



CITY OF RAPID CITY

RAPID CITY, SOUTH DAKOTA 57701-5035

Growth Management Department

300 Sixth Street

Keri Schiferl, Air Quality Specialist
Growth Management Department
city web: www.rcgov.org

Phone: 605-394-4157
Fax: 605-394-6636
e-mail: keri-schiferl@rcgov.org

MEMORANDUM

TO: Rapid City Area Air Quality Board

FROM: Keri Schiferl, Air Quality Specialist ^Y

DATE: August 25, 2010

RE: Annual Inspection Report – City Landfill

The purpose of the annual inspection of the City Landfill is to identify fugitive dust generating activities and assess if control measures are in use and adequate to control fugitive emissions.

Attached for your review is a copy of the Annual Inspection Report.

Recommendation: Staff recommends the Air Quality Board acknowledge the Annual Inspection Report for the City Landfill Compliance Plan with the recommendations to be monitored at the next inspection.



EQUAL HOUSING
OPPORTUNITY

EQUAL OPPORTUNITY EMPLOYER

ANNUAL INSPECTION REPORT

August 2010

City of Rapid City Continuous Operations at the City Landfill

GENERAL INFORMATION:

Facility Name:	City Landfill
Location:	5555 S. Highway 79
Date of Inspection:	August 19, 2010
Report By:	Keri Schiferl

GENERAL COMMENTS:

The purpose of the annual inspection of the City Landfill operations and facility is to identify the fugitive dust generating activities and assess whether the control measures identified in the Compliance Plan are in use and adequate to control fugitive dust emissions. The current Compliance Plan is in effect until March 8, 2013.

STAFF REVIEW:

On August 19, 2010 staff conducted the annual inspection of the Landfill. Operations were discussed with Karl Merbach, Solid Waste Operations Superintendent and Mike Oyler, MRF Supervisor. John Leahy, Landfill Operations Supervisor, answered additional questions following the inspection. The following potential sources of fugitive dust emissions were identified:

- trackout to paved roads;
- fugitive dust from improved roads, unimproved roads and other surfaces;
- wind erosion;
- compost grinding;
- compost windrow activities;
- contaminated soil area;
- recycled asphalt operations;
- active soil borrow area;
- concrete pit;
- asbestos disposal area;
- garbage disposal area; and
- MSW compost operation.

The landfill is closed to the public during periods of high winds.

ANNUAL INSPECTION REPORT

August 2010

City of Rapid City Continuous Operations at the City Landfill

Trackout to Paved Surfaces

Most of the access roads at the Landfill have been surfaced with a layer of coarse asphalt which is then covered with a finer recycled asphalt material. At the time of the inspection, the main access road was relatively clean.

Trackout occurs on the main access road to the landfill area from the scraper used for the landfill cover and from haul trucks and the vehicles used by the general public coming out of the landfill area. Mr. Merbach indicated that rocks and gravel placed at the entrance to the tipping area are used to minimize mud tracking from the area. Mr. Oyler indicated that the paved road is swept by the City Street Department. Staff noted that at the time of inspection South Highway 79 was free of trackout from the landfill. If trackout occurs on South Highway 79 the City Street Department sweeps the area.

Mr. Oyler stated that the paved roads around the landfill would be swept next week by the City Street Department. The City Street Department sweeps the main access roads into the facility on an as needed basis but typically once every month or two.

Mr. Merbach stated that a wheel wash mechanism is recommended as part of the new customer service campus in the new solid waste plan. Mr. Merbach indicated that they are looking at this project for development in 2012.

Fugitive Dust from Improved Roads, Unimproved Roads and Surfaces

Another primary source of fugitive dust is from traffic on the haul road from the borrow area to the active landfill area. The haul road adjacent to the borrow area and concrete pit is located at the top of a hill and is subject to wind erosion. The surface of the road in this area has been paved with recycled asphalt. The surface of the haul road contained dirt and it appeared that fugitive dust would be generated with when traveling over the road or in the event of high winds. Mr. Merbach indicated that there is not very much traffic in this area and the vehicles are traveling at slow speeds which keeps the dust down.

