

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF WEST VIRGINIA
Wheeling**

UNITED STATES OF AMERICA,

Plaintiff,

v.

Civil Action No. 5:12-CV-19

Judge Bailey

MOUNTAIN STATE CARBON, LLC,

Defendant.

**FINDINGS OF FACT, CONCLUSIONS
OF LAW AND MEMORANDUM ORDER**

This is an action by the Environmental Protection Agency (“EPA”) against Mountain State Carbon, LLC (“MSC”) pursuant to Section 113(b) of the Clean Air Act, 42 U.S.C. § 7413(b) and Sections 3008(a) and 9006 of the Solid Waste Act, also known as the Resource Conservation and Recovery Act (“RCRA”), 42 U.S.C. §§ 6928(a) and 6991e.

Procedural History

This case was originally filed on February 6, 2012, by the EPA and the West Virginia Department of Environmental Protection (“WVDEP”) against RG Steel Wheeling, LLC, formerly known as Severstal Wheeling, LLC, also formerly known as Severstal Wheeling, Inc., and also known as Wheeling Pittsburgh Steel Corporation (“RG Steel”), Mountain State Carbon, LLC (“MSC”), and SNA Carbon, LLC (“SNA”) [Doc. 1].

On March 6, 2012, the WVDEP voluntarily dismissed its claims without prejudice [Doc. 8].

On June 1, 2012, a Suggestion of Bankruptcy was filed, noting that RG Steel filed a petition under Chapter 11 of the Bankruptcy Code in the United States Bankruptcy Court for the District of Delaware [Doc. 19]. As a result, this Court entered a stay [Doc. 20], which was lifted on July 9, 2012 [Doc. 27].

On July 23, 2012, SNA filed Defendant SNA Carbon, LLC's Motion to Dismiss for Failure to State a Claim and for Judgment on the Pleadings [Doc. 28], which Motion, after briefing, was granted by this Court on August 23, 2012 [Doc. 35].

On August 21, 2013, EPA moved to dismiss RG Steel [Doc. 106], which Motion was granted on August 22, 2013 [Doc. 107].

On September 24, 2013, the EPA filed United States' Motion for Partial Summary Judgment on its Clean Air Act Claims [Doc. 116].

On October 21, 2013, the EPA filed United States' Motion for Partial Summary Judgment on its RCRA Subtitle C Claim and to Dismiss Defendant's Eighth and Ninth Defenses [Doc. 125].

On the same day, MSC filed Defendant Mountain State Carbon, LLC'S Motion for Summary Judgment on the United States' Resource Conservation and Recovery Act Claims [Doc. 127].

By Order entered January 14, 2014, this Court granted in part and denied in part United States' Motion for Partial Summary Judgment on its Clean Air Act Claims [Doc. 116], denied United States' Motion for Partial Summary Judgment on its RCRA Subtitle C Claim and to Dismiss Defendant's Eighth and Ninth Defenses [Doc. 125], and granted in part and denied in part Defendant Mountain State Carbon, LLC'S Motion for Summary Judgment on the United States' Resource Conservation and Recovery Act Claims [Doc. 127]. [Doc.

182].

At the start of trial, the following causes of action were in play: (1) Third Claim for Relief - Particulate Emission Violation at Coke Oven Batteries; (2) Fifth Claim for Relief - Hydrogen Sulfide Concentration Violations; (3) Eighth Claim for Relief - RCRA Subtitle C Violations; (4) Tenth Claim for Relief - Alleged Purifier Oil Violations; (5) Eleventh Claim for Relief - Alleged Roll-off Box Violations; and (6) Twelfth Claim for Relief - Alleged RCRA Subtitle I Violations.

On May 12, 13, 14, 15 and 20, 2014, the parties appeared before this court for a bench trial. The plaintiff was represented by Michael J. Zoeller of the United States Department of Justice, Environment and Natural Resources Division; Cara Mroczek of the United States Department of Justice, Environmental Enforcement Section; John Sither of the United States Department of Justice, Environmental Enforcement Section; Joyce Howell of the United States Environmental Protection Agency; and Betsy Steinfeld Jividen of the United States Attorney's Office for the Northern District of West Virginia. The defendant was represented by John K. Gisleson, Kenneth S. Komoroski, Daniel Carmel, and Steven E. Gibbs of Morgan Lewis & Bockius LLP, Pittsburgh; and James F. Companion of Schrader, Byrd & Companion, PLLC. This Court received live testimony from James Hagedorn, Richard Eaton, Alfred Carducci, John McGrew, Karl Svoboda, Timothy Leon-Guerrero, Dr. Thomas Luben, Motria Caudill, Robert Harris, Martin Matlin, Thomas Lallone, Bud Smith, Harry Immurs, Robert Adoranti, Patrick Smith, Marcia Williams, and Larry Hottenstein, and reviewed the deposition testimony of Cheryl Scott, Ph.D.

Prior to beginning the receipt of testimony, this Court, accompanied by counsel for

the parties, viewed the premises of MSC.

The EPA's first witness was James Hagedorn, an environmental scientist in the air protection division, EPA Region III in Philadelphia. Mr. Hagedorn visited the MSC coke plant in 2001, 2008, and 2013. He recounted the preparations for the 2008 inspection, as well as the results and actions after the inspection, which included the issuance of a Notice of Violation. He described the Visible Emission Observations ("VEO") method of determining opacity violations.

Mr. Hagedorn admitted that during the 2008 inspection, all pushing emissions were within compliance and that all topsides and doors were compliant.

During his 2013 visit, he accompanied EPA's expert witness John McGrew, whose inspection consisted of looking into the ovens in Battery 8 from the outside. He noted that Mr. McGrew did not open the caps at the tops of the flues to determine whether there were any leaks from the ovens into the flues.

During cross-examination, Hagedorn admitted that under a consent agreement, the penalties for Shenango for opacity violations were fines of \$100 to \$450, after an allowance of 132 violations. Similarly, under a consent decree with U.S. Steel, the penalties for opacity violations were forgiven for the first 33 clock hours each quarter, with penalties of \$100 to \$450 thereafter. Under a 1996 consent decree with MSC, there is no penalty if the emissions were caused by force majeure.

In determining opacities by the VEO method, Method 9 must be followed or the finding is not reliable and may not be used. If the wind speed is 0-3 miles per hour, the plume will go straight up and is reliable. If a VEO reader does not find a violation, often there is no report showing compliance.

Mr. Hagedorn admitted that he had said that if one looks hard enough, one can always find a violation and that he sent people out specifically tasked to find violations, especially with regard to coke batteries 1 and 2.

The EPA next presented the testimony of Richard Eaton, an Environmental Protection Specialist with the EPA, Region III. He is an air protection inspector located in the Wheeling office, in which capacity he has participated in inspections at MSC over the past four to five decades. Mr. Eaton testified as to taking VEO readings in compliance with the protocol set forth in Method 9 and the requirements for certification as a VEO reader.

On cross-examination, Mr. Eaton testified that the folks at MSC have always been cooperative with him and they were always trying to be compliant with environmental laws. He also admitted that he was sent to MSC by Mr. Hagedorn to get violations on the battery 1 and 2 stacks. Mr. Eaton conducted an inspection of MSC on March 17, 2011, and observed no deficiencies. He also stated that when conducting VEO observations, if there is no violation no report is made.

The EPA's third witness was Alfred Carducci, an Environmental Resource Specialist, Region III with the West Virginia Division of Air Quality. Mr. Carducci testified that Brooke and Hancock Counties have the highest air emission scores among the four counties of the Northern Panhandle. According to a report that he presented, the air quality was unhealthy for normal folks on one (1) day in 2012 and was unhealthy for sensitive folks on twelve (12) days during the same period.

Mr. Carducci testified as to taking VEO readings using Method 9. He stated that he has taken readings that did not comply with Method 9, including at MSC, so that the parties would know what was going on in the plant.

On cross-examination, Mr. Carducci admitted that the personnel at MSC were always cooperative and that they were seeking to comply with environmental laws. He noted that while a 2004 Consent Decree between MSC and the West Virginia Department of Environmental Protection required only a few through walls in battery 8 be replaced, MSC did more than required. Forty-eight ovens had complete through walls re-bricked and the other 31 ovens had six flues replaced on the coke side and four flues replaced on the pusher side.

In a 2008 inspection, the witness found that there were no leaking doors on either the pusher or coke side of the battery and that overall the battery was in good working order. In the same inspection, he noted that the battery 8 stack emissions were in compliance.

Mr. Carducci also testified that nationally two thirds of all SO₂ emissions are from power plants and there are issues with the wind blowing particulate matter and a lot of SO₂ into West Virginia from the Cardinal Power Plant in Ohio. He noted that the prevailing wind at MSC comes from Ohio to West Virginia.

The fourth witness called by the EPA was John McGrew, who had retired from U.S. Steel's Clairton Works, where he was involved with their coke plant in one capacity or another for 38 years. Mr. McGrew was asked to take a look at the coke oven batteries to determine the particulate emissions from the combustion stack and also to form an opinion of what repairs were needed.

Mr. McGrew described a typical coke oven and how it works. A coke oven is approximately 16 to 19 inches wide, being wider on the coke end than the pusher end. The ovens are 54 feet long and 21 to 23 feet high. The battery at MSC is a 6 meter battery.

The top of the oven has six openings. Four of those openings are charging holes, which is where the larry car, on a track above the oven, dumps the coal into the oven. Once the oven is charged with coal, there are peaks in the coal within the oven. A leveling bar from the pusher side then runs in and levels the coal, providing a consistent tunnel head for the gases to escape during the coking cycle and providing uniform heating of the coal. The other two holes in the top of the oven are for the gases to escape into a collector main and delivered to the by-products area.

In the walls between the ovens are thirty flues used to heat the coal. If there is a void in the wall that permits the gases to escape from the oven chamber to a flue, the gases and particulate matter will flow into the flues and, ultimately, out the combustion stack into the atmosphere. Voids are usually cracks, loose mortar joints, and missing mortar.

The areas of the oven walls which are most prone to failure are the end flues, the flues closest to the doors. This is due to the thermal shock created when the doors are removed and the hot walls are exposed to cold or cool outside air.

The gases which flow into the collector mains for delivery to the by-products area are exposed to flushing liquor that runs into the collector main to take out the volatile gases and some of the particulate matter. The flushing liquor is hot and is 99% water.

Mr. McGrew conducted a visual inspection of the coke ovens on battery 8, which he described as the “first step” in determining the condition of the ovens. The alternatives for an oven repair are trowel patching, spray patching, ceramic welding, partial end flue repair, or through wall repair. He generally spent two to three minutes looking into each oven. He did not actually enter the ovens. It is common for a coke oven to have cracks. Unless the

crack goes deep enough into the wall and into a flue, it is just a crack and he would not be concerned about it.

While waiting for an oven to become available for inspection, Mr. McGrew looked at the other parts of the coke battery. His impression of the alleyways was that the housekeeping could improve, but that otherwise he thought the alleyways were “in great shape.” The basement area, where all the gas piping is located, “looked real good down there.”

He went into the reversing room and found it interesting that they have a scale on the larry cars to provide a readout of the weights that the larry car is providing to the ovens. He found that feature to be very important and one that was lacking at Clairton.

Mr. McGrew noted that MSC has automatic door and jamb cleaners for the oven doors, and they have a door-cutting program where doors are removed and cleaned and which is good. This helps reduce emissions.

He found MSC’s charging practices are right on target, and opined that the number 8 battery was the tightest that he had seen of a lot of 6 meter batteries. The battery is in “great condition, structurally.”

Mr. McGrew inspected the top of the battery and noted everything was as it should be. With regard to the larry car and tracks, he gave it an “A plus.”

Based upon his visual inspection of the oven walls, Mr. McGrew identified the walls as tier 1, tier 2, and tier 3. Tier 1 would be the walls that he “considered as needing some sort of aggressive action done, whether it would be additional patching, more ceramic welding, and for the most part, a through wall replacement.” Tier 2 walls “could possibly be a problem short term, beyond what those tier 1 ovens were.” The tier 3 walls need more

patching and ceramic welding, which could prolong the life of the walls. He admitted that the walls at MSC were in better condition than the ones he saw at the Clairton coke plant.

A more definitive way to determine whether there is leakage from the coke oven into the flue is to actually look down into the flue using the inspection ports on top of the ovens. On cross, Mr. McGrew stated that his inspection was a baseline inspection of developing what the refractory looked like in the oven. The next step would be to look down into the flues on the walls that he identified as tiers 1, 2, and 3. With the flue inspections and additional monitoring, it can be determined whether repairs less than a through wall replacement are appropriate. Mr. McGrew did not do an inspection of any of the flues.

Mr. McGrew also admitted that having 37 exceedances over a period of a little over two years is a pretty good performance for a battery.

Mr. McGrew noted that he estimated the cost of a single through wall repair at anywhere between 1.2 and 2 million dollars per wall.

Mr. McGrew also briefly described a computerized Coke Management System, which was in place at Clairton and which permitted the plant to more closely monitor the performance of each individual oven and which helped identify any oven walls that needed attention.

The EPA's fifth witness was Karl Svoboda, a process engineer and consultant with a firm called ByP Consulting. Mr. Svoboda was retained "to look at the general condition of the by-products [plant at MSC] to determine or to assess whether it's capable of performing to expectations in terms of desulfurization of coke oven gas." Mr. Svoboda has extensive experience in the by-products aspect of coke plants. Mr. Svoboda described the by-products processing method at MSC.

In connection with this case, Mr. Svoboda visited MSC on one day in December, 2012. He noted that the sulfuric acid plant seemed to be in fairly good shape.

Mr. Svoboda concluded that the by-products plant cannot perform in a manner to meet the SO₂ standard of 50 grains or less, due to the inability of the primary coolers to handle the naphthalene in the fluid. Mr. Svoboda recommended removing the existing internals in the present primary coolers and replacing the internals with gas leak distribution trays and establishing new circulation directly from the bottom of the coolers. He also recommended that MSC go to a cooling device which is a plate interchanger, special design, already available, which operates at very high velocity, developing shear forces on the surface to prevent any deposition of naphthalene and tar.

The system described above was invented by Mr. Svoboda, who would have an interest in seeing his system installed. To convert each of the two primary coolers at MSC would cost in excess of \$3,000,000.00.

Mr. Svoboda stated that the preferred temperature for the material coming out of the primary cooler is 24 degrees Celsius and that the present primary coolers were unable to achieve that temperature.

Mr. Svoboda also expressed concern over the fact that MSC discharged coke oven gas condensate ("COGS") into an open trench, over the reliability of the plant's power supply, and the lack of a distributed control system covering the entire by-products operation.

