
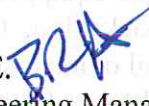


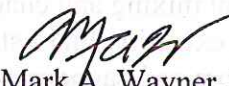
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHWEST REGIONAL OFFICE

MEMO

TO Air Quality Permit File TVOP-04-00033

FROM Sheila A. Shaffer 
Air Quality Engineering Specialist
Bureau of Air Quality

THROUGH Barbara R. Hatch, P.E. 
Environmental Engineering Manager
Bureau of Air Quality


Mark A. Wayner, P.E.
Air Quality Manager
Bureau of Air Quality

DATE September 9, 2014

RE Review of Title V Operating Permit Renewal Application
NOVA Chemicals Inc.
Beaver Valley Plant
Potter Township, Beaver County
APS# 588889; AUTH # 640079; PF# 245153

BACKGROUND

Since 1942, this facility has been in operation under various owner/operators and has manufactured a variety of chemical materials. Currently, NOVA manufactures various grades of styrenic thermoplastic resins at this facility. These intermediate products are sold to others and used for the manufacture of various products, including foam drinking cups, building insulation, packaging material and floatation material such as watercrafts.

In accordance with 25 Pa Code 127.403, NOVA submitted a Title V Operating Permit application on November 27, 1995. The initial TVOP was issued on December 17, 2001 and expired on December 31, 2006.

On June 30, 2006, the Department received a Title V operating permit renewal application in accordance with to 25 Pa. Code Sections §§127.501-127.542. On August 24, 2006, the Department determined the application was Administratively Complete. NOVA has been operating under 25 Pa Code Section 127.446(c): The terms and conditions of an expired permit are automatically continued pending the issuance of a new permit when the permittee has submitted a timely and complete application and paid the fees required by Subchapter I and the Department is unable, through no fault of the permittee, to issue or deny a new permit before the expiration of the previous permit.

NOVA has updated their Title V Operating Permit application and submitted supplementary materials to include a number of changes that occurred since the 2006 submittal, including shutdowns, new applicable federal requirements, a revised CAM Plan and a request to establish emissions trading in accordance with 25 Pa Code § 127.448.

SOURCES, CONTROL DEVICES and EMISSIONS

Sources and processes at this facility consist of raw material storage tanks, production areas that include raw material mixing and charging, reactors equipped with condensers, wash kettles, centrifuges, driers, extrusion lines, storage and packaging. Control devices include scrubbers, filters, dust collectors and baghouses, and thermal oxidizers. Additionally, NOVA is authorized to construct up to sixteen (16) natural-gas fired boilers (rated at 11.7 mmbtu/hr each). This construction was authorized under GP1 (General Plan Approval/Operating Permit for Small Gas and No. 2 Oil Fired Combustion Units) GP1-04-00033.

Sources 031 through 046:

Up to sixteen (16) Miura LXH-300 natural gas fired package boilers (each rated at 11.7 mmbtu/hr), are being installed under the authority of GP1 (General Plan Approval/Operating Permit for Small Gas and No. 2 Oil Fired Combustion Units). In the past, NOVA had received their steam from the adjacent AES Beaver Valley EGU. It is anticipated that the AES plant will be inactivated on December 31, 2014, so the boiler project was undertaken to provide a new source of steam to the facility.

100 Series Sources - D3 (PS and EPS) and D4 (EPS) Process Equipment:

Polystyrene (PS) Bead Production - In the D3 area, the polystyrene (PS) bead production process begins with styrene being charged to batch reactors with water, reaction initiators, and other additives. For each bead type, a specific time, temperature, and pressure cycle is followed. At the completion of the cycle, the reactor contents are pressure transferred to the wash kettle/hold tank while the reactor is heated. The slurry is then dewatered via centrifuge and dried before the beads are either sent to storage silos or pneumatically transferred to a bead size classification system where they are separated into specific size categories and then stored in silos.

Expandable Polystyrene (EPS) Production - The conversion of PS beads to EPS beads is performed both in the D3 and the D4 area. A weighed quantity of PS beads of a specific size is charged in a batch reactor with water and other additives. During the specific time, temperature and pressure cycle, pentane is added as a blowing agent. At the completion of the cycle, the reactor contents are cooled and transferred to a wash kettle/holding tank where hydrochloric acid is added to the product slurry. The slurry is dewatered and dried. The beads are pneumatically conveyed to a final classification step and stored in bins for packaging. EPS beads are blended with specific additives, weighed and packaged in bulk bags in the packaging area and then transferred to the warehouse for storage and shipment. Reactor additive mixes for D4 are made in the packaging area.