The road into the tipping area was dry and dust was generated by traffic in the area traveling over the surface. According to Mr. Merbach at the time of inspection we observed peak activity in the tipping area. Currently the area sits lower than the surrounding topography so the dust is somewhat contained in the area but as the cell is raised the dust from the haul roads will be more of a problem. Mr. Leahy indicated that a water truck is used as needed. He also noted that most of the access roads to the tipping area are constructed of recycled asphalt to help minimize dust but in the current area this is only partially done due to their scraper being down. **Staff recommends the implementation of additional dust control measures in this area.**

Wind Erosion

Mr. Leahy estimated the disturbed areas at the landfill to contain approximately 24 acres that are subject to wind erosion excluding Cell 12. Wind erosion from these disturbed

ANNUAL INSPECTION REPORT

August 2010

City of Rapid City Continuous Operations at the City Landfill

areas is typically not significant unless the areas are being manipulated. Manipulation of the areas does not occur on days when there are high winds.

Cell 12 of the landfill is scheduled for closure for this year; Cell 12 is approximately 28 acres. The project kickoff meeting for the Cell 12 closure is scheduled for Monday, August 23, 2010. Mr. Merbach stated that the project will be complete this fall and the areas will be seeded when the project is complete. This will reduce the amount of exposed area at the landfill.

The active borrow area is located on the western side of the Landfill and is subject to wind erosion. Mr. Merbach indicated that since he has been at the landfill he has not noticed that the active borrow area is a significant contributor to fugitive dust. The area is located next to the concrete pit and is in a low spot.

Compost Grinding

Yard waste is deposited in the composting area where it is ground into compost material and transferred to windrows. Stockpiles of raw material and milled material are located in the grinding area. The grinding process is conducted approximately once per week as needed and according to Mr. Merbach is conducted year round. Approximately 15,000 tons of yard waste is ground annually at the landfill. Mr. Merbach stated that some dust is generated by this process but it typically settles out in the area because of the location.

Compost Windrow Activities

After the yard waste has been ground, it is stockpiled in windrows to facilitate the composting process. According to Mr. Merbach during the composting process there is typically enough moisture in the product to control dust. Mr. Merbach indicated that the windrows are turned approximately every 2 weeks. After the windrow process is complete the screening and stockpiling process begins. Stockpiles of 3/4 compost, 3/8 compost and wood chips are stored in the screening area and are available to the public. A loader was observed loading compost into a small pickup at the time of inspection. A small amount of dust was generated from the loading process.

Contaminated Soil Area

The contaminated soil area is located adjacent to the recycled asphalt area. Mr. Merbach indicated that the exposed area of the contaminated soil area is fairly small and very little dust is produced from this process.

Recycled Asphalt Operations

The recycled asphalt area is located across from the active borrow area and the concrete pit. The surface of the asphalt storage area is recycled asphalt. Asphalt pieces are imported primarily during the summer months and stockpiled on the site. The asphalt is milled once per year. The milled material is available to the public and approximately

ANNUAL INSPECTION REPORT

August 2010

City of Rapid City Continuous Operations at the City Landfill

1,500 tons is kept by the landfill for use on the roads. Mr. Merbach indicated that this is a fairly clean process. Although no activity in the area was observed the road surface contained dirt on top of the road surface which could be readily entrained when traveled on. **Staff recommends that the landfill staff monitor this road and if a fugitive dust problem exists that the frequency of watering this road be increased when trucks are traveling on the road or the speed limit be reduced in order to minimize fugitive emissions.**

Active Soil Borrow Area

The active borrow area is located on the western side of the Landfill. A scraper removes soil and transports it to the active garbage disposal area. This area is used approximately once per week when the 6 inches of dirt is put down in the active tipping area over the garbage.

Concrete Pit

There is an area of the Landfill adjacent to the active borrow site where trucks haul in concrete rubble and other inert materials for disposal. This area is a large pit with steeply sloped sides. Mr. Merbach indicated that the only dust that is produced in this area is due to the traffic on the haul roads. Traffic travels at slow speeds which helps to minimize the dust.

Asbestos Disposal Area

Asbestos is disposed of in a separate area. The asbestos disposal area is located to the north of the concrete pit. After a load of asbestos containing materials is received the landfill covers it with 6 inches of dirt.

Garbage Disposal Area

The tipping area where public vehicles unload garbage to the active landfill is a fugitive dust source. The area is constantly being worked as the active filling progresses. Staff observed the compacting process. Mr. Merbach stated that a spray cover is used daily which helps reduce dust from the area. The garbage disposal area is shut down when wind speeds reach 30 mph.

MSW Compost Operation

The Landfill produces municipal solid waste compost. The primary process combines food waste and paper products with biosolids from the wastewater treatment plant. The compost is transferred to the secondary treatment building consisting of open bays with an air handling system which helps reduce odors. The compost remains in the open bays for one month. The next process is refining/screening which removes unwanted materials from the compost, such as bottle caps, plastics and glass. The refined compost is stored in windrows until lab testing results confirm the compost is suitable for distribution.

