 809.66 VMT/YR

iles/Trip: Estimate (150 Ft/Trip)/(5280 ft/mile) 0.028 Miles/Trip
rips/yr = (Mat. Loaded/yr)/(Mat. Loaded/trip) 28,500 Trips/Year
Material Loaded tons/yr from LOI 285,000 Tons/Year
Material Loaded/Trip: (Loaded wt. - Empty wt.) 10 Tons
Empty Wt. Est. from staker asp. review 40 Tons
Loaded Wt. Empty Wt., + 5yd of gravel 50 Tons

ONS/YR = (LBS/VMT)(VMT/YR)(1Ton/2000lbs) = 5.93 Tons/YR

DISTURBED
AREA

CONTROLLED ANNUAL EMISION RATE ESTIMATE FOR:

SOURCE: DISTURBED SOIL WIND EROSION

GENWAL COAL COMPANY
HUNTINGTON, UTAH
29 AUG 1991

ANNUAL EMISSIONS ESTIMATE IN TONS/YR = (TON/ACRE/YR)(ACRE)

TOTAL PARTICULATE	2.51 TON/YR
PM-10	0.90 TON/YR

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SECTION 8 MINERAL PRODUCTS INDUSTRY SOURCES
8.24 WESTERN SURFACE COAL MINING
TABLE 8.24-4, WIND EROSION OF EXPOSED AREAS

EMISSION FACTOR IN TON/(ACRE*YEAR)

PARTICULATE (tsp) FROM TABLE 8.24-4	0.38 T/A*YR
PM10	NA T/A*YR
USE: 365 DAYS/YR	
ACRES OF DISTURBED AREA: FROM LOI.....	6.60 ACRES
TSP IN TON/YR = (TON/ACRE*YEAR)(ACRE).....	2.51 TON/YR
PM10 IN TON/YR = TSP(0.37)	0.90 TON/YR

FROM WIND EROSION PM10 ESTIMATE 10/06/87
STUDY PERFORMED BY DAVE PREY BAQ

CONTROLLED ANNUAL EMISSION RATE ESTIMATE FOR:

SOURCE: WHEELED LOADER

GENWAL COAL COMPANY
HUNTINGTON, UTAH
29-AUG-1991

ANNUAL EMISSIONS ESTIMATE IN TONS/YR =
(EMISS. FACTOR)(GAL/YR)(1/1000)(1 TON/2000LBS)(# OF LOADERS)

PARTICULATE (TSP)	0.366	TONS/YR
PM10	0.330	TONS/YR
SOx	0.390	TONS/YR
NOx	4.015	TONS/YR
CO	1.233	TONS/YR
VOC, non-METH (EXHAUST HYDROCARBONS)	0.540	TONS/YR
VOC, METH	0.000	TONS/YR
ALDEHYDES	0.090	TONS/YR

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SECTION II: OFF HIGHWAY MOBILE SOURCES
II-7: HEAVY DUTY CONSTRUCTION EQUIPMENT
TABLE II-7.1: EMISSION FACTORS FOR HEAVY-DUTY
DIESEL-POWERED CONSTRUCTION EQUIPMENT

WHEELED LOADER (IN LBS/K GAL)

EMISSION FACTOR IN LBS/K GAL OF OPERATION

PARTICULATE (TSP)	29.3
PM10.....BAQ ESTIMATE OF 90% OF TSP	26.4
SOx	31.2
NOx	321.2
CO	98.7
VOC, non-METH (EXHAUST HYDROCARBONS)	43.2
VOC, METH	0.0
ALDEHYDES	7.2

GALLONS DIESEL FUEL/YR: NOI INFO	25,000
NUMBER OF WHEELED LOADERS	1.0