VOC emissions from D3 and D4 Process Equipment are controlled by the Pentane Emission Reduction System (PERS). PERS consists of two collection headers, a baghouse to prevent solids carryover and a primary regenerative thermal oxidizer/regenerative catalytic oxidizer (RTO/RCO) for VOC control (C012). A direct fired thermal oxidizer (DFTO) or flare (C0112) is also available to be operated as a back-up in the event of a malfunction of the primary thermal oxidizer. PERS was initially installed in 1992 under PA-04-313-065 and the oxidizer operated solely in a regenerative thermal oxidizer (RTO) mode. In 2006, TVOP-04-00033 was modified using the Minor Permit Modification provisions of 25 Pa Code § 127.462 to authorize the addition of catalytic capability. This change reduced the operating temperature of the oxidizer, resulting in reduced NOx emissions and lower natural gas operating costs. The oxidizer may be operated either the RTO or RCO mode. The PERS is required to operate at a destruction efficiency of 97 percent or greater and overall reduction efficiency (capture plus control) of 85 percent.

200 Series Sources- D2 (PES /ARCEL) Process Equipment:

There are 2 types of products manufactured in the D2 plant: Interpolymer Polyethylene Styrene (PES), and ARCEL Moldable Polyethylene Copolymer.

Interpolymer PES - Interpolymer PES refers to the material produced from polyethylene pellet feedstock prior to being converted to ARCEL. The pellet feedstock, produced in the D3 Extrusion Area, is transported to D2 by railcar and pneumatically conveyed to a weigh bin. First water, then pellets are added to the reactor. Styrene, additives and reaction initiators are transferred as mixes to the reactor at specific rates while the temperature of the reactor follows a precise cycle. At the completion of the batch, the bead/water slurry is transferred to the wash kettle where hydrochloric acid or polyacrylic acid is added. The slurry is dewatered, dried, screened, and conveyed to a storage silo.

ARCEL - The Interpolymer PES is conveyed to the reactor. Isopentane (blowing agent) and other additives are added at a specific rate to the reactor as the temperature of the reactor is controlled following a specific temperature cycle. At the completion of the cycle, the contents are cooled using a chiller system. The cold slurry is dewatered and dried, packaged, and placed in the ARCEL Cold Storage warehouse at D2. ARCEL pellets ready to be expanded to make final products.

VOC emissions from the D2 process equipment (reactors and packaging) are controlled by a catalytic oxidizer (CATOX) (C0230).

300 Series Sources - D3 Process Area:

In the D3 area, styrene is charged to batch reactors with water, reaction initiators and other additives. A specific time/temperature/pressure cycle is followed, resulting. Afterwards the slurry contents are transferred to wash kettles, de-watered and sent to storage. The suspension reactors vent through chilled glycol condensers (SERS). The reactors are swing reactors which produce Dylene, PS or EPS. When operating in Dylene or PS service, emissions are controlled

with the SERS system. When operating in EPS service emissions are controlled by the PERS system.

VOC emissions from the D3 Dylene area are controlled by the Styrene Emission Reduction System (SERS) which consists of 12 condensers.

600 Series Sources – D# Extrusion Lines 1, 3, 4 and Sheet Plant

There are 2 products produced in the D3 Extrusion Area: ARCEL feedstock and Dylene 8-80.

ARCEL Feedstock - Polyethylene beads (procured elsewhere) are transferred from hopper cars and feed into a continuous mixer where the beads are melted. At a specific temperature, the melted material drops into the extruder. The molten material exits the extruder into the underwater pelletizer, where the polymer strands are cut, quenched, conveyed to the dryer, and then sent to checkbins.

Dylene 8-80 - Polystyrene beads (procured elsewhere) are transferred from silos and fed into a continuous mixer where the beads are melted. At about 450 degrees Celsius, the melted material drops into the extruder. The same process is followed as the ARCEL feedstock. The molten material exits the extruder into the underwater pelletizer, where the polymer strands are cut, quenched, conveyed to the dryer, and then sent to storage. The material is loaded into railcars and occasionally cartons.

700 Series Sources – Field Storage

Field Storage includes pentane and styrene storage tanks, barge and truck unloading, and fugitive emissions from this equipment.

800 Series Sources – General Plant

General Plant includes miscellaneous smaller sources such furnaces, small storage tanks, miscellaneous fugitive PM and VOC sources, wastewater treatment lagoons, etc.

In the 1980s, a fugitive leak detection and repair program with implemented in accordance with 25 Pa Code § 129.71. Since then enhancements have been made to the program to account for additional monitoring required by the various applicable MACT regulations.

A breakdown of the sources included in each general area, and the requirements that apply to each, are shown in ATTACHMENTS 1-5.