ANNUAL INSPECTION REPORT

August 2010

City of Rapid City Continuous Operations at the City Landfill

The windrows are stored to the east of the co-composting building. A turner was being utilized to turn the piles in the windrows at the time of inspection. Dust generated from this process was observed. Mr. Merbach stated that the material is turned when there is a north wind to avoid the dust and odor being carried into the residential areas. Mr. Merbach indicated that the moisture in the process is controlled and too much moisture would cause problems in the composting process.

Compost on the road was noticed at the time of inspection mostly in the gutters of the road. Mr. Merbach indicated that this is from erosion of the material by storm water. He indicated that they are planning to look at more control of runoff and this should also help with the potential for dust after the material dries.

According to Mr. Merbach traffic in this area is limited. He estimated that 5 to 8 vehicles travel in the area per day and this area is not open to the public.

SUMMARY:

It is staff's opinion that the City Landfill is in general conformity with the City's Fugitive Dust Compliance Plan. Based on inspection results staff has the following recommendations:

- **Implementation of additional dust control measures on the haul road leading into the tipping area.**
- **Evaluation of and a possible increase in the frequency of watering the access road leading to the recycled asphalt area, road improvements or reduction of the speed of vehicles traveling on the road.**



CITY OF RAPID CITY

RAPID CITY, SOUTH DAKOTA 57701-5035

Growth Management Department

300 Sixth Street

Keri Schiferl, Air Quality Specialist
Growth Management Department
city web: www.rcgov.org

Phone: 605-394-4157
Fax: 605-394-6636
e-mail: keri-schiferl@rcgov.org

MEMORANDUM

TO: Rapid City Area Air Quality Board

FROM: Keri Schiferl, Air Quality Specialist^{YLS}

DATE: August 16, 2010

RE: Annual Inspection Report – City Street Division

The purpose of the annual inspection of the City Street Division is to identify fugitive dust generating activities and assess if control measures are in use and adequate to control fugitive emissions.

Attached for your review is a copy of the Annual Inspection Report.

Recommendation: Staff recommends the Air Quality Board acknowledge the Annual Inspection Report for the City Street Division Compliance Plan.



EQUAL HOUSING
OPPORTUNITY

EQUAL OPPORTUNITY EMPLOYER

ANNUAL INSPECTION REPORT

August 2010

City of Rapid City Continuous Operations at the City Street Division

GENERAL INFORMATION:

Facility Name: City Street Division
Location: 605 Steele Avenue
Date of Inspection: August 4, 2010
Report By: Keri Schiferl

GENERAL COMMENTS:

The purpose of the annual inspection of the City Street Division operations and facilities is to identify the fugitive dust generating activities and assess whether the control measures identified in the City's Compliance Plan are in use and adequate to control fugitive dust emissions. The current Compliance Plan is in effect until March 8, 2013.

STAFF REVIEW:

On August 4, 2010 staff met with Don Brumbaugh, Streets Superintendent. The following potential sources of fugitive dust emissions were reviewed:

- street traction and deicing operations;
- sweeping operations;
- sandblasting operations;
- unpaved street and alley maintenance;
- paved street maintenance;
- truck fleet operations; and
- snow disposal site.

Street Traction and Deicing Operations

The primary method of street deicing on the west side of town is the use of enhanced corrosion inhibited magnesium chloride (mag water) and quarried sodium chloride (salt). Due to water quality concerns the method used on the east side of town is a washed river sand and road salt mixed in a 5:1 ratio. The salt and traction materials are stored in two domes and a storage building to eliminate exposure to the environment. Material is loaded into the buildings using loaders.

Ice sanding material is purchased from the Creston Operation of Pete Lien and Sons. The detailed specifications for the ice sanding material specifies that a durability or hardness as defined in Mohs scale of greater than 6 for 70 percent of the material applied and that no more than 3% of the total particle material content by weight may pass through a No. 200 sieve. According to Mr. Brumbaugh the supplier certifies that these specifications are met. Mr. Brumbaugh provided documentation from 2003 and 2009 that the materials met the specifications and stated that the materials are from the same pit and stated that they would contain the same makeup. Due to the cost of testing Mr.

ANNUAL INSPECTION REPORT

August 2010

City of Rapid City Continuous Operations at the City Street Division

Brumbaugh stated that the traction materials at the Street Department are not tested on a regular basis. Mr. Brumbaugh indicated that based on the testing that has been done they have not had problems meeting the requirements of the Administrative Rules of South Dakota or the Rapid City Municipal Code.