Upon cross examination, Mr. Svoboda admitted that he did not conduct an analysis of the causes of SO₂ exceedances at MSC. Counsel took Mr. Svoboda through a list of the attributed causes of the SO₂ exceedances, many of which were unrelated to the primary

cooler. He also admitted that operating by-products plants may have temperatures from the primary cooler at 28 to 30 degrees.

Mr. Svoboda was shown the operating and maintenance manual for the hydrogen sulfide scrubber, which was specified by Mr. Svoboda's colleague. This document shows that the maximum temperature before the precooler is 66 degrees Celsius, although the temperature in the hydrogen sulfide scrubber must be kept below 30 degrees Celsius. The witness admitted that if the design temperatures for the hydrogen sulfide scrubber are being met by the existing primary cooler then MSC would not need to replace the primary cooler.

EPA's sixth witness was Timothy Leon-Guerrero, a meteorologist in the air quality modeling and analysis group in the air protection division of the Philadelphia EPA regional office. He was asked to discuss the emissions from MSC and their impacts on the local ambient air-monitoring network. According to the witness, emissions from the MSC facility are contributing to high monitor concentrations that currently exceed the one-hour SO₂ National Ambient Air Quality Standard ("NAAQS"). He arrived at his opinion by reviewing the monitoring data for the air-monitoring sites nearest the MSC facility.

The closest air monitor to the MSC facility is the Mahan Lane monitor. He would expect emissions from the MSC facility to contribute "quite a bit" to the SO₂ readings at Mahan Lane, based upon the fact that the maximum impact of emissions are found at a distance of 10 times the stack height. The MSC stacks are under 100 feet.

Mr. Leon-Guerrero looked at six sources of SO₂ emissions closest to the Mahan Lane monitor, being MSC, the Koppers tar plant, Cardinal Power Plant, Weirton Steel, Mingo Junction Energy Center and R.G. Steel-Wheeling steel mill.

On cross examination, the witness admitted that in 2012 and in all prior years, the SO₂ emissions from the Cardinal Power Plant were far in excess of the emissions from MSC. For 2012, the SO₂ emissions from Cardinal were 16 times higher than those from MSC. Despite being a modeler and meteorologist, Mr. Leon-Guerrero did not conduct any analysis of the role that Cardinal might play in the readings at the Mahan Lane metering site.

When confronted with the fact that the SO₂ readings at Mahan Lane have steadily decreased over recent years and for the year 2012 was within the standard set by the NAAQS, the witness shifted to relying on readings at the Marland Heights metering site. When asked by the Court whether he was suggesting that the MSC plant had more effect on Marland Heights than Mahan Lane, the witness gave a non-responsive answer, which failed to consider the prevalent winds in the area of MSC. This Court will give little or no weight to this witness's testimony.

The seventh witness called by the EPA was Dr. Thomas Luben, a senior epidemiologist in the National Center for Environmental Assessment, who presented evidence concerning the adverse health effects of SO₂ and particulate matter 2.5. He noted that SO₂ is a more local pollutant which causes respiratory health effects, while PM_{2.5} is a more regional pollutant which causes adverse cardiovascular health effects.

The EPA's eighth witness was Motria Caudill, an environmental scientist in the air and radiation division of EPA Region V, Chicago, who discussed the health risks of benzene. Ms. Caudill examined data for various pollutants from air monitoring sites and focused on certain sources. One of the monitoring sites with elevated levels of benzene was located in Steubenville, Ohio, which had the highest levels of benzene in EPA Regions

III and V for 2011 and 2012.

The EPA next tendered designated portions of the deposition of Cheryl Scott, Ph.D., who was called to testify as to the health effects of exposure to coke oven emissions. Dr. Scott has never studied coke oven emissions, rather she conducted a literature review to present the findings of others. She is not certain whether she has ever been to a coke making facility, nor has she reviewed any documents specific to MSC.

It is Dr. Scott's opinion, based upon the literature that she reviewed, that coke oven emissions contain carcinogens, such as arsenic, benzene, cadmium, formaldehyde, and benzo[a]pyrene. She was unaware of any regulations or standards for exposure concentrations of these substances. She was unfamiliar with any emissions data for the MSC, having not reviewed that data. She was also unfamiliar with what pollution control devices were in place at MSC.

EPA's tenth witness was Robert Harris, a Certified Public Accountant from Birmingham, Alabama, who was requested to calculate the economic benefit gained by MSC by delaying and avoiding certain capital expenditures and to discuss the economic impact of a penalty may have on MSC. Mr. Harris opined that: (1) MSC could afford to pay a significant penalty IF it continues to receive funding from Severstal, one of its members; (2) the financial condition in which MSC finds itself today is in large part a result of certain decisions made by its members; and (3) recent actions by Severstal or SNA Carbon show that the company is committed to keeping MSC in business.

Mr. Harris described the formation and structure of MSC, and how the changes made in the "transfer price" formula for coke changed over the years. He described how the bankruptcy of RG Steel, one of the two members of MSC, affected the cash flow.

With respect to economic benefit analysis, Mr. Harris opined that MSC saved approximately \$2,000,000.00 by delaying compliance with environmental requirements.

Upon cross-examination, Mr. Harris admitted that if the Court does not accept Mr. Svoboda's opinion that the primary cooler had to be replaced, Mr. Harris's calculations on economic benefit are incorrect. He also noted that since the RG Steel bankruptcy, sales have dropped dramatically, cash flow went negative, borrowing has increased, and working capital declined. While dividends were paid in the past to the members, the company's financial situation was a lot different than it is now.

Mr. Harris reported that as of October 31, 2013, MSC had a net loss of \$37,665,000. As of October 31, 2012, the net loss was \$20,000,341. If MSC were unable to get money from its member, a \$10 million penalty would be catastrophic.

EPA's eleventh witness was Martin Lee Matlin, an environmental scientist with EPA Region III, who acts as a compliance officer under the Resource Conservation and Recovery Act ("RCRA"). Specifically, the witness works under Subtitle C, which deals with hazardous waste, and Subtitle I, which deals with underground storage tanks.

Mr. Matlin testified that the coke oven gas condensate contains cyanides, ammonia, sulfides, benzene, phenols, and toluene. The level of benzene in the condensate is 200 times the safe level. He noted that the coke oven gas condensate was gathered into drip legs. Thereafter, a truck goes around, gathers the condensate, and discharges the condensate into an open trench.

Mr. Matlin contended that the manner in which MSC handles the condensate is inconsistent with it being a valuable recyclable. He equated the use of the trench as discarding the material. He then stated that if it is discarded and is a hazardous waste,

then the tanks into which it flows would be hazardous waste tank systems.

Mr. Matlin then discussed muck oil. At one point, the muck oil was sold, later sprayed on the coal, most recently simply stored in a tank. MSC stopped generating muck oil in 2002, and by 2011 all the muck oil had been removed.

Mr. Matlin also described roll off containers in the “lay down yard.” He stated that MSC was required to make hazardous waste determinations for each roll off. While MSC did make determinations, the determinations were inadequate.

On cross-examination, Mr. Matlin testified that air emissions from the trench would not be regulated by RCRA. He stated that EPA was not trying to extend RCRA over the emissions. “We’re just saying that the emissions are evidence that the facility is not treating this as a valuable product; and therefore it is being discarded.” Mr. Matlin had been made aware that MSC no longer utilizes the trench in transferring the condensate to the tar decanter but rather uses a pressurized hose connecting directly to the tar decanter, but said that he could not comment because he did not know the details.

With regard to the muck oil or purifier oil, he conceded that there had never been a spill from the muck oil tank.

With respect to the roll off containers, EPA has no evidence that MSC handled any hazardous waste improperly.

Following Mr. Matlin’s testimony, the EPA rested its case.

Thereafter, the parties stipulated that the EPA was withdrawing its RCRA Subchapter I claim, involving the tanks at the drip legs. This is cause of action number 12. Accordingly, this Court granted a directed verdict as to claim number 12, but took MSC’s motion for directed verdict as to the other claims under advisement.

MSC's first witness was Thomas Lallone, the manager of by-products and coal handling. Mr. Lallone noted that the by-products plant is really a small chemical plant, the sole purpose of which is to clean the coke oven gas.

Mr. Lallone stated that the acid plant and the desulfurization plant fell directly under his supervision, and that levels of hydrogen sulfide are monitored on a continuous basis - "every second of every day." Those readings are shown on a computer screen next to Mr. Lallone's desk. Mr. Lallone described in some detail the operations of the by-products plant.

He described problems caused by power outages, which are more prevalent in areas outside the plant, such as lightning storms, people hitting telephone poles, and animals in the substation, and the steps taken to prevent or reduce future outages.

Mr. Lallone spent some time discussing a chart, marked Lallone Demonstrative 7, which listed the causes of exceedances in H₂S over the past five years. He pointed out that the numbers on the chart are the number of exceedances, not the number of incidents. For example, he stated that there were two incidents caused by operator error, yet those two incidents resulted in 107 exceedances.

Mr. Lallone also discussed the by-products produced by the by-products plant, which include ammonia sulfate, which is used as fertilizer and is sold to Wilson Industries, light oil, containing the benzene, toluene, and xylene and which is sold to Marathon Oil.

The witness testified that the by-products plant is shut down on a scheduled basis two times per year for preventative maintenance and cleaning. He noted that since 2005 MSC has spent \$3,056,993 on capital expenditures on the by-products plant.

Mr. Lallone stated that with the existing plant, he is able to achieve H₂S levels in

compliance with the 50 grains per hundred cubic feet standard. He stated that, excluding an issue with the four-stage heat exchanger, last year MSC was able to achieve 99.4% compliance with the standard. As of trial, compliance for 2014 was running at 99.6% compliance.

The design parameter for the H₂S scrubber in terms of temperature into the precooler is 55 degrees, with 66 as the maximum.

The second witness called by MSC was Bud Smith, director of environmental control at MSC. He stated that he was the individual at MSC overseeing RCRA compliance. He noted that with regard to the muck oil or purifier oil, there had never been a leak from the tank, that the contents were removed and properly disposed of, and the tank cleaned and taken out of service.

With regard to the trench into which coke oven gas condensate was discharged, Mr. Smith testified that the condensate is no longer discharged into a trench, but rather is transferred directly from the drip leg truck into the tar decanter.

Mr. Smith stated that the current customer of the coke produced by the plant is Severstal North America, and that the by-products plant sells the ammonium sulfate for fertilizer, the light oil is sold to Marathon Oil, and the coal tar is hard-piped to Koppers. The cleaned coke oven gas is recycled for use in the coke making operation.

When the plant was in full operation, it employed around 450 people. When asked who at MSC is responsible for environmental compliance, Mr. Smith responded that everybody in the company is responsible.

Mr. Smith was questioned about the 2004 consent decree between Wheeling-Pittsburgh Steel Corporation and its successors and the State of West Virginia. He noted

that while there was no requirement to replace through walls in the consent decree, MSC completed 48 through wall repairs. Where the consent decree called replacement of two end flues on the pushing side and four end flues on the coking side, MSC replaced at least six flues on each side and sometimes eight flues on one side.

Mr. Smith also noted that MSC had just completed through wall repairs on four walls, C18, C19, C20, and C21.

The witness was also asked about the 1996 consent decree with the EPA. He had no involvement other than to report compliance and track stipulated penalties. He noted that the penalties could not be paid until payment is requested by EPA. EPA has never made a request or demand for payment.

On cross-examination, Mr. Smith testified that MSC would only be liable for exceedances that occurred after the formation of MSC in 2005.

MSC's third witness was Harry Immurs, the owner of a consulting company that provides technical services for the coke industry. He formerly worked 25 years for Stelco, which is now part of U.S. Steel. He stated that he had never recommended a through wall replacement based upon an eyeballing of the oven chambers. He stated that other steps should be taken, such as looking down the inspection ports into the flues to see if gas is escaping from the oven chamber into the flues. Then one could pressure test the oven chamber. If a leak is found then it can be repaired by trowel patch or spraying the oven wall. The next step after patching would be ceramic welding, followed by an end flue replacement, then, finally, a through wall repair.

With respect to this case, Mr. Immurs was asked to try to determine the root cause of the opacities. These can be caused by incomplete burning of the gas in the flues or by

the escape of materials from the oven chamber into the flues.

Mr. Immurs matched the VEOs with the COM data as part of his analysis. He found the number of exceedances to be insignificant. His ultimate opinion was that all of the through walls on the list prepared by Mr. McGrew do not need to be replaced immediately and that there is no immediate concern of failure of the walls. With diligent patching, by taking data and comparing to things and by doing more investigation as to root causes, the areas that may possibly leak could be repaired so that they do not leak.

The witness agreed with Mr. McGrew that battery 8 was in great condition.

On cross-examination, Mr. Immurs stated that the method of looking into each oven and mapping the walls is a standard practice in the industry, and that he did not do that because he trusted Mr. McGrew's mapping of the walls. In this case, due to time constraints, Mr. Immurs did not look down the inspection ports into the flues to see if gas was escaping from the oven chamber into the flues, nor did he pressure test the oven chambers.

Mr. Immurs agreed with Mr. McGrew that MSC was doing a good job in keeping the air channel inside the doors clean and that MSC was doing a great job loading the ovens.

By comparing the VEO exceedances with the schedule of charging the ovens, Mr. Immurs identified certain walls that were associated with exceedances. He testified that it is necessary to marry up the COM data on one side with the charging schedule on the other over time to get a picture of the condition of an oven wall. Mr. Immurs recommended that MSC have an automated system to carry out the comparisons so that MSC could better direct its resources.

The witness stated that the life span of a typical 6 meter coke battery is 35-40

years.

The next witness called by MSC was Robert Adoranti, a former production and project engineer at Dofasco, an integrated steel mill in Hamilton, Ontario, where he worked for 32 years in the coke ovens and by-products area. Mr. Adoranti found that MSC's maintenance of the acid desulf plant was very good. On inspection, the equipment condition was the same as any other average coke plant.

Mr. Adoranti stated that the by-products plant, as designed, is capable of meeting the less than 50 grains of H₂S standard. The next issue after capability is reliability.

He testified that he disagreed with Mr. Svoboda that the primary cooling unit was obsolete. He stated that the primary cooler at MSC was old technology, but not obsolete. In Mr. Adoranti's opinion the process used by MSC is capable of lowering the temperature sufficiently for eventual entry into the H₂S scrubber.

The witness noted that many of the spiral heat exchangers were plugged and recommended cleaning of all of the spiral coolers. He would expect that upon completion of the cleaning that the primary cooler system would meet specifications.