Facility-wide potential emissions are estimated as follows:

TABLE 1 - Potential Emissions (tpy)							
	NOx	CO	VOC	SOx	PM (total)	Styrene	CO2e
031-046 Boilers (16)	12.0	30.2	4.4	0.5	6.1	-	95,695
105 D3/D4 EPS (RACT)	-	-	254	-	-	-	-
201 D2	-	-	57	-	-	-	-
305 D3 Dylene (RACT)	-	-	11	-	-	-	-
605 D3 Extrusion (RACT)	-	-	7	-	-	-	-
705 Field Storage (RACT)	-	-	5	-	-	-	-
805 General Plant (RACT)	-	-	3	-	-	-	-
Misc. (other non-RACT)	10.0	79.0	44.6	0.1	10	40	24,550
TOTALS	22.0	109.2	386	0.6	16.1	40	120,245

PERMITTING HISTORY

The NOVA files have been reviewed with regard to past Air Quality authorizations.

The following actions took place prior to the issuance of the initial TVOP on December 17, 2001:

04-313-060: In 1988 an Operating Permit was issued for the Styrene Plant. The plant shut down and this permit has since been inactivated.

04-313-065: On June 29, 1992, a Plan Approval was issued to authorize the installation and operation of a Pentane Emission Reduction System (PERS) which includes a regenerative thermal oxidizer and a direct fired thermal oxidizer (DFTO). The DFTO functions as the backup oxidizer for reduction of the VOC (pentane) emissions captured from the D3 and D4.

04-313-074: This Plan Approval was issued on March 18, 1994 to authorize the installation of an area vacuum system in the D3 area. This fabric collector unit is used for industrial hygiene and housekeeping purposes, to clean up any material that spills on the floor.

04-313-066: On June 8, 1994, a Plan Approval was issued to authorize the installation of the Styrene Emission Recovery System (SERS) on the D3 Process Equipment for control of styrene.

04-302-057: This permit was for a natural gas fired steam boiler that was inactivated on April 18, 1995.

04-313-069: On February 6, 1995, a Plan Approval was issued to authorize an increase of the P-20 line production to 3500 #/hour. The VOC emissions from this process were controlled by a fume scrubber system (95% efficiency) and the particulate emissions are controlled by four baghouses (99% efficiency).

04-313-052 and 04-313-052A: These Plan Approvals were issued in 1993 and 1996 for modification of the Dylark unit to include direct contact condensers and the installation of a secondary recovery device..

04-313-065A: On July 16, 1999, Plan Approval was issued to authorize the installation and operation of a baghouse in conjunction with PERS previously authorized under PA-04-313-065. All particulate emissions are captured in a baghouse and VOCs are destroyed in the thermal oxidizer.

04-313-069A: This permit was issued on May 9, 1996 for the installation and operation of four (4) baghouses and a 1,100 SCFM thermal oxidizer added to the P-20 compounding line. The new control devices replaced the fume scrubber system installed under Plan Approval 04-331-069 that was not performing as anticipated.

04-000-033: The RACT Plan Approval was issued on November 20, 1996 for the VOC sources existing at the time of the RACT analysis. This RACT Plan Approval established VOC emission limits for process lines as well as a facility wide limit. RACT was determined to be the continued operation of the facility with the existing control devices. This RACT Plan was submitted to the EPA for SIP review on April 20, 1999. The company requested that the SIP review be put on hold in August of 1999 pending clarification of the language regarding the sources covered under RACT as those existing at the time of issuance/analysis and to correct errors. The revised RACT Operating Permit was reissued in January of 2001. The revised RACT conditions and emission limits were included in the initial TVOP, and have been carried forward to this renewal TVOP where applicable.

PA-04-00033A: This Plan approval was issued on September 13, 1999, to authorize the modification of the D2 Unit and the installation of a D2 Liquid Lube Dylite process.

TVOP-04-00033: In accordance with 25 Pa Code § 127.403, NOVA submitted a Title V Operating Permit application on November 27, 1995. Application was resubmitted on January 25, 2001, at the Department's request. The initial TVOP was issued on December 17, 2001 and expired on December 31, 2006.

Since the initial TVOP was issued on December 17, 2001, the following actions have been approved by the Department:

On January 14, 2003, under the de minimis provisions of 25 Pa. Code §127.449, the Department authorized the temporary operation of a 225 KW skid mounted diesel generator to supply power while repairs were being conducted on a substation. The total emission increase was estimated to be less than 0.7 tpy NO_x, 0.06 tpy CO; 0.18 tpy VOC and 0.01 tpy PM.

On March 4, 2003 and again on November 25, 2003, under the authority of 25 Pa Code §127.450, the TVOP was administratively amended to change the Responsible Official.