With the change in sanding operations Mr. Brumbaugh indicated that the street sweepers pick up more material. He indicated that they do not have any major changes in the operation planned for next year.

Street Cleaning and Sweeper Operations

The City has an ongoing year-round (temperature permitting) sweeping program to reduce the amount of particulate matter present on the streets that may become reentrained into the air from traffic or wind erosion. The Street Division has seven sweepers including six vacuum sweepers and one regenerative air sweeper. All of the sweepers are equipped with water.

Mr. Brumbaugh stated that typically sweepers last around 9 years before replacement is needed. The 2001 Elgin Geo Vac sweeper will be replaced this year. Mr. Brumbaugh indicated that they have been on a schedule to replace a sweeper every year. He also indicated that money is tight and next year equipment will only be replaced as needed.

The street sweeping schedule is the same schedule that is listed in the Fugitive Dust Control Plan. Due to the heavy rains received yesterday, all of the sweepers, except for the ones down for maintenance, were out cleaning up the sediment washed into the streets.

The sweepers are cleaned out across the street from the Street Division at the Sweeper Dump Facility. The material is cleaned out of the sweepers on a daily basis and stored at this facility until it is hauled to the Landfill for use as daily cover approximately once per week. All of the sweepers use water so the material is moist and not subject to wind erosion while stored at the sweeper dump facility. The paved area at this facility is swept as needed.

Sandblasting Operations

Equipment is sandblasted at the Street Division in an area between the salt domes. The frequency of sandblasting is equipment dependent. Mr. Brumbaugh estimated that sandblasting occurs 4 to 5 times during the summer. Slag is used to sandblast the equipment and the material is cleaned up after the sandblasting is complete. Sandblasting is not done on days with high winds when the fugitive dust is likely to be transported off site. The sandblasting area was clean with no sandblasting material observed.

Storage and Equipment Parking Surface

The areas of the Street Division are paved with asphalt. This area is mainly used for equipment storage so there is very little traffic on the surface. Small stockpiles of gravel, recycled asphalt and cold mix asphalt are stored in the three bins located on the west side of the salt/sand storage building. These piles are protected from the wind so fugitive emissions are not typically generated.

ANNUAL INSPECTION REPORT

August 2010

City of Rapid City Continuous Operations at the City Street Division

The paved areas are typically swept every week and/or as needed. The paved areas around the facility were clean at the time of inspection.

Unpaved Street and Alley Maintenance

Staff discussed the standard response procedure for dust complaints with Mr. Brumbaugh. Currently there is no policy or method of dust control for unpaved streets. When a complaint is received the Street Division investigates the cause and attempts to remedy the situation. This year one complaint regarding fugitive dust from East Saint Charles Street was received. Mr. Brumbaugh indicated that the recycled asphalt was milled up and laid back down. Mr. Brumbaugh stated that the road was treated with water. Mr. Brumbaugh indicated that the Street Division does not have a budget for fugitive dust control. **Staff recommends that fugitive dust control for gravel roads be addressed.**

Public Works has taken measures to reduce the amount of dust generation potential from unpaved alleyways and streets by revising the Out of the Dust program funding. The Out of the Dust Program has a funding allocation of \$50,000 annually to pave alleyways and streets that have gravel surfaces. The program was funded 40% by the City and 60% by the homeowner but has now been changed to be 100% funded by the City. Mr. Brumbaugh indicated that this will take care of paving approximately 2 to 3 alleys a year depending on the cost. Priorities for paving are based on maintenance issues, drainage problems, complaints and requests received. A priority list for the paving of alleys has been established.

Paved Street Maintenance

Activities of paved street maintenance are handled through Engineering and administered through Public Works.

Truck Fleet Operations

The City Street Division has tarps installed on all of the dump trucks to prevent fugitive emissions. Mr. Brumbaugh indicated that the tarps are used for hauling all materials.

Snow Disposal Site

The snow disposal site consists of the property located on East Saint Charles Street. It is an undeveloped piece of land with a horseshoe shaped gravel access road. A stockpile of salvaged rip rap is stored on the site and is slowly being removed. The site was graded 2 weeks ago and is mostly covered with gravel. The area is monitored when it is used and swept when necessary. Mr. Brumbaugh indicated that they have not received recent complaints regarding fugitive dust or trackout from the site.