The witness noted that the extractive cooling system championed by Mr. Svoboda is a very good process, but that does not mean that the present MSC system does not work.

With regard to the H₂S scrubber, Mr. Adoranti agrees with Mr. Svoboda that the scrubber is functioning properly so long as the temperature of the incoming gas is not a problem. He also has concluded that based upon the work that has been done on the desulfurization plant over the past few years, the plant is becoming more reliable.

The fifth witness called by MSC was Patrick Smith, the environmental manager at

MSC. Mr. Smith testified that the coke plant retains the services of QSEM as consultants to monitor environmental compliance. The QSEM personnel are to inform Mr. Smith if there is any sort of an exceedance. The QSEM people take VEOs for combustion stack number 8 on a weekly basis. The QSEM contract costs the plant about \$240,000 per year.

Mr. Smith reviews the data from the H₂S monitors and ensures that the monitors are working properly. He reports any H₂S exceedances to WV DEP and the EPA. The reports include what happened to cause the excursion, how high the concentration went up, when it began, when it ended, and what was done to bring the number back into compliance. He also discusses the root cause and whether it was a force majeure.

On cross-examination, Mr. Smith testified that MSC is a large quantity hazardous waste generator. He discussed the formerly used method of emptying the coke oven gas condensate into the grated trench and noted that that method is no longer used at the plant; now there is a hard pipe so that the truck unloads directly into the tar decanter.

MSC's sixth witness was Marcia Williams, a consultant on RCRA issues. Ms. Williams was a charter employee of the EPA, ultimately becoming director of the office of solid waste, which is the office responsible for implementing RCRA. As such, she was the national program manager for the RCRA program within the EPA.

Ms. Williams testified that the Resource Conservation and Recovery Act (RCRA) is a waste statute with two important purposes. One is to protect health and the environment and the other is to encourage resource recovery. Subtitle C of RCRA contains the hazardous waste provisions of the regulations.

She stated that a waste cannot be a hazardous waste unless it also meets the definition of solid waste. RCRA's regulation of air emissions is limited to the regulation of

materials that are already determined to be a solid waste and a hazardous waste.

It was Ms. Williams' opinion that the coke oven gas condensate was being legitimately recycled, in that it was being used to cool and condition the coke oven gas as well as contributing to resource recovery of a number of other constituents, including ammonium sulfate, light oils, and tars. In addition, any air emissions that came off the coke oven gas condensate while in the conveyance trench would not be regulated under RCRA because the COGC is not a waste.

The final witness called by MSC was Larry Hottenstein, an environmental consultant specializing in air quality. At one point, the witness taught visible emission observers. He described the method for conducting proper VEOs.

The parties stipulated as to whether many of the VEO reports were compliant with Method 9, leaving nine readings in dispute. Mr. Hottenstein proceeded to testify as to the validity of the nine non-stipulated readings.

Having heard and reviewed the testimony and evidence presented by the parties and having reviewed the briefing submitted by the parties, this Court hereby makes the following findings of fact and conclusions of law:

Findings of Fact

1. This lawsuit concerns a coke manufacturing facility in Follansbee, Brooke County, West Virginia ("MSC"). (See Joint Pretrial Order, Dkt. 175, Attachment A, Stipulation of Facts ¶ 1) (hereafter, "Stipulation of Facts").

2. MSC was formed in September 2005 as a joint venture between Wheeling Pittsburgh Steel Corporation ("Wheeling Pitt") and SNA Carbon, LLC, a wholly owned subsidiary of Severstal North America, Inc. ("Severstal"). (Ex. P-84 at EPA3-080835).

3. MSC was created to own and refurbish the coke batteries at the coke plant. (Tr. 529).

4. MSC's members determined that the coke batteries must be refurbished in order to remain productive and compliant with existing and foreseeable regulations. (Tr. 530).

5. Another purpose of MSC's formation was to supply a dedicated source of high grade coke for its members. (Tr. 528). In a September 30, 2005 press release, Severstal's President and CEO described the MSC joint venture as "a significant milestone in our quest to secure a reliable and competitive domestic supply of metallurgical coke for our steelmaking operations." (Ex. P-84 at EPA3-080980; Tr. 531).

6. Wheeling Pitt contributed the coke plant and \$40 million to the joint venture, while Severstal contributed \$120 million. (Tr. 532).

7. The purpose of the cash contributions was to refurbish the coke batteries, as the coke prices MSC would charge its members were not designed to cover capital refurbishment costs or major capital improvements. (Tr. 532; Ex. P-84 at EPA3-080836).

8. In August 2008, Severstal acquired Wheeling Pitt's 50% interest in MSC and the coke plant. (Ex. JT-24 at 7).

9. Severstal companies consequently owned 100% of MSC and the coke plant until March 2011, when RG Steel, LLC, purchased a 50% ownership interest in MSC. (Ex. JT-24 at 7).

10. RG Steel Wheeling filed for bankruptcy protection on May 31, 2012. (SOF ¶ 4). One week later, Batteries 1, 2 and 3 at the coke plant were idled because RG Steel Wheeling no longer needed coke for its idled steel plants. (Tr. 689).

11. MSC has owned the Follansbee Facility since September 2005. (Stipulation of Facts ¶ 5).

12. MSC has operated the Follansbee Facility since September 2012. (Stipulation of Facts ¶ 6).

13. RG Steel operated the Follansbee Facility under contract from MSC until September 2012. (See Stipulation of Facts ¶ 7).

14. MSC currently owns and operates the Follansbee Facility. (Stipulation of Facts ¶ 8).

15. Coke consists primarily of the elemental carbon that remains after all volatile materials are driven off through heating coal in brick ovens in the absence of oxygen. (Tr. 599).

16. The coke plant consists of four batteries of coke ovens: Batteries 1, 2 and 3 contain a total of 145 ovens that are ten feet tall, originally built between 1910 and 1916 and rebuilt between 1953 and 1964; and Battery 8 contains 79 ovens that are six meters tall, built in 1976 and partially rebuilt in 2005-2006. (Tr. 785-786, 832, 242).

17. The coke plant contains a single byproducts plant that processes the raw coke oven gas driven off of the coal during the coking process at all four batteries, removing and recycling certain constituents before being combusted to heat the coke ovens and operate boilers. (Tr. 599, 631-632).

18. The coke plant operates 24 hours a day, seven days a week. (Tr. 784).

Third Claim for Relief - Particulate Emission Violation at Coke Oven Batteries

19. MSC's coke plant is a manufacturing process that emits particulate matter ("PM") from various emission sources. (Tr. 34-35).

20. In 2005 to 2006, MSC completely replaced 48 through walls in Battery 8 and all end flues (pusher side and coke side) for the remaining 32 walls (six flues on the coke side and four on the pusher side). (Ex. D-29; Tr. 187-88).

21. MSC performed that work in connection with a Consent Decree dated March 2005 between Wheeling-Pittsburgh Steel Corporation and WVDEP ("WVDEP CD"). (Ex. D-47; Tr. 736-38).

22. The WVDEP CD did not require the replacement of any through walls; it expressly required the replacement of the brick in 4 flues on the pusher side and 6 flues on the coke side of all the ovens in Battery 8. (Ex. D-47, Section III.4; Tr. 173).

23. MSC elected to perform the through wall replacements without any compulsion by WVDEP. (Tr. 736-38).

24. Once MSC completed the work, WVDEP did not require any further repairs or replacements, and the WVDEP CD terminated when MSC submitted the initial compliance certification on May 12, 2006. (Ex. D-53; Tr. 178-179).

25. Al Carducci of WVDEP was responsible for monitoring MSC's compliance with the 2005 WVDEP CD. (Tr. 172-73).

26. Although the 2005 WVDEP CD provided that any violations of the Consent Decree may subject MSC to penalties and injunctive relief, the WVDEP has not sought injunctive relief against MSC. (Tr. 179).

27. WVDEP was satisfied with the Battery 8 rebuild pursuant to the 2005 Consent Decree; overall, the battery was in good working order. (Tr. 188).

28. The primary EPA enforcement person, James Hagedorn, was not aware of the WVDEP Consent Decree when he was performing his investigation of the MSC opacity

violations. (Tr. 65).

29. Mr. Hagedorn had no opinion on whether the Battery 8 rebuild in 2005 to 2006 pursuant to the WVDEP Consent Decree was effective. (Tr. 66).

30. Nevertheless, the USEPA contends that all through walls in Battery 8 that were not previously replaced in 2005 to 2006 (hereafter “through walls”) must be replaced because they are causing opacity in the combustion stack emissions. (Tr., Opening Statement 10).

31. The USEPA based its assertion that all of the through walls need to be replaced entirely on the testimony of its expert witness, John McGrew. (Tr. 53, 55, 57).

32. John McGrew performed a one-time, approximately 2-4 minute visual inspection of the interior walls of the oven chambers and looked for cracks in the walls. (Tr. 283, 284-85).

33. A visual inspection of oven walls for cracks is generally only the first step in evaluating the condition of a battery and the appropriate repairs, if any, that may be necessary. (Tr. 298, 780).

34. Coke oven walls commonly have cracks. (Tr. 286).

35. In fact, only cracks that penetrate all the way through the wall to the flues can contribute to higher opacity. All other cracks need not be worried about. (Tr. 286).

36. Coke oven visual inspections, like the one performed here, cannot determine whether any crack actually went all the way through the wall into the flue. (Tr. 292, 286, 781).

37. Carbon released from baking the coal at high temperatures can seal cracks in the oven walls, providing an effective, reliable, and long-term solution for cracks. (Tr.

291, 91, 771-72).

38. Walls with cracks can still be good walls that would not contribute to stack emissions. (Tr. 270-71).

39. Mr. McGrew could not testify whether any of the cracks that he identified during his inspection were pathways for the leakage of gas; he conceded that it would require conjecture to assert that they are a probable cause. (Tr. 292).

40. The depth, history, and future growth of a crack cannot be determined through a single visual inspection. (Tr. 287-88).

41. The width of the cracks was hard to determine based on the visual inspection. (Tr. 268).

42. Coke oven inspections at U.S. Steel, where John McGrew worked for 38 years, are more thorough than the one conducted by Mr. McGrew at MSC. (Tr. 305).

43. There are additional investigation methods to determine whether leaks are resulting in higher opacity. (Tr. 298).

44. One method is to look inside non-burning flues through the inspection caps/ports to see if gas is escaping out of the oven chamber, which would have a candle effect in the oven chamber. (Tr. 299-300, 59, 765).

45. Another method is pressure testing the flues. The USEPA's expert did not know how to perform a pressure test. (Tr. 299, 766-67).

46. USEPA's expert did not perform either of these testing methods. (Tr. 299, 300).

47. Mr. McGrew's investigation was a limited scope engagement, with more work necessary in order to make a definite determination as to the need for through wall

replacements. (Tr. 302).

48. USEPA's expert, John McGrew, expressly conceded that MSC's Battery 8 is "in great condition, structurally." (Tr. 262). He gave the condition of the larry rail ("larry" comes from the British term for truck "lorry") an A plus and testified that he "saw quite a few good walls." (Tr. 263-264, 271).

49. Mr. McGrew testified that he "didn't see a lot of deficiencies in anything related to Mountain State Carbon's employees and what they did It was the cleanest that I've seen in quite a while." (Tr. 306).

50. MSC's facility is well-maintained and clean. (Tr. 306).

51. The charging practices are right on target, reducing the likelihood of obstruction in the tunnel head. (Tr. 258-59).

52. Mr. McGrew stated that the walls at U.S. Steel's Clairton facility were in worse condition than those at MSC, some even containing large holes. (Tr. 277).

53. According to Mr. McGrew, "I hate to say this, but I saw walls in worse condition than the walls I saw at Mountain State. And those walls [at U.S. Steel Clairton Works] had large holes and I expected to see that at Mountain State and I did not see that." (Tr. 277).

54. "Some of the walls that I saw at U.S. Steel when we decided to do through walls were in a lot worse condition than what I observed at Mountain State." (Tr. 298).

55. Prudent management of coke oven walls requires an assessment of a variety of possible corrective actions other than through wall replacement, such as patching, panel replacement, ceramic welding, and end flue replacement. (Tr. 289, 276, 60, 772, 774-75).

56. Patching, which involves applying mortar to the area of a crack, is a good

regular maintenance process commonly performed by all coke plants. (Tr. 768-69).

57. U.S. Steel, where John McGrew worked for 38 years, assessed the viability of patching, panel replacement, ceramic welding, and end flue replacement in determining the appropriate type of repair. (Tr. 289-90).

58. It is both an industry standard and an appropriate practice to replace through walls only after patching, ceramic welding, or flue repairs are no longer feasible. (Tr. 306).

59. MSC has an effective repair program for its through walls and end flues.

60. MSC maintains effective operational and maintenance practices that reduce combustion stack emissions.

61. MSC has a door cutting program, which is important for ensuring that the doors continue to fit into the oven chamber and that the gas can properly escape. (Tr. 259-60).

62. John McGrew categorized specific through walls into three tiers – 1, 2, and 3. (Ex. P-280).

63. Mr. McGrew described his categorization as follows:

“tier 1 would be the ovens that I considered that needed some sort of an aggressive action done, whether it would be additional patching, more ceramic welding, and for the most part, a through wall replacement. And then I addressed another group of ovens that could possibly be a problem short term, beyond what those tier 1 ovens were. And then I identified a group of ovens with tier 3, that under more patching and ceramic welding, ... the life of those oven walls could be prolonged.”

(Tr. 271-72).

64. The above categorizations were based solely on the visual inspection addressed above.

65. Mr. McGrew testified more specifically about this categorization on cross examination, confirming that immediate through wall replacement is not necessary:

Q. Okay. So when you have tier 1, for example, you're not saying that those specific through walls need to be replaced now?

A. In the very near future.

Q. But you didn't calculate how long that is, correct?

A. No. I would like to see them all done in the next five years.

(Tr. 309).

66. As Mr. McGrew explained on cross-examination, identification of 3 tiers of through walls prioritizes the walls for "additional monitoring," which in turn will assist in "determin[ing] whether repairs less than complete through wall replacement are appropriate." According to Mr. McGrew, "that's what we're saying by tier 1, 2, and 3." (Tr. 309).

67. Under the standard for through wall replacement, replacement does not occur until after patching, ceramic welding, and end flue repairs are no longer feasible. "It's not any different than any other coke plant, I believe, that you're going to try to prolong the life of that wall as long as you can," which is "an appropriate and customary thing in this industry to do." (Tr. 306).

68. Mr. McGrew specifically testified that repairs other than immediate through wall replacement are appropriate:

Q. So as a practical matter, you knew that on the walls that you say should

be removed, that Mountain State Carbon can do patching or ceramic welding or end flue repairs to prolong the life of that wall, correct?

A. And they proved that to me when I was there for my inspection. They were working on this C7 wall, I believe, that was in such bad shape.

(Tr. 308-09).

69. It is premature to recommend through wall replacements based on visually inspecting ovens once for a few minutes. (Tr. 765).

70. EPA developed a testing methodology, known as "Method 9," used to determine PM emissions based on the opacity of the emissions.

71. EPA's Method 9 was established to increase the reliability and accuracy of visible emission readings by providing a set of observation rules and a certification procedure to train observers. (40 C.F.R. Ch. I (7-1-09 Edition), Pt. 60, App. A-4, Meth. 9 at 312).

72. Method 9 requires a clear view of the emission source and that the observer position him/herself a distance of two to three stack heights away, with the ability to read the plume 1-2 feet above the stack, and at an angle that allows for reading straight through the densest part of the plume, approximately perpendicular to the plume direction without interference from wind. Method 9 also requires that the observer position him/herself so the sun is oriented at a 140 degree sector to his/her back. (40 CFR Ch. I (7-1-09 Edition), Pt. 60, App. A-4, Meth. 9 at 312).

73. Using a Method 9 visible emission observation ("VEO") form, the observer records specific information regarding the emission source and field conditions at the time of the observation including: name of the plant, facility and emission point location, type of

facility, observer's name and affiliation, date and time of observation, estimated distance to the emission location, approximate wind direction, estimated wind speed, description of the sky conditions (presence and color of clouds), plume background, a sketch of sun, source, and observer positions, distance from the emission outlet to the point in the plume at which the observations are made, and opacity observations at 15-second intervals. (40 CFR Ch. I (7-1-09 Edition), Pt. 60, App. A-4, Meth. 9, Section 2.2 at 312).

74. To maintain a certified status for visible emission readings by Method 9, an observer must take a test every 6 months by reading 25 white and 25 black smoke plumes. The observers must correctly read the opacity within 15%, with an overall deviation no greater than 7.5%. (40 CFR Ch. I (7-1-09 Edition), Pt. 60, App. A-4, Meth. 9, Section 3 at 313).

75. When taking a reading, the observer documents an opacity percentage on the visible emission observation form at 15-second intervals. (40 CFR Ch. I (7-1-09 Edition), Pt. 60, App. A-4, Meth. 9, Section 2.4 at 313).

76. When observers have difficulty reading the stack emissions, they sometimes put an "X" in the box on the VEO form. (Tr. 148, 150).

77. Observers read the plume close to where it exits the stack, usually 1-2 feet above. (Tr. 151).

78. Due to the force of the plume, in a light wind of 0-3 mph, the plumes rise above the stack several feet before any potential impact by wind. (Tr. 133).

79. Method 9 observations are conducted at random and Method 9 does not require observers to take readings when a source is not in violation. (Tr. 128).

80. It is common for certified observers to record a VEO only when an opacity

issue arises at a source. (Tr. 128).

81. The above results in data showing only violations and not showing times when the emission source was in compliance.

82. Certified observers from WVDEP completed at least 411 VEO forms since 2004, including at least 174 since February 2007. (Exs. D-8 and D-9).

83. WVDEP observers visually assessed opacity from MSC combustion stacks on additional undocumented occasions without ever completing a VEO form. (Tr. 194).

84. USEPA observers completed at least eight VEO forms since February 2007. (Exs. D-10 and D-11).

85. USEPA observers visually assessed opacity from MSC combustion stacks on additional undocumented occasions without ever completing a VEO form. (Tr. 128).

86. MSC voluntarily has contracted with observers to take weekly VEOs of each combustion stack since at least March 2009 and likely even as far back as 2004. (Tr. 75, 913-14).

87. The USEPA was aware of MSC's performance of weekly VEO readings and could have requested MSC's VEOs, but never did. (Tr. 75-76, 132).

88. Al Carducci of the WVDEP testified that he "was told that we had enough readings done on the [MSC] facility." (Tr. 147).

89. The USEPA failed to demonstrate that VEO readings performed pursuant to EPA Method 9 and WV Reg 7A were neither unavailable nor incomplete.

90. The EPA alleged 50 violations of WV CSR § 45-7. (Ex. D-65c).

91. Of the 50 alleged violations, 37 involve Battery 8 and 13 involve Batteries 1-3. (Id.).

92. Of the 37 alleged violations involving Battery 8: 24 occurred in 2007-08; 7 occurred in 2009; none occurred in 2010; 3 occurred in 2011; 1 occurred in 2012; and 2 occurred in 2013. (Id.).

93. The United States therefore seeks replacement of the through walls in Battery 8 based on only 37 VEOs, when most occurred in 2007-08 and only six have occurred since 2010.

94. The parties stipulated to the categorization of the 50 alleged violations as follows:

14 VEOs found by this Court to be violations of Reg. 7, being VEO's taken on:

02/26/2007

03/27/2007

08/07/2007

01/17/2008

01/31/2008

03/27/2008

04/16/2008

06/12/2008

10/16/2008

11/05/2008

06/11/2009

09/01/2009

02/17/2011

08/08/2012

10 VEOs that the parties agree comply with Method 9, being VEOs taken on:

03/12/2007

03/16/2007

10/26/2007

06/11/2008

08/07/2008

08/20/2008

10/24/2008

07/22/2009

05/23/2013

05/28/2013

17 VEOs that the parties agree do **not** fully comply with Method 9, being VEOs
taken on:

02/08/2007

05/15/2007

05/18/2007

06/28/2007

10/31/2007

01/16/2008

01/18/2008

04/30/2008

05/19/2008

06/03/2008

06/05/2008

06/10/2008

06/25/2008

08/26/2008

03/31/2009

07/30/2009

08/13/2009

9 VEOs that the parties dispute whether they comply with Method 9, being the VEOs taken on:

08/10/2007

08/22/2007

09/20/2007

03/05/2009

09/08/2009

04/20/2010

04/11/2011

06/02/2011 (Battery 2)

06/02/2011 (Battery 8)

95. This Court must therefore determine which of the 9 disputed VEOs comply with Method 9.

96. With respect to the VEO taken on 08/10/2007 (Ex. D-68), the Observation Form shows that the wind is blowing directly toward the observer at 3-6 mph, and therefore this VEO does not comply with Method 9.

97. With respect to the VEO taken on 08/22/2007 (Ex. D-69), the Observation Form shows that the wind is blowing directly toward the observer at 4-8 mph, and therefore this VEO does not comply with Method 9.

98. With respect to the VEO taken on 09/20/2007 (Ex. D-70), the Observation Form shows that the wind is blowing directly toward the observer, but at a light wind speed of 0-3 mph. This VEO does appear to comply with Method 9.

99. With respect to the VEO taken on 03/05/2009 (Ex. D-71), the Observation Form shows that the wind is blowing directly away from the observer, but at a light wind speed of 0-3 mph. This VEO does appear to comply with Method 9.

100. With respect to the VEO taken on 09/08/2009 (Ex. D-72), the Observation Form shows that the wind is blowing directly away from the observer at 6 mph, and therefore this VEO does not comply with Method 9.

101. With respect to the VEO taken on 04/20/2010 (Ex. D-73), the Observation Form shows that the sun is nearly overhead and between the observer and the emission point (as it would be between 12:54 and 1:14 pm). This VEO does not comply with Method 9.

102. With respect to the VEO taken on 04/11/2011 (Ex. D-74), the same appears to contain sufficient information to comply with Method 9.

103. With respect to the VEO taken on 06/02/2011 of the #2 stack (Ex. D-75), the Observation Form shows that the sun is nearly overhead and between the observer and the emission point (as it would be between 12:18 and 12:38 pm). In addition, the wind is blowing toward the observer at 3-6 mph. This VEO does not comply with Method 9.

104. With respect to the VEO taken on 06/02/2011 of the #8 stack (Ex. D-76), the

Observation Form shows that the sun is nearly overhead and between the observer and the emission point (as it would be between 12:41 and 1:12 pm). In addition, the wind is blowing toward the observer at 3-6 mph. This VEO does not comply with Method 9.

105. The evidence shows 27 VEOs that comply with Method 9. Of those, 23 are observations of the #8 stack, and 4 are observations of the 1, 2, and 3 stacks.

106. Monitoring emissions shortly after an oven is charged can tell you whether higher emissions are associated with a particular oven. (Tr. 63; 801-03).

107. Positive pressure inside a coke oven commonly increases for the first hour or more after the oven is charged with coal when there is a greater amount of volatile organics and steam being released from the heating coal. (Tr. 39; 318; 765-66).

108. High opacity combustion stack emissions can be tied to the condition of specific ovens by identifying the oven that was charged just before an increase in opacity. (Tr. 232-34; 783).

109. Computer automation of COM data and coke oven charging times allows analysis of the conditions of coke oven walls over time. (Tr. 231-34; 815).

110. Coke plants other than MSC's utilize COM data and computerized charging times to evaluate the conditions of coke oven walls. (Tr. 233-34).

111. MSC records coke oven charging times on paper forms by hand and has no way of comparing it to COM data other than manually. (Tr. 279-80; 799-803).

112. MSC's coke oven expert, Harry Immurs, recommends that the coke plant install a system to allow it to compare COM data with automated charging times to evaluate the conditions of the ovens over time. (Tr. 814-15).

113. The United States and Shenango, Inc. entered into a consent decree that

established stipulated penalties for opacity violations in amounts ranging from \$100 to \$450. (Tr. 63).

114. The Shenango consent decree allows Shenango to have 132 opacity exceedances per year without penalty. (Id.).

115. The US Steel consent decree allows US Steel to have 33 hours with opacity exceedances per quarter without penalty. (Id.).

116. The United States and Wheeling Pittsburgh Steel Corporation (a predecessor in interest to MSC), entered into a consent decree on January 30, 1996 that established stipulated penalties for opacity violations, from non-combustion stack sources (*i.e.*, sources other than the combustion stack for Battery No. 8), ranging from \$1,000 – \$10,000 per violation. (Ex. JT-8 at 23; Tr. 742).

117. Financial penalties of \$10 million would be “catastrophic” on MSC.

Fifth Claim for Relief - Hydrogen Sulfide Concentration Violations

118. Coke oven gas contains hydrogen sulfide (“H₂S”). (Tr. 841).

119. MSC’s Title V Operating Permit and 1996 Consent Decree with EPA impose a limit of 50 grains of H₂S per 100 cubic feet of coke oven gas, averaged over a 3-hour period. (Exs. JT-1, JT-2, JT-8).

120. MSC has stipulated to 908 exceedances of its H₂S limit from February 7, 2007, through December 31, 2013. (Revised Appendix E).

121. MSC continuously monitors the concentration of H₂S in the coke oven gas to confirm that the concentration is within the limit of 50 grains per 100 standard cubic feet. (Tr. 634-35).

122. MSC reported all of the exceedances at issue in this lawsuit to the United

States.

123. When H₂S concentrations exceed the permitted limit, MSC reports those exceedances to EPA pursuant to the terms of the 1996 Consent Decree. (Tr. 915-16).

124. MSC uses a hydrogen sulfide scrubber to remove H₂S from the coke oven gas. (Tr. 634-35).

125. H₂S is measured at the inlet of the H₂S scrubber and after the scrubber, not at the primary cooler. (Tr. 400).

126. Mr. Svoboda considers the H₂S scrubber to be functioning properly. (Tr. 364).

127. The United States "is comfortable with" the design of MSC's scrubber and did not suggest any changes concerning the scrubber. (Tr. 406).

128. In addition to the H₂S scrubber, H₂S is also removed in the light oil plant and the saturator. (Tr. 416).

129. The H₂S scrubber at MSC is designed to operate optimally when certain operating parameters, including the temperature and flow rates of water and steam, are within a specified range. (Tr. 635).

130. The H₂S scrubber is designed to remove H₂S efficiently when the temperature at the pre-cooler inlet to the scrubber is 66 degrees Celsius or below. (Ex. D-104, § 1.2; Tr. 703, 407-09).

131. The gas undergoes additional cooling in the pre-cooler and then is cooled further in the scrubber. (Tr. 676, 700; 352-53, 365-66, 409).

132. The H₂S scrubber is designed to remove H₂S efficiently when the temperature in the scrubber is 30 degrees Celsius or below. (Ex. D-104; Tr. 710).

133. When operated within its design specifications, the H₂S scrubber reduces the concentration of H₂S in coke oven gas to less than 40 grains per 100 standard cubic feet. (Ex. D-104; Tr. 703).

134. MSC makes operating adjustments to the H₂S scrubber when there is temperature variability of the gas that assists in achieving compliance with the H₂S Standard. (Tr. 636, 399-400).

135. If MSC is meeting the design criteria for the H₂S scrubber, it is not necessary to replace the primary cooler. (Tr. 409-10).

136. Since late 2012, and based on various changes in the byproducts plant, MSC has achieved over 99% compliance with its H₂S limit. (Tr. 668-70).

137. MSC's 2013 compliance rate is above 99% irrespective of whether planned outages are included ((2900 compliant 3-hour blocks in 2013 / 2920 total 3-hour blocks in 2013) = 99.3%) or excluded ((2740 compliant 3-hour blocks in 2013 / 2760 total 3-hour blocks in 2013) = 99.2%). ("Revised Appendix E").

138. The United States' expert did not calculate MSC's percentage compliance with the H₂S standard and did not "know any hard numbers." (Tr. 388-89).

139. Mr. Svoboda also did not have any information concerning the H₂S concentration in the raw gas entering the H₂S scrubber. (Tr. 380).

140. The EPA did not present evidence as to the typical temperatures, or range of temperatures, of the gas entering MSC's pre-cooler or leaving the H₂S scrubber. (Tr. 400).

141. MSC uses a distributive control system ("DCS") to monitor the relevant parameters. (Id).

142. The DCS also controls certain parameters automatically, including water and steam flows, to ensure that those parameters are within their optimal ranges for H₂S removal. (Id).

143. The DCS measures temperature at both the inlet of the pre-cooler and inside the H₂S scrubber. (Tr. 710).

144. MSC uses the DCS operating data to manually control temperature to ensure it is within the optimal range for H₂S removal. (Id).

145. As one of the remedies sought as a remedy for H₂S violations at MSC, the EPA has requested that this Court require “replacement of the obsolete Primary Cooler that appears to be the main cause of MSC’s H₂S violations.” (Doc. 203, at 26).

146. To support that position, the EPA offered the testimony of Karl Svoboda, an “expert in coke oven byproducts engineering.” (Tr. 398-99).