ANNUAL INSPECTION REPORT

August 2010

City of Rapid City Continuous Operations at the City Street Division

SUMMARY:

It is staff's opinion that the City Street Division is in general conformity with the City's Fugitive Dust Compliance Plan. Staff recommends the following:

- **Staff recommends that fugitive dust control for gravel roads be addressed.**



CITY OF RAPID CITY

RAPID CITY, SOUTH DAKOTA 57701-5035

Growth Management Department

300 Sixth Street

Keri Schiferl, Air Quality Specialist
Growth Management Department
city web: www.rcgov.org

Phone: 605-394-4157
Fax: 605-394-6636
e-mail: keri-schiferl@rcgov.org

MEMORANDUM

TO: Rapid City Area Air Quality Board

FROM: Keri Schiferl, Air Quality Specialist¹⁾

DATE: August 16, 2010

RE: Annual Inspection Report – City Utility Maintenance Division

The purpose of the annual inspection of the City Utility Maintenance Division is to identify fugitive dust generating activities and assess if control measures are in use and adequate to control fugitive emissions.

Attached for your review is a copy of the Annual Inspection Report.

Recommendation: Staff recommends the Air Quality Board acknowledge the Annual Inspection Report for the City Utility Maintenance Division Compliance Plan.



EQUAL HOUSING
OPPORTUNITY

EQUAL OPPORTUNITY EMPLOYER

ANNUAL INSPECTION REPORT

August 2010

City of Rapid City Continuous Operations at the Utility Maintenance Division

GENERAL INFORMATION:

Facility Name: City Utility Maintenance Division
Location: 609 Steele Avenue
Date of Inspection: August 4, 2010
Report By: Keri Schiferl

GENERAL COMMENTS:

The purpose of the annual inspection of the City Utility Maintenance Division operations and facilities is to identify the fugitive dust generating activities and assess whether the control measures identified in the City's Compliance Plan are in use and adequate to control fugitive dust emissions. The current Compliance Plan is in effect until March 8, 2013.

STAFF REVIEW:

On August 4, 2010, staff met with Chip Petrik, Utility Maintenance Supervisor of the Water and Wastewater Division. The following potential sources of fugitive dust emissions were reviewed:

- material storage area;
- dewatering pit;
- truck fleet operations; and
- unpaved parking, storage and equipment parking area.

Material Storage Area

The material storage area is located mainly to the south of the Utility Maintenance Building. Stockpiles of excavated dirt, backfill dirt, base material and 1" clean rock are stored on site. The base material and 1" clean rock are stored in the concrete storage bins. This helps to reduce fugitive emissions from the stockpiles. The excavated dirt pile consists of material from water line break repairs so the material is saturated.

The Utility Maintenance Division was in the process of repairing a water line break at the intersection of East Saint Patrick Street and East Saint Joseph Street at the time of inspection. The surface of the material storage area around the dewatering pit was covered with mud. Some mud tracking from the area was observed on the paved surface. Other than tracking of material from the storage area and the area around the dewatering pit the paved areas of the facility were clean. Mr. Petrik indicated that when the water lines are repaired the material storage area is typically covered with mud. The area is dug out and additional rocks are brought in when the repair is complete. The paved areas of the Utility Maintenance Division are swept by the Street Division as needed. Mr. Petrik indicated that the condition of the material storage area was typical for being in the process of a water line repair and indicated that cleanup takes place after the water line is repaired.

ANNUAL INSPECTION REPORT

August 2010

City of Rapid City Continuous Operations at the Utility Maintenance Division

Dewatering Pit

An excavated sump currently facilitates the handling of saturated dirt excavated from water line repairs. Mr. Petrik indicated that some trackout typically occurs but it depends on the amount of excavated soil and number of water line repairs. During the inspection saturated material from the water line repair was noted near the excavated pit. Material not suitable for backfill is hauled to the landfill.

In order to improve and minimize the mud tracking associated with the dewatering pit the engineered drying bed that was previously designed should be considered for future improvement. **Staff recommends the installation of an engineered drying bed.**

Truck Fleet Operations

Mr. Petrik indicated that the Utility Maintenance Division has three dump trucks available. Two of the dump trucks are equipped with tarps. A truck equipped with the tarp is used when hauling topsoil. The dump trucks are usually used for hauling saturated material which does not generate fugitive dust so a tarp is not needed.

Unpaved Parking, Storage and Equipment Parking Area

The unpaved parking, storage and equipment parking areas are surfaced with gravel and river rock. Mr. Petrik indicated that paving the areas is not planned in the near future. Fugitive emissions were not observed from the storage piles or the unpaved storage and parking area.

SUMMARY:

It is staff's opinion that the City Utility Maintenance Division is in general conformity with the City's Fugitive Dust Compliance Plan. Staff recommends the following for consideration in future improvements:

- **The installation of an engineered drying bed.**