147. Mr. Svoboda did not perform an engineering study to analyze specifically why there were H₂S exceedances at MSC (Tr. 384) and did not have enough time to conduct a thorough analysis. (Id. at 399).

148. When asked by EPA’s counsel for his opinion regarding the cause of H₂S exceedances at MSC, Mr. Svoboda failed to testify that inadequate primary cooling is the cause of H₂S exceedances at MSC:

Q. -- did you develop an opinion as to the cause --

A. Yes.

Q. -- of excessive hydrogen sulfide concentration in gas?

A. Yes.

Q. And what was your opinion?

A. My opinion is that they exist, the exceedances.

Q. Exceedances.

A. They exist. And we put together -- **I put together a report which addresses six or seven major categories of concern. I repeat, category of concern, not solution. Don't take it for solution. It's a category of concern. And the paragraph you say feasibility study is required, or it's reasonable to obtain feasibility study to understand the issue in fact.**

Engineering is understanding and business understanding. Sorry.

(Tr. 349) (emphasis added).

149. Mr. Svoboda testified that replacement of the primary cooler was “a proposition, yes, or a suggestion.” (Tr. 398-99).

150. MSC prepared a Pareto Chart¹ that identified triggering events for H₂S exceedances that were unrelated to the primary cooler. (Ex. D-94).

151. One triggering event can cause multiple H₂S exceedances. (Tr. 390).

152. Based on the testimonial and documentary evidence in the record, the primary cooler was not the main cause of MSC's H₂S violations and, instead, that there were several different causes, most of which were unrelated to the primary cooler.

153. Mr. Svoboda testified that if MSC can achieve a level of operation at which it is not exceeding 50 grains of H₂S per 100 standard cubic feet of gas, there is no reason

¹A Pareto Chart, named for Vilfredo Pereto, an Italian engineer, sociologist, economist, political scientist, and philosopher, is a bar graph. The length of the bars represent frequency or cost (time or money), and are arranged with the longest bars on the left and the shortest bars on the right. In this way, the chart visually depicts which situations are more significant.

for MSC to replace its primary cooler. (Tr. 399).

154. Based on MSC's compliance record since 2012, MSC's existing primary cooler is capable of cooling COG sufficiently to prevent exceedances of the H₂S limit in MSC's Operating Permit and the 1996 Consent Decree.

155. Mr. Svoboda (and this Court) does not believe EPA should determine what kind of equipment MSC has to include in its plant or how MSC operates its H₂S desulfurization process, so long as the operating parameters are met. (Tr. 398-99).

156. Mr. Svoboda invented the primary cooling system that he is suggesting MSC install to replace its existing primary cooling system. (Tr. 398-99).

157. When Mr. Svoboda was engaged by the EPA to assess MSC's desulfurization process, he created a list of specific information that he needed in order to conduct his analysis, including specific diagrams, instrumentation and data printouts, major piping, and other information. Mr. Svoboda sent the United States his list of necessary information and requested that it be provided. (Tr. 344-45).

158. In response to Mr. Svoboda's request for information, the EPA provided him with only 10 diagrams from the 1970s that were irrelevant to his analysis. (Id).

159. In response to Mr. Svoboda's request for 500 lines of operating data from the DCS at MSC for a five-year period, the EPA provided him with one incomplete line of data. (Tr. 398).

160. Mr. Svoboda therefore could not use data from MSC's operations as the basis for his analysis and conclusions, which good engineering practice requires. (Tr. 386-87).

161. Mr. Svoboda lacked temperature data from MSC's processes that would have informed his opinion on the adequacy of MSC's primary coolers. Mr. Svoboda had only

“sketchy information” that he obtained from “hints” in MSC’s operator logs. (Tr. 365).

162. Based on the limited information available to him in operator logs, when Mr. Svoboda evaluated the performance of MSC’s primary cooler, he assumed the cooler could only cool coke oven gas to temperatures of 35 to 37 degrees Celsius. (Tr. 365).

163. MSC’s primary coolers are designed to cool the coke oven gas to between 32 and 34 degrees Celsius. (See Tr. 676). Those temperatures are well within the design parameters for the H₂S scrubber’s ability to remove H₂S.

164. Because the United States did not provide him with the information he requested, Mr. Svoboda relied on a Pareto Chart that MSC had created to summarize and categorize exceedances according to their causes. Mr. Svoboda did not know whether the chart was accurate or complete, but he used it as the basis for his analysis because it was the only data he had. (Tr. 346; see also Ex. D-94).

165. MSC’s Environmental Director, Bud Smith, created the Pareto Chart. (Tr. 743).

166. Power outages caused 141 of the 908 H₂S exceedances and were the single largest cause. (Ex. D-94; Tr. 645). There were 25 triggering events for the 141 exceedances. (Ex. D-94 at “Recent Causes” tab).

167. As shown below, MSC’s analysis, adopted by Mr. Svoboda, confirms that the primary cooling unit was not the main cause of the exceedances and that there were multiple causes that were addressed properly by MSC.

168. Mr. Svoboda did not investigate the power outages and agreed that it is not necessary to replace the primary cooling unit because there were power outages that caused H₂S exceedances. The power outages were not related to the primary cooler. (Tr.

391-92).

169. “High temperature in the desulf system to remove solids” caused 108 of the 908 exceedances, or approximately 12% of the exceedances, through 22 triggering events. (Ex. D-94 at “Recent Causes” tab). In 2012, MSC diagnosed cracks in the suction main, which carries coke oven gas from the primary coolers. Those cracks were allowing ambient air to enter the suction main, which resulted in plugging and, ultimately, elevated temperatures. To remove the plugging, MSC had to heat the gas to remove the naphthalene that had accumulated. MSC removed the plugging and repaired the suction main, which has improved the performance of the desulfurization process. (Tr. 644). The suction main is separate from the primary cooling unit. (Tr. 642-43).

170. “Operator error/degraded performance regulating flows and temperatures” (a combined category) caused up to 107 exceedances through 27 triggering events, which was the third-highest cause of exceedances. (Ex. D-94 at “Recent Causes” tab). There were two instances of operator error. (Tr. 647-48). Operator error was unrelated to the primary cooler. (Tr. 349).

171. Malfunctions in the mist precipitator, which is located in the sulfuric acid plant, caused 82 exceedances through 9 triggering events. (Ex. D-94 at “Recent Causes” tab). The mist precipitator is entirely separate from the primary cooler. (Tr. 393). Mr. Svoboda did not investigate the specific cause of the mist precipitator malfunction. (Tr. 395).

172. A malfunction in the H₂S transfer pump caused 69 exceedances through 7 triggering events. (Ex. D-94 at “Recent Causes” tab). That transfer pump is different from the primary cooler, and it is not necessary to replace the primary cooler because the H₂S transfer pump malfunctioned. (Tr. 395).

173. The “low/high alarm shut down” caused 48 exceedances through 9 triggering events. (Ex. D-94 at “Recent Causes” tab). The low/high alarm shut down involved the waste heat boiler, which is separate from the primary cooling unit, and not the primary cooling unit itself. (Tr. 651-52).

174. Boiler tube leaks caused 32 H₂S exceedances through 1 triggering event. (Ex. D-94 at “Recent Causes” tab). Mr. Svoboda did not investigate the cause of the boiler tube leaking. It is common practice to replace a boiler tube that leaks. (Tr. 396). The boiler tubes are not part of the primary cooling system.

175. “High ambient temperatures and humidity/out of range operating temperatures” caused 24 exceedances through 6 triggering events. (Ex. D-94 at “Recent Causes” tab). These exceedances involved the temperature of the water from the Ohio River during the summers of 2007, 2008, and 2011. (Id.). In terms of the cooling water system from the Ohio River, Mr. Svoboda testified to “a general hint that you have to review this information at the point of intake” and that various alternatives should be “studied.” (Tr. 381).

176. MSC now uses primary cooling unit number two and is cleaning the spirals so that they are not plugged, both measures having improved the cooling that occurs in the primary cooler. (Tr. 669-70, 675).

177. MSC’s 99% compliance rate demonstrates that MSC’s existing primary cooler has sufficient cooling capacity.

178. The “indirect cooler plugged” caused 17 exceedances through 5 triggering events. (Ex. D-94 at “Recent Causes” Tab). The indirect cooler is separate from the primary cooling unit, and MSC unplugged the indirect cooler. (Tr. 654).

179. The remaining triggering events and exceedances all involve equipment malfunctions to equipment that are not part of the primary cooling unit (repair valve stem on 2-A spiral valve; boiler feed water pump; liquor transfer pumps; precipitator blower; deacidifier and ammonia still). (Ex. D-94 at "Recent Causes" tab; Tr. 654-657). That equipment was repaired or replaced, and the occurrence of those exceedances does not require replacement of the primary cooling unit.

180. Equipment malfunctions are common in plants. (Tr. 393-94).

181. When a malfunction occurs, the plant should determine the cause and determine the necessary cure to fix the cause. (Id. at 394).

182. Good engineering practice is to determine the causes of the different exceedances and determine whether the primary cooling unit in fact was the cause of the different malfunctions before replacing it. The EPA did not perform that analysis. (Tr. 397).

183. Mr. Svoboda testified that he could not provide a reliable opinion on the changes, if any, that MSC needs to undertake at its byproduct plant, unless each of the following were performed first:

- A. a feasibility study to understand the design basis for the project, as well as the scope and the ultimate performance goals for the project;
- B. a conceptual design based on the feasibility study; and
- C. a final design incorporating feedback from MSC.

(Tr. 343; 385).

184. The EPA would not pay for Mr. Svoboda to perform a feasibility study. (Tr. 384-85).

185. The EPA did not perform any of Mr. Svoboda's prerequisites necessary to

determine whether replacement of the primary cooling unit is appropriate.

186. The EPA failed to prove by a preponderance of evidence that the primary cooling unit must be replaced in order to achieve compliance with the H₂S standard.

187. MSC has made significant and ongoing investment in its byproduct operations that have contributed to its 99% compliance level for H₂S.

188. Since 2007, MSC has spent more than \$10 million on work performed during its scheduled maintenance outage. (Ex. D-95; Tr. 665-66).

189. Since 2005, MSC has spent an additional \$3 million on capital investment in new equipment to improve its desulfurization process. (Tr. 666-67).

190. Since 2012, MSC's capital investments in its desulfurization process have included a new waste heat boiler and a new four-stage heat exchanger. In addition, MSC has purchased a new acid plant start-up heater that will be installed once engineering is complete. (Id.).

191. MSC also rebuilt primary cooler number one while it was out of service, and the unit is now ready to return to service. MSC plans to return primary cooler number one to service within the next year and will perform similar repairs to primary cooler number two to ensure continued performance. (Id.).

192. MSC has also undertaken recent changes to allow more regular cleaning of the spirals in its heat exchangers, which will prevent plugging that reduces cooling in the primary coolers. (Ex. D-108; Tr. 674).

193. MSC has started cleaning the spirals and plans to clean all seventeen heat exchangers and replace another. (Tr. 675).

194. When the first of the cleaned spiral heat exchangers was returned to service,

the temperature at the outlet from the primary cooler was reduced by between 1.5 and 2 degrees to 28 degrees Celsius. (Tr. 675).

195. The purpose of the H₂S limit in MSC's Title V Operating Permit and a 1996 Consent Decree with EPA is to limit sulfur dioxide ("SO₂") concentrations in the ambient air. (Tr. 45).

196. There is no federal regulation limiting H₂S emissions to the ambient air.

197. There is no federal or state regulation limiting H₂S concentrations in the ambient air.

198. EPA sets NAAQS for SO₂ at concentrations that are designed to ensure the public health is protected, with an adequate margin for safety. (75 Fed. Reg. 35521 (June 22, 2010) (defining primary standards under the NAAQS as ones "which in the judgment of the Administrator, based on [the air quality] criteria and allowing an adequate margin of safety, are requisite to protect the public health") (citing Section 109(b)(1) of the Clean Air Act.)).

199. Individual states can apply for authority to develop their own program for implementation of Clean Air Act ("CAA") standards.

200. In 1972, EPA delegated authority to West Virginia to implement the CAA. (Id.).

201. As a "delegated state," West Virginia is required to submit to EPA a State Implementation Plan ("SIP") that sets forth its plan for attaining or exceeding the federal CAA standards. (75 Fed. Reg. 35522 (June 22, 2010) ("States are to submit, for EPA approval, State implementation plans (SIPs) that provide for the attainment and maintenance of such standards through control programs directed to sources of the

pollutants involved.”) (citing Section 110 and related provisions of the Clean Air Act)).

202. In 1974, when EPA first promulgated the NAAQS for SO₂, the allowable ambient air concentration was of SO₂ was a daily average of 0.14 parts per million. That standard did not change until the EPA revised the regulation to the new 1-hour standard in 2010, which lowered the allowable concentration to 0.075 parts per million as measured and averaged over the course of one hour. (Id.).

203. West Virginia has primary responsibility for ensuring attainment and maintenance of ambient air standards. (Id.) (“States are primarily responsible for ensuring attainment and maintenance of ambient air quality standards once EPA has established them.”).

204. If any areas in West Virginia are not in attainment of the new standard, West Virginia is required to revise its SIP to include a plan for bringing those areas into attainment. (Id.).

205. At the time EPA filed its Complaint in this matter and all relevant times before that, the area in which MSC is located was in attainment with the 24-hour SO₂ NAAQS.

206. MSC is part of an attainment area that includes portions of Jefferson County, Ohio, and Brooke County, West Virginia (“Jefferson/Brooke”). In October 2013, approximately 20 months after EPA filed its Complaint, the Jefferson/Brooke attainment area where MSC is located was redesignated as non-attainment for the new 1-hour SO₂ NAAQS.

207. From the date that Jefferson/Brooke was designated non-attainment under the new 1-hour standard, West Virginia has 18 months (until April 2015) to revise its SIP to incorporate a plan to bring the area into attainment. (Id.; Tr. 438).

208. There are a number of significant sources of SO₂ within the Jefferson/Brooke attainment area, including at least one (*i.e.*, the Cardinal Power Plant) that has emitted up to 200 times more SO₂ than MSC in recent years and always at least 10 times more for every year since 2007. (Exs. P-278; P-231).

209. The Cardinal Power Plant is approximately 10 kilometers away from the MSC facility. (Tr. 429).

210. The prevailing wind in the Follansbee area blows emissions from the Cardinal Power Plant into the Follansbee, West Virginia, region. (Tr. 184, 186).

211. The United States' expert admitted that he did not account for the prevailing wind blowing toward Follansbee from the Cardinal Power Plant although he could have done so quite easily. (Tr. 442).

212. Nationally, two-thirds of all SO₂ emissions come from power plants. (Tr. 186).

213. The monitor right across the street from the MSC plant is showing declining SO₂ readings. (Tr. 448).

214. The H₂S limit at issue in this litigation was developed by West Virginia as part of a SIP that successfully maintained Brooke County's attainment of the SO₂ NAAQS (with an adequate margin to ensure public health) until the recent re-designation under the new 1-hour standard.

215. Although the EPA introduced evidence concerning West Virginia's compliance with the one-hour standard, West Virginia does not have an obligation to comply with that standard until 2018. (Tr. 438-39).

216. In the current litigation, the United States is seeking injunctive relief that would force MSC to spend more than \$3,000,000 to replace its primary coolers and other

equipment. (Tr. 359-60).

217. In 2013, all of the ambient air monitors in the Jefferson/Brooke County attainment area were in compliance with the 1-hour SO₂ NAAQS. (Exs. D-502, D-503; Tr. 446, 452).

218. The EPA failed to prove, by a preponderance of the evidence, that MSC should have replaced the primary cooling unit for purposes of the United States' economic benefit analysis.

Eighth Claim for Relief - RCRA Subtitle C Violations

219. The Government alleges that coke oven gas condensate ("COGC") is a solid and hazardous waste subject to regulation under RCRA Subtitle C.

220. On October 21, 2013, the parties filed cross-motions for summary judgment on the Government's RCRA Subtitle C claim. The Court's January 14 Order ("the Order") resolved certain significant issues in favor of MSC [Doc. 182]. As discussed in more detail in the Conclusions of Law section, *infra*, the Order left for trial only a narrowly defined issue related to potential air emissions of benzene when COGC was transferred from a truck to a concrete conveyance trench, which funneled the COGC into a tank. [Doc. 182, at 17 ("there remains a genuine issue of material fact as to whether COGC is a solid waste as a result of emissions resulting from transfer."); and 18 ("Whether some COGC is disposed as volatilized emissions during transfer remains an issue for trial.")].

221. The significant RCRA issues resolved by the Order are set forth below as context for the subsequent Findings of Fact related to RCRA Subtitle C.

222. COGC stored in drip legs is not a solid waste because it is not abandoned through disposal or accumulated. [Doc. 182, at 19-20 ("The Court does not find that the

COGC stored in drip legs is a solid waste. The COGC is not abandoned through disposal or accumulated as is required to be a solid waste under 40 C.F.R. § 261.2(a-b).”].

223. Even if the Government had satisfied its initial burden to show that COGC is a solid waste, MSC’s handling of COGC constitutes an excluded form of recycling under RCRA and, therefore, is exempt from regulation under RCRA. [Id. at 20 (“Additionally, as will be discussed below, even if the COGC were a solid waste, MSC’s handling of COGC constitutes an excluded form of recycling under the regulations, and therefore is exempt from regulation under the RCRA.”)]. See also Doc. 182 at 24 (“The Court finds that the United States has failed to show that COGC is a solid waste and that even if this Court considered COGC a solid waste, MSC’s handling of COGC would constitute an exempt form of recycling.”); and at 25 (“The Court finds that COGC’s reintroduction into the flushing liquor circuit is an exempt form of recycling under the first criteria for Subtitle C general exclusion.”).

224. In particular, MSC’s recycling of COGC is exempt because it is “used or reused as ingredients in an industrial process to make a product.” [Doc. 182 at 25].

225. Even though the quantity of COGC recycled is small in comparison to the quantity of excess flushing liquor, MSC’s recycling of COGC is not “ineffective or only marginally effective for the claimed use” and therefore surrogate disposal. COGC is used effectively in the flushing liquor circuit for cooling and conditioning, and the remainder is reclaimed in order to extract ammonia, coal tar, benzene and other light oils before leaving the processing plant, even if the quantity was relatively small. [Doc. 182 at 25-26] (“The Court agrees with the defendant that the recycling of COGC is used in the flushing liquor circuit for cooling and conditioning, and the remainder is reclaimed in order to extract

ammonia, coal tar, benzene and other light oils before leaving the processing plant. Accordingly, if COGC were a solid waste, it would be exempt from regulation as used or reused as ingredients in an industrial process to make a product.”).

226. MSC has provided appropriate documentation to support its recycling exception claim, as required by 40 C.F.R. § 261.2(f). [Doc. 182 at 30 (“As discussed above, the Court agrees with the defendant that [it] has provided sufficient evidence to support a recycling exception claim.”)].

227. The scope of the Order and the issues remaining for trial were further clarified at the January 16 Pretrial Conference. See Pretrial Conference Tr. [Doc. 186 at 12-13]. (Court intended Order to leave open only the question of “whether the amount [of benzene] that went into the air constituted a solid waste”); and 30-32 (Court and counsel discuss open “transfer emissions issue” “while it’s in the trench” and Court concludes with “[l]et’s just call it trench emission.”); see *also* id. at 15-16 (agreement that Order moots motion *in limine* regarding historic COGC handling practices); and 17-18 (agreement that recycling testimony is unnecessary).

228. EPA’s primary RCRA witness expressly testified that RCRA does not regulate air emissions from the conveyance trench. (Tr. 623).

He testified as follows:

“[W]e are not trying to regulate the emissions. We’re just saying that the emissions are evidence that the facility is not treating this as a valuable product; and therefore it’s being discarded.”

(Tr. 623).

229. EPA conceded that the design of the conveyance trench and containment

area meant that even if there were a “spill,” the COGC would still drain into the conveyance trench. (Id.).

230. The COGC was being used for a valuable function, both in cooling and conditioning the coke oven gas, which is an important product of the facility, as well as it was contributing to resource recovery of other constituents. (Tr. 962).

231. The conveyance trench was sloped so that the material would effectively roll or drain back into the conveyance trench from the concrete containment and still end up going into the pit sump in the process. There was no land disposal. (Tr. 963-64, 979-980).

232. The conveyance trench was ancillary equipment - piping that was connected to the pit sump tank - so that it was ancillary equipment to the tank, and the containment area was really a part of a tank system with no discard and no discharge to land. (Tr. 964-65).

233. MSC has modified its COGC transfer process, so that it is now piped directly from the drip truck on the collection pad to the tar decanters. (Tr. 721-22; 927; and 966).

Tenth Claim for Relief – Alleged Purifier Oil Violations

234. MSC used to generate purifier oil as a byproduct of purifying wash oil, which is a material used to separate light oils from the coke oven gas. The light oils included benzene, toluene, and xylene. (Tr. 612).

235. The purifier oil was placed in an above-ground tank that had secondary containment in the form of a concrete base. (Tr. 719).

236. Historically, the purifier oil was removed from the purifier oil tank within 90 days and then recycled by applying it to the coal going into the coke ovens. (Tr. 612-13; Ex. P-64 at NEIC-0002631).

237. Applying the purifier oil to the coal improved the coal's bulk density. (Ex. P-64 at NEIC-0002359).

238. The Government agrees that purifier oil was not a hazardous waste when applied to the coal. (Tr. 613).

239. In approximately 2002, MSC stopped generating purifier oil. (Tr. 613).

240. In 2007, after the facility emerged from bankruptcy, EPA Region 3 official Martin Matlin participated in an investigation of the MSC facility with members of the National Enforcement Investigations Center. (Tr. 593-94 and 595).

241. Martin Matlin had never been to the MSC facility before the 2007 NEIC investigation, nor has he returned since. (Tr. 595).

242. At the time of the 2007 NEIC inspection, by which point MSC was no longer generating new purifier oil, the purifier oil tank contained some purifier oil. (Tr. 613).

243. There was no evidence at trial that MSC ever intended to discard the purifier oil in the tank that the NEIC identified during its inspection.

244. Upon learning of USEPA's concern that there was some purifier oil in the tank, MSC removed and properly disposed of the purifier oil and subsequently power washed the tank and properly disposed of the purifier oil-power wash fluid mixture. (Tr. 614).

245. MSC applied the removed contents from the purifier oil tank to the coal just as the purifier oil had been applied in the past. (Tr. 719).

246. Upon learning of USEPA's concern with the secondary containment area serving the purifier oil tank, MSC repaired a few cracks and pressure washed and sealed the concrete. (Tr. 719; 617).

247. There have never been any documented spills or leaks from the purifier oil tank. (Tr. 627; 719).

248. The purifier tank has been empty since 2011. (Tr. 719; 614).

Eleventh Claim for Relief – Alleged Roll-off Box Violations

249. MSC maintains several roll-off containers at the northern end of the facility known as the laydown yard that contain various wastes collected from the facility. (Tr. 618).

250. MSC's waste managers have at all times understood what a listed hazardous waste is and are familiar with the type of materials at the facility that could constitute hazardous waste. (Tr. 929).

251. When the MSC waste managers believe that a material going into a roll-off box is likely to constitute hazardous waste, they immediately label and date the box. (Tr. 929-30). Even if the material is likely to be nonhazardous, MSC still puts a label on that container, dates it the first day the material goes into the container, and then samples that roll-off. (Id.).

252. MSC's waste managers inspect the roll-off boxes on a weekly basis to identify the boxes, confirm proper labeling, and determine the need for any sampling. (Tr. 929).

253. MSC's labeling practice predates the 2007 NEIC Investigation. (Tr. 913).

254. MSC takes samples by mixing the roll-off box contents and taking several representative samples at different locations after mixing the contexts of the box to make it uniform. (Tr. 930).

255. MSC then sends those samples for analysis to a third party to determine whether the sample is hazardous through a TCLP analysis (Toxicity Characteristic

Leachate Procedure). (Tr. 930).

256. The EPA admitted that it has no evidence that MSC actually handled any hazardous waste improperly. (Tr. 628).

Twelfth Claim for Relief – Alleged RCRA Subtitle I Violations

257. During trial, the United States stipulated to withdrawal of its Twelfth Claim For Relief, which alleged violations of RCRA Subtitle I related to alleged underground storage tanks at MSC. (Tr. 630-31).

258. At the conclusion of the Government's case-in-chief, MSC moved for a directed verdict on all of the Government's claims, including the Twelfth Claim For Relief. (Id.).

259. Based on the Government's stipulated withdrawal of its Twelfth Claim For Relief, MSC's motion was granted with respect to that claim. (Id.).

Health Dangers

260. The Air Quality Index ("AQI") is an index used by WVDEP for reporting daily air quality, which indicates how clean or polluted the air is and describes the health concerns associated with air quality levels. (Ex. P-271 at 31; Tr. 141).

261. The AQI is used for the five major air pollutants regulated by the Clean Air Act, including PM_{2.5} and SO₂, for which the National Ambient Air Quality Standards ("NAAQS") are set to protect against harmful health effects. (Ex. P-271 at 31).

262. The AQI values include Good, Moderate, Unhealthy for Sensitive Groups, Unhealthy, Very Unhealthy and Hazardous. "Unhealthy for Sensitive Groups" means that the poor air quality may cause health effects in active adults, people with lung disease, and older adults and children. "Unhealthy" means that the air quality is unhealthy for everyone,

especially people with heart or lung disease. (Ex. P-271 at 32).

263. In 2012, there were 12 days where air quality was “unhealthy for sensitive groups” in Brooke County for SO₂ and PM_{2.5}. Brooke County was the only county in West Virginia with one day of “unhealthy” air quality for all groups for SO₂ and PM_{2.5}. (Tr. 141; Ex. P-271 at 33).

264. When MSC violates its H₂S permit limits, it produces excess emissions of SO₂ which the H₂S concentration permit limits are designed to prevent.

265. As noted above, this Court places little to no weight on the testimony of Mr. Leon-Guerrero and, therefore, discussion of his testimony is not necessary.

266. The meteorological modeling presented to this Court wholly failed to take into account the massive Marcellus and Utica shale exploration and drilling taking place in northeast Ohio and the northern panhandle of West Virginia, including the burning off of hydrocarbons as the wells are drilled and fracked.

267. Air toxics is a broad category of air pollutants that includes the 188 hazardous air pollutants defined by the Clean Air Act which are known to cause serious health harm, and hundreds of other air toxics that are known to cause negative health effects. (Tr. 493-94).

268. Air toxics can be carcinogenic, or cause non-cancer adverse health effects including neurological and respiratory effects. (Tr. 494).

269. Dr. Thomas Luben, a senior epidemiologist with the EPA in the National Center for Environmental Assessment, Office of Research and Development testified on behalf of the United States, and was the only witness qualified by the Court to offer an expert opinion on the health effects from exposure to SO₂ and PM_{2.5} and on the actions

taken by EPA to reduce ambient concentrations and the harmful effects of SO₂ and PM_{2.5}. (Tr. 460; 462).

270. Exposure to both SO₂ and PM_{2.5} pose adverse risks to human health and the environment. (Tr. 465-66).

271. SO₂, a criteria air pollutant, moves around quickly in high concentration plumes after being emitted from a source causing a local impact for short term health effects. (Tr. 464; 474).

272. SO₂ is a gas; it is associated with respiratory health effects including decrements in lung function and inflammation contributing to bronchoconstriction. (Tr. 464; Ex. P-58 at 5-2; Ex. P-271 at 4).

273. Short-term exposure to SO₂ causes respiratory effects like airway inflammation, reduced lung function, emergency department visits and hospitalizations due to respiratory causes. (Tr. 474; Ex. P-58 at 5-11).

274. Certain groups are at greater risk from exposure to SO₂, including children, the elderly, and people with pre-existing conditions, particularly respiratory disease like asthma. (Tr. 475-76; Ex. P-58 at 5-10, Ex. P-271 at 4).

275. Reducing SO₂ emissions from an industrial source would improve health almost immediately. (Tr. 477).

276. PM_{2.5} is a regional pollutant that is associated with chronic health effects like heart attacks, atherosclerosis, and death. (Tr. 465).

277. Sources that burn coal, like the coke plant, emit SO₂ which contributes to the formation of PM_{2.5}. (Tr. 46; 462).

278. The smaller, fine particles, like PM_{2.5}, are more likely to get deeper into the

lung than coarser particles and cross into the bloodstream causing cardiovascular effects in humans. (Tr. 463).

279. Exposure to PM_{2.5} causes serious adverse health effects including heart attacks, atherosclerosis and death. (Tr. 466; Ex. P-271 at 4)

280. The scientific consensus is that PM_{2.5} is harmful to human health, causing premature mortality, cardiovascular effects, and respiratory problems. (Tr. 466, 471-72).

281. EPA has concluded that a causal relationship exists between PM_{2.5} exposure and premature mortality and cardiovascular system effects. (Tr. 471-72; Ex. P-57 at 2-31 and 2-32).

282. Certain groups are at greater risk from exposure to PM_{2.5}, including children, the elderly, and people with pre-existing conditions, particularly those with respiratory and cardiovascular disease. (Tr.472; Ex. P-57 at 2-23, Ex. P-271 at 4).

283. Reducing PM_{2.5} emissions from an industrial source would improve health within a few days. (Tr. 477).

284. Coke oven emissions pose a carcinogenic hazard to humans. (Ex. P-281 at 42).

Conclusions of Law

285. Congress passed the Clean Air Act in 1970 to “speed up, expand, and intensify the war against air pollution in the United States with a view to assuring that the air we breathe throughout the Nation is wholesome once again.” H.R. Rep. No. 91-1146 at 1 (1970) reprinted in 1970 U.S.C.C.A.N. 5356, 5356; *Wis. Elec. Power Co. v. Reilly*, 893 F.2d 901, 909 (7th Cir. 1990) (quoting legislative history). A primary purpose of the

statute is “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.” 42 U.S.C. § 7401(b)(1) (2006); *see also United States v. Cinergy Corp. (Cinergy I)*, 582 F. Supp. 2d 1055, 1057 (S.D. Ind. 2008), *rev’d on other grounds*, 623 F.3d 455 (7th Cir. 2010) (quoting 42 U.S.C. § 7401(b)(1)).

286. Section 109(a) of the Clean Air Act requires EPA to develop NAAQS to facilitate the reduction of ambient levels of “criteria pollutants” – air pollutants such as SO₂ and PM that are believed to “cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare.” 42 U.S.C. § 7409(a).

287. The Clean Air Act requires each state to develop a State Implementation Plan (“SIP”) designed to attain and maintain the NAAQS. 42 U.S.C. § 7410(a)(1). The State of West Virginia adopted and submitted to EPA various regulations that have been approved by EPA and which, taken together, constitute the SIP for the State of West Virginia. *See* 40 C.F.R. Part 52, Subpart XX.

288. When a violation of the Clean Air Act has been found, the statute gives district courts broad authority “to restrain such violation, to require compliance, . . . and to award any other appropriate relief.” 42 U.S.C. § 7413(b); *Cinergy*, 582 F. Supp. 2d at 1060 (“Nothing in the CAA is a ‘clear and valid legislative command’ . . . that the full scope of the Court’s equitable powers under § 113(b) is to be limited”).

289. The traditional standard for an injunction requires a plaintiff to show: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that

injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.

eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 391 (2006).

290. The court's responsibility is "crafting a remedy that is protective of public health, and this responsibility necessarily takes preeminence over all other considerations."

United States v. Alisal Water Corp., 326 F. Supp. 2d 1010, 1027 (N.D. Cal. 2002) (Safe Drinking Water Act case).

291. As Judge Chambers has observed, courts faced with environmental injury must largely defer to the balance of hardships that Congress has already struck:

The public has a strong interest in maintaining the balance Congress sought to establish between economic gain and environmental protection. While it is true that these statutes contemplate a certain amount of environmental degradation, they also mandate a certain amount of economic loss. Economic gain is not to be pursued at all costs, and certainly not when it is contrary to the law. The Court must ensure that it does not itself upset the balance struck by Congress.

Ohio Valley Env'tl. Coal. v. U.S. Army Corps of Eng'rs, 528 F. Supp. 2d 625, 633 (S.D. W. Va. 2007).

292. District courts are given wide deference in making the "highly discretionary calculations necessary to award civil penalties." ***Tull v. United States***, 481 U.S. 412, 425 (1987). A higher court will "uphold a district court's findings of fact in support of a CAA

penalty unless the findings are clearly erroneous.” ***Pound v. Airosol Co., Inc.***, 498 F.3d 1089, 1094 (10th Cir. 2007).

293. In assessing a penalty under the Clean Air Act, a court must consider the following statutory factors:

. . . (in addition to such other factors as justice may require) the size of the business, the economic impact of the penalty on the business, the violator’s full compliance history and good faith efforts to comply, the duration of the violation as established by any credible evidence (including evidence other than the applicable test method), payment by the violator of any penalties previously assessed for the same violation, the economic benefit of noncompliance, and the seriousness of the violation.

42 U.S.C. § 7413(e).

294. The judicial approach in applying the Clean Air Act statutory penalty factors is substantially the same as applying the similar statutory factors set forth in the Clean Water Act. ***Pound***, 498 F.3d at 1094 n.2 (“The penalty provisions of the CAA and the Clean Water Act (CWA) are virtually identical; thus, CWA cases are instructive in analyzing issues arising under the CAA”); ***United States v. Dell’Aquila***, 150 F.3d 329, 338 n. 9 (3d Cir. 1998) (“[T]he Clean Water Act and the Clean Air Act are *in pari materia*, and courts often rely upon interpretations of the Clean Water Act to assist with an analysis under the Clean Air Act.”) (citations omitted).

295. Courts typically assess Clean Air Act and Clean Water Act penalties in accordance with one of two methods, the “top-down” and the “bottom-up” approaches.

Under the top-down method, the court determines the statutory maximum penalty amount, and then considers whether any of the Clean Air Act penalty factors warrant mitigation of that amount, and to what degree. See **United States v. B & W Inv. Props.**, 38 F.3d 362, 368 (7th Cir. 1994) (“In considering fines under the [Clean Air] Act, courts generally presume that the maximum penalty should be imposed”); **Dell’Aquila**, 150 F.3d at 339 (“Courts usually calculate a fine under the CAA by starting with the maximum penalty”); **United States v. Marine Shale Processors**, 81 F.3d 1329, 1337 (5th Cir. 1996) (“when imposing penalties under the environmental laws, courts often begin by calculating the maximum possible penalty, then reducing that penalty only if mitigating circumstances are found to exist”).

296. Under the bottom-up approach, “the court begins with the violator’s estimated economic benefit from non-compliance . . . and then adjusts up or down based on the court’s evaluation of” the statutory factors. **United States v. Smithfield Foods**, 191 F.3d 516, 528 (4th Cir. 1999).

297. The burden of showing that a civil penalty would have a detrimental effect on the violator’s business rests with the violator. **Pub. Int. Res. Grp. of New Jersey, Inc. v. Powell Duffryn Terminals, Inc.**, 720 F. Supp. 1158, 1166 (D. N.J. 1989), *aff’d in part and rev’d in part*, 913 F.2d 64 (3rd Cir. 1990) (concluding that defendant had “failed to demonstrate that assessing a severe penalty would jeopardize defendant’s continued operation”); **Chesapeake Bay Foundation v. Gwaltney**, 611 F. Supp. 1542, 1562 (E.D. Va. 1985) (the Court was “unpersuaded that any penalty warranted by Gwaltney’s violations would jeopardize Gwaltney’s continued operation”), *aff’d*, 791 F.2d 304 (4th Cir.

1986), *vacated and remanded on other grounds*, 484 U.S. 49 (1987).

298. “Where a violator cannot show that a penalty will have a ruinous effect, the economic impact factor under [Clean Water Act] Section 309(d) will not reduce the penalty.” ***United States v. Gulf Park Water Co., Inc.***, 14 F. Supp. 2d 854, 868 (S.D. Miss. 1998); see also ***United States v. Smith***, 1998 WL 325954, at *3 (4th Cir. Feb. 27, 1998) (holding that burden is on violator “to show an inability to pay the penalty”); ***Sierra Club v. El Paso Gold Mines, Inc.***, 2003 WL 25265873 at *11 (D. Colo. Feb. 10, 2003) (“Defendant bears the burden of proving its inability to pay a civil penalty”).

299. Some courts refuse to look to the finances of a corporate parent because this would be “somewhat at odds with the basic principle of corporate law that each incorporated business entity enjoys a separate legal existence.” ***United States v. Dico, Inc.***, 2014 WL 1046886, *10 n.43 (S.D. Iowa Feb. 24, 2014).

300. Yet “[c]ases uniformly make clear that so long as the penalties are not actually imposed on the parent, consideration of the parent’s assets is one factor, among many, that is appropriate in a Clean Water Act case.” ***Idaho Conservation League v. Atlanta Gold Corp.***, 879 F. Supp. 2d 1148, 1170 (D. Idaho 2012).

Third Claim for Relief - Particulate Emission Violation at Coke Oven Batteries

301. West Virginia law requires that certified observers make opacity determinations of coke plant combustion stack emissions through visible emission observations (“VEOs”) in compliance with 45 CSR § 7A-2.1.a.1 (“The opacity . . . from manufacturing process operations shall be determined visually by a qualified observer”); (Ex. JT-1 at ¶ 3.3.5, p. 42 and JT-2 at ¶ 3.3.5, p. 29; Doc. 182, at 13).

302. Under West Virginia law, coke plant combustion stack emissions may not equal or exceed 40% at any time and may not be between 20% and 40% for any period or periods aggregating to more than five minutes in any 60 minute period. (45 CSR §§ 45-7.3.1, 3.2 ("Reg. 7")).

303. There is a federal MACT standard for opacity to which MSC is subject. (40 C.F.R. § 63.7296).

304. Data from continuous opacity monitors ("COM") may be used to demonstrate compliance only with the federal MACT standard and not Reg. 7. (40 C.F.R. §§ 63.7330(e), 63.7296); see also Doc. 182, at 12-14; Doc. 201, at 5).

305. Full compliance with the MACT standard is indicative of a well-performing oven. (Tr. 784).

306. MSC has complied with the federal MACT standard at all relevant times. (Tr. 72; 731).

307. VEOs must be taken and recorded in accordance with EPA Method 9, as adopted by 45 CSR § 7A ("Reg 7A"), as follows:

- a) The observer shall stand with the sun oriented in the 140 degree sector to his back. (EPA Method 9, § 2.1; Reg 7A, § 2.1.a.2.A; Tr. 115; 193).
- b) The observer shall make his observations, as much as possible, from a position such that his line of vision is approximately perpendicular to the plume direction. (EPA Method 9, § 2.1; Reg 7A, § 2.1.a.2.A; Tr. 115; 146).
- c) The observer shall record the following information (both initial and final):
 - i) clock time;

- ii) observer location (including distance to discharge, direction from discharge, and height of observation point);
- iii) weather conditions (including wind direction, wind speed, and ambient temperature); and
- iv) sky conditions (e.g. cloud coverage); and plume description (including color and distance visible). (EPA Method 9, Figure 9-1).

308. The purpose of the EPA Method 9 and Reg 7A procedural requirements is to promote accuracy. (Tr. 73-74; 122; 988-89).

309. “The accuracy of the method must be taken into account when determining possible violations of applicable opacity standards.” (EPA Method 9).

310. The testimony was uniform that a VEO taken or recorded in contravention of the Method 9 and Reg 7A requirements is invalid and may not be used to demonstrate a violation of Reg. 7. VEOs that are not in strict compliance with the test procedures set forth in WV Rule 7A cannot be used as credible evidence. (Tr. 74-75; 122; 192; 988-89).

311. In order to comply with the Method 9 and Reg 7A sun requirement, VEOs taken of MSC’s combustion stacks must be taken in the morning. (Tr. 117-18; 195).

312. As noted above, the evidence discloses 27 violations supported by valid VEOs.

313. The United States withdrew its claim for economic benefit based on the alleged failure of MSC to replace through walls during its case-in-chief.

314. With respect to the issue of injunctive relief, the EPA has failed to demonstrate by a preponderance of the evidence that through wall replacements are required or beneficial. The EPA witness John McGrew testified that the three part list that

he offered at trial was to prioritize the oven walls for further investigation and that the next step would be to look inside non-burning flues through the inspection caps/ports to see if gas is escaping out of the oven chamber. MSC's expert agreed, yet neither party's expert took that step.

315. This Court will enter an injunction requiring both Mr. Immurs (at the expense of MSC) and Mr. McGrew (at the expense of the EPA) meet at MSC, look inside non-burning flues through the inspection caps/ports, and report to the Court as to which, if any, of the oven walls need to be replaced and which, if any, may be handled in a less drastic manner. Such report shall be due by October 15, 2014.

316. This Court will also enter an injunction requiring MSC to install and utilize an automated system that tracks oven charging times at Battery 8 with the COM data and use this system on an on-going basis to identify ovens that cause opacity violations and to evaluate the need for further maintenance to prevent future violations.

317. With regard to civil penalties for the 27 violations, this Court will impose civil penalties in accordance with the consent decree in the total amount of \$27,000.

318. In determining to abide by the terms of the consent decree, this Court finds that MSC has been and continues to make good faith efforts to minimize and eliminate exceedances, that the evidence suggests that the efforts are working and resulting in fewer exceedances in recent time periods, and that the EPA has demonstrated no economic benefit to MSC. In such a situation, it appears that the limited funds available to MSC are better put to remediation efforts to protect the environment rather than payments to regulators.

319. MSC has very limited resources from which to pay for the plant

improvements, let alone large civil penalties.

320. In that regard, MSC filed Defendant Mountain State Carbon, LLC's Motion *In Limine* for Exclusion of Third-Party Financial Documents [Doc. 205]. That Motion will be denied, and this Court has considered the information. The fact remains, however, that the third party is in no way liable or responsible for any civil penalties. There is a point at which the part owner will simply walk away from the expense, obtain its coke elsewhere, and leave some 400 persons without employment, thereby devastating Follansbee and Brooke County.

321. The coke being supplied to the owner has to be shipped to Michigan, with the attendant shipping costs. This Court will not speculate as to the cost of obtaining substitute coke elsewhere and closer to home. This Court will not, however, treat the part owner as an inexhaustible source of funds.

322. The financial situation of MSC is made even more precarious by the fact that the other one half owner has filed for bankruptcy protection, closed its plants, and no longer has any use for coke.

Fifth Claim for Relief - Hydrogen Sulfide Concentration Violations

323. The EPA seeks an injunction requiring MSC to replace its primary coolers.

324. The EPA has failed to demonstrate by a preponderance of the evidence that replacement of the primary coolers is reasonable and necessary.

325. While evidence was presented that indicated that the type of primary coolers which the EPA wants to have installed are based upon a newer technology, the evidence also demonstrates that the existing coolers are competent to do their job, especially if the spirals are kept free from blockages.

326. The vast majority of H₂S exceedances which occurred were due to causes wholly unrelated to the primary coolers or their operation.

327. So long as the primary coolers are working and are sufficient to cool the material to the point necessary for the operation of the desulfurization system, neither the EPA nor this Court has the authority to require a different technology.

328. This Court will enter an injunction requiring MSC to clean all spirals in the heat exchangers as soon as practicable and establish a regular cleaning schedule.

329. The parties negotiated and stipulated to a schedule of penalties for H₂S exceedances. Those stipulated penalties provide an adequate form of remedy and are set forth in a Consent Decree that was entered in the United States District Court for the Northern District of West Virginia and which the court retains authority to interpret. (Ex. JT-8).

330. The terms of the Consent Decree are fair, reasonable, and in the public interest.

331. MSC and EPA are required to comply with the 1996 Consent Decree and the Consent Decree remains in effect.

332. MSC complied with its obligation under the Consent Decree to disclose any H₂S exceedances and any force majeure events causing exceedances.

333. MSC self-reported all of the exceedances that form the basis of the United States' H₂S claim.

334. Although seeking injunctive relief in this proceeding, the EPA ignored the notices of H₂S exceedances from MSC and performed no investigation of the causes of the exceedances. The EPA filed the notices without taking any action. (Tr. 96-97; 916-17).

335. The United States has failed to show that either party invoked the provision for termination of the Consent Decree.

336. MSC sought in good faith to comply with the terms of the Consent Decree, including its reporting requirements, which provided notice to the EPA that MSC understood the Consent Decree to remain effective.

337. The EPA has enjoyed the benefits it negotiated for in the Consent Decree and cannot now reject the continued effect of the Consent Decree because the terms no longer suit it. (Tr. 99-100; 916).

338. On January 30, 1996, the United States and Wheeling-Pittsburgh entered into a consent decree to settle all liabilities arising from claims raised in the United States' Complaint filed in the United States District Court for the Northern District of West Virginia, docketed at 5:93-CV-195. (Ex. JT-8).

339. The Consent Decree applies to and binds the "Defendant," defined as "Wheeling-Pittsburgh Steel Corporation and any successor entity operating the Follansbee Facility." (Ex. JT-8, Consent Decree, ¶ 12).

340. MSC is a successor entity operating the Follansbee Facility.

341. The Consent Decree settled all civil violations as alleged through January 30, 1996, the date of the entry of the Consent Decree, including certain exceedances of the H₂S standard, as set forth in the West Virginia SIP. (Ex. JT-8 at 5, ¶ 6).

342. The Consent Decree provides that "Defendant shall not cause, suffer, allow, or permit the combustion of any refinery process gas stream or any other process gas stream that contains hydrogen sulfide in a concentration greater than 50 grains per 100 cubic feet of gas." *Id.*

343. The Consent Decree provides that “Defendant shall be liable for stipulated penalties for . . . any failure to maintain compliance . . . , a stipulated penalty for each such failure, in accordance with the [provided] schedules.” Id. at 19, ¶ VI.A.2.

344. The Consent Decree specifically sets forth the following schedule of stipulated penalties for “any failure to maintain compliance” with the 50 grains of H₂S per 100 cubic feet of gas standard:

Level of Exceedance of Standard Penalty Per Violation

Greater than 50 grains but not greater than 54 grains \$900

Greater than 54 grains but not greater than 80 grains \$1,800

Greater than 80 grains but not greater than 120 grains \$1,200

Greater than 120 grains but not greater than 200 grains \$2,400

Greater than 200 grains \$3,000

(Id. ¶ VI.A.2.a).

345. When MSC exceeded its H₂S limit, it notified EPA pursuant to the terms of the 1996 Consent Decree. (Tr. 741-42).

346. EPA never responded to MSC’s notifications or reports pursuant to the Consent Decree. (Id.).

347. James Hagedorn, the EPA official who received many of MSC’s notices, filed them away without any acknowledgment that he received them or any investigation. (Tr. 92; 96-97).

348. Under the terms of the Consent Decree, MSC cannot pay its penalties until it receives payment instructions from the Government. (Ex. JT-8 at 24, §§ F, G; Tr. 740-41).

349. MSC has never received any instruction from the Government regarding payment of penalties. (Tr. 741).

350. When the Government and a company sign a consent decree that stipulates a schedule of penalties, it is fair and appropriate to assess stipulated penalties in accordance with that stipulated schedule. (Tr. 99-100).

351. According to the 1996 Consent Decree, this Court retains jurisdiction to construe its terms. (Ex. JT-8 at 35, ¶ XV.B).

352. The Consent Decree can only be terminated by MSC through petition to this Court. *Id.*

353. MSC has never submitted such a petition.

354. The federal and state government witnesses uniformly and expressly testified that MSC has always been cooperative with EPA and WVDEP. (Tr. 83; 120; 171).

355. The Government's sole witness concerning economic benefit was Robert Harris, who claims that MSC received an economic benefit of \$2,046,000 based on the alleged failure to replace the primary cooling unit in the byproducts plant in 2007. (Tr. 553; 559-60).

356. Mr. Harris did not identify any actual tangible economic benefit; rather, his assessment is "a theoretical computation." (Tr. 567).

357. When Mr. Harris produced his first report in May 2013, he opined that MSC had received an economic benefit of \$36 million from the alleged opacity, H₂S, and RCRA violations. (Tr. 553-54).

358. He then reduced that amount to \$34 million after the Government asked him "to remove the items that were associated with the RCRA violations." (*Id.*).

359. During trial, Mr. Harris removed the supposed economic benefit associated with through wall replacements from his economic benefit calculation because, based on John McGrew's testimony, "it became clear ... that it was going to be very difficult to determine the noncompliance date, even though we had a date originally of 2007. ... So there's no way to know exactly what the condition was in 2007." (Tr. 553-54).

360. On cross-examination, Mr. Harris admitted that he excluded the cost of replacing the through walls, which supposedly need to be replaced to prevent opacity violations, because John McGrew's testimony was "not reliable." (Tr. 565).

361. Mr. Harris's sole remaining economic benefit calculation is based on the assumption that MSC should have replaced its primary cooling unit in March 2007, in order to prevent H₂S violations. (Tr. 554; 558-59; 565).

362. Mr. Harris relied solely on Karl Svoboda for that assumption. (Id.).

363. If Karl Svoboda was wrong about the need to replace the primary cooling unit, then Mr. Harris's opinion on economic benefit is wrong, because that is a "fundamental assumption to" Mr. Harris' analysis. (Tr. 565-66).

364. Inasmuch as this Court has determined that it is not necessary or reasonable to replace the primary cooling unit, the EPA has failed to establish any economic benefit.

365. MSC admits and stipulates that the amount of civil penalty owed using the 1996 Consent Decree penalties is \$2,381,400.

366. This Court will impose a civil penalty for H₂S exceedances of \$2,381,400.

Eighth Claim for Relief - RCRA Subtitle C Violations

367. As set forth in the Court's Order, the only remaining RCRA Subtitle C issue related to whether benzene air emissions occur from COGC in the conveyance trench and

whether those emissions are subject to RCRA. (Doc. 182, pp. 17, 18 and 20-21).

368. Based on the testimony at trial, benzene air emissions from COGC in the conveyance trench are “uncontained gases” and, therefore, not subject to RCRA regulation. (Tr. 623; 967-68).

369. Both RCRA and the Clean Air Act have the ability to regulate air emissions; however, RCRA’s regulation of air emissions is limited to regulation of materials that are already determined to be a solid waste and a hazardous waste. (Tr. 955).

370. The Government presented evidence in support of its argument that COGC was not being handled like a valuable product and therefore not being legitimately recycled.

371. EPA’s trial testimony contradicts the Court’s January 14 Order, which decided those issues. The 1/14/14 Order stated that the Court did not even need to reach the issue of recycling exemptions because the Government had not made the required threshold showing that COGC is a solid waste. (Doc. 182 at 19-20) (“The Court does not find that the COGC stored in drip legs is a solid waste. The COGC is not abandoned through disposal or accumulated as is required to be a solid waste under 40 C.F.R. § 261.2(a-b).”).

372. The Order further stated that, if the Court did reach the question of whether MSC’s recycling of COGC is exempt, it would answer that question affirmatively. (Id. at 20) (“Additionally, as will be discussed below, even if the COGC were a solid waste, MSC’s handling of COGC constitutes an excluded form of recycling under the regulations, and therefore is exempt from regulation under the RCRA.”).

373. At the January 16, 2014, Pretrial Conference, the parties were in agreement that recycling issues were mooted by the Order. (Pretrial Conference Tr. (Doc. 186) at 15-16; 17-18).

374. Even if the issue were still open, the former method of conveyance was consistent with the beneficial reuse of the material and the Court's prior ruling that the COGC is not a RCRA solid waste. (Tr. 962).

375. The EPA failed to demonstrate that the so-called trench emissions are regulated under Subtitle C of RCRA.

376. Therefore, judgment is entered in MSC's favor on the balance of the United States' Eighth Claim for Relief.

Tenth Claim for Relief – Alleged Purifier Oil Violations

377. Under the Resource Conservation and Recovery Act ("RCRA"), a material is a solid waste only if it is abandoned by being "[a]ccumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated." (40 C.F.R. § 261.2(b)(3)).

378. MSC has always managed the purifier oil in compliance with the RCRA recycling exception, thus exempting it from regulation as a waste. (See 40 C.F.R. § 261.2(c)).

379. Because the residual purifier oil identified by USEPA was recycled in such a manner the EPA deemed not to create a waste, it was not accumulated, stored, or treated before or in lieu of being abandoned by being disposed of, burned, or incinerated. Rather, it was accumulated or stored before being recycled.

380. A material that is recycled as a non-waste does not become a waste because it is stored beforehand. (See 50 Fed. Reg. 614, 636 (Jan. 4, 1985) ("We therefore are not adopting any time limit on when a commercial chemical product held for recycling becomes a waste. ... [T]hese materials are wastes when discarded or intended for discard (by means

of abandonment), and are not wastes when stored for recycling.”).

381. Thus, § 261.2(b)(3) does not apply, and the purifier oil is not a waste.

382. Because the purifier oil was not a waste, there was no RCRA violation and therefore no basis for penalties.

383. Under RCRA, penalties shall not exceed \$25,000 per day of noncompliance. (42 U.S.C. § 6928(a)(3)).

384. Under RCRA, penalty amounts shall be determined by taking into account the seriousness of the violation and any good faith efforts to comply with applicable requirements. (42 U.S.C. § 6928(a)(3)).

385. MSC demonstrated good faith in response to EPA’s concerns. The purifier oil was immediately removed and recycled. Any cracks in the secondary containment were immediately repaired.

386. Even if the management of the purifier oil did violate RCRA, it was not a serious violation.

387. There is no evidence that the purifier oil ever escaped the confines of the tank. It also is not alleged that the purifier oil actually might have caused any harm to any person or property.

388. The tank now has been empty for 3 years.

389. Thus, even if there was a violation, no civil penalty or injunction is warranted.

Eleventh Claim for Relief – Alleged Roll-off Box Violations

390. Under RCRA, a waste generator must determine if that waste is a hazardous waste using the following method:

- a. Determine if the waste is excluded from regulation under 40 C.F.R.

§ 261.4;

b. Determine if the waste is listed as a hazardous waste in subpart D of 40 C.F.R. § 261;

c. If the waste is not listed in subpart D of 40 C.F.R. § 261, determine if it is listed in subpart C by either

i. testing the waste according to the methods found in subpart C of 40 C.F.R. § 261 or under 40 C.F.R. § 260.21; or

ii. applying knowledge of the hazard characteristic of the waste in light of the materials or processes used.

(40 C.F.R. § 262.11).

391. MSC employs waste managers who follow the waste determination procedure articulated in 40 C.F.R. § 262.11.

392. MSC's roll-off waste management practices are compliant with RCRA regulations.

393. Under RCRA, penalties shall not exceed \$25,000 per day of noncompliance. (42 U.S.C. § 6928(a)(3)).

394. Under RCRA, penalty amounts shall be determined by taking into account the seriousness of the violation and any good faith efforts to comply with applicable requirements. (42 U.S.C. § 6928(a)(3)).

395. Even if MSC's waste management practices were not in compliance with RCRA regulations, any violations would not be serious.

396. All waste was properly labeled and then characterized by undergoing testing at third-party laboratories. Any technical procedural deficiencies bear no practical

consequences.

397. MSC has demonstrated good faith by developing practices that, by any reasonable comparison to the regulations, are wholly appropriate.

398. Even if MSC's practices were not in full compliance with RCRA regulations, there would only be evidence of a violation during the one day such practice was observed during the NEIC investigation.

399. Even if there was a violation, no civil penalty is warranted.

Twelfth Claim for Relief – Alleged RCRA Subtitle I Violations

400. These claims were withdrawn and dismissed.

Conclusion

For the reasons stated above:

A. This Court hereby enters an injunction requiring both Mr. Immurs (at the expense of MSC) and Mr. McGrew (at the expense of the EPA) meet at MSC, look inside non-burning flues through the inspection caps/ports, and report to the Court as to which, if any, of the oven walls need to be replaced and which, if any, may be handled in a less drastic manner. Such report shall be due by October 15, 2014.

B. This Court also enters an injunction requiring MSC to install and utilize an automated system that tracks oven charging times at Battery 8 with the COM data and use this system on an on-going basis to identify ovens that cause opacity violations and to evaluate the need for further maintenance to prevent future violations.

C. With regard to civil penalties for the 27 violations in the Third Claim for Relief, this Court hereby imposes civil penalties in accordance with the consent decree in the total amount of \$27,000.

D. This Court hereby enters an injunction requiring MSC to clean all spirals in the heat exchangers as soon as practicable and establish a regular cleaning schedule for the same.

E. This Court will impose a civil penalty for H₂S exceedances of \$2,381,400.

F. The Eighth Claim for Relief is **DISMISSED**.

G. The Tenth Claim for Relief is **DISMISSED**.

H. The Eleventh Claim for Relief is **DISMISSED**.

I. The Twelfth Claim for Relief was **DISMISSED**.

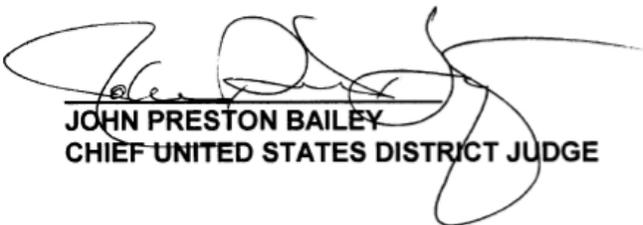
J. Defendant Mountain State Carbon, LLC's Motion *In Limine* for Exclusion of Third-Party Financial Documents [Doc. 205] is **DENIED**.

K. Defendant's Oral Motion for Directed Verdict [Doc. 214] is **DENIED AS MOOT**.

It is so **ORDERED**.

The Clerk is directed to transmit copies of this Order to all counsel of record herein.

DATED: July 17, 2014.



JOHN PRESTON BAILEY
CHIEF UNITED STATES DISTRICT JUDGE