On June 23, 2003, under the de minimis provisions of 25 Pa. Code §127.449, the Department authorized the temporary operation of two diesel generators to supply power while repairs were being conducted on a substation. The total emission increase was less than 0.98 tpy NOx; 0.087 tpy CO; 0.034 tpy VOC; and 0.013 tpy PM.

On September 25, 2003, under the de minimis provisions of 25 Pa. Code §127.449, the Department authorized the temporary operation of 5 diesel generators to supply power while repairs were being conducted on a substation. The combined NOx emissions were estimated to be less than 12.3 lbs/hr; 295 lbs/day; 2.04 tpy and zero tons per ozone season.

On December 8, 2003, under the provisions of 25 Pa. Code §127.14(c)(1), Phase 1 modifications to the D2 Plant Area were determined to be exempt from Plan Approval requirements. The RFD approval included requirements for monthly reports including VOC emissions, supporting calculations, progress reports on Phase II and ARCEL production.

On January 7, 2004, under the authority of 25 Pa Code §127.14(c)(2), the Department exempted from Plan Approval changes to the Dylark Styrene/Maleic Anhydride (SMA) Process, including installation of a bulk truck unloading and usage platform and upgrades to the water softening system. The formulary change did not result in an emission increase.

PA-04-00033B: Plan Approval was issued On February 4, 2004, to authorize an expansion of the D2 PES/ARCEL Plant Area. New equipment included raw material handling equipment, Feed tanks, six (6) reactors, holding tanks and two (2) dryers. The installation of a catalytic oxidizer with recuperative heat recovery (CATOX) for control of VOC emissions from the expanded processes was determined to be BAT for the new sources. Allowable VOC emissions were reduced to 56 tpy from 186 tpy. Applicable requirements from PA-04-00033B have been added to the proposed TVOP.

On March 15, 2005, under the provisions of 25 Pa. Code §127.14(8), the Department exempted from Plan Approval the removal of obsolete equipment in the D2 area. No emissions were associated with this exemption.

On April 7, 2005, under the provisions of 25 Pa. Code §127.14(8), the Department exempted from Plan Approval the dedication of Line 3 of Source 601 to provide PE feedstock necessary to support PES product needs. The total emission increase from this area was estimated to be less than 1.75 tpy VOC.

On September 15, 2005, under the provisions of 25 Pa. Code §127.14(a)(9), the Department exempted from Plan Approval the collection of fines from two PES dryer exhausts via a low-pressure water venture in the exhaust of each line. This change was for industrial hygiene purposes and not to comply with regulatory requirements.

On November 16, 2005, under the deminimis provisions of 25 Pa. Code §127.449, the Department authorized the installation of a flash tank, styrene heater, dried styrene cooler, dried styrene product pump, overhead condenser, decanter, vacuum pumps, water pump, recycle

styrene pumps and a glycol system.. This installation was due to the vendor-driven changes in raw material and operability and product quality issues in the Dylark Process. The total emission increase was estimated to be less than 175 lbs/year VOC.

On February 2, 2006, under the provisions of 25 Pa. Code §127.14(8), the Department exempted from Plan Approval the post emergency cleanout of two D3 reactors under Source 301 and three dryers in EPS Source 101 due to a power outage. The one time emission release was estimated at 250 pounds of VOC which included 200 pounds of styrene and 50 pounds of pentane.

On June 5, 2006, under the provisions of 25 Pa Code §127.462, the Department revised the TVOP to include a minor operating permit modification. The modification authorized the operation of the RTO in a second mode, RCO, as an alternative operating scenario.

On January 28, 2006, under the deminimis provisions of 25 Pa. Code §127.449, the Department authorized a VOC emission increase of 175 pounds per year in the Dylark Process Area.

On August 29, 2006, the Department authorized the addition of a ARCEL inlet cooling system process dryer to be exempt from Plan Approval requirements under the provisions of 25 Pa. Code §127.14(8) with no emission increase.

On September 1, 2006, under the provisions of 25 Pa. Code §127.14(a)(8), the Department exempted from Plan Approval the replacement of an in-line LEL meter and a one-time pentane release from the Packing System vent in D3 to be exempt from Plan Approval requirements The total emission increase was estimate at 2,400 pounds of pentane.

On September 21, 2006, under the provisions of 25 Pa. Code §127.14(a)(8), the Department exempted from Plan Approval a trial polystyrene (PS) product formulation for Source 301. There was no emission increase associated with this trial.

On December 1, 2006, under the provisions of 25 Pa. Code §127.14(a)(8), the Department exempted from Plan Approval the addition of a new exhaust point from 2 mini-lines of the pilot plant (R&D). The total emissions were estimated at less than 0.05 tpy VOC.

On August 16, 2007, under the provisions of 25 Pa. Code §127.14(8), the Department exempted from Plan Approval a one-time emission increase resulting from a batch of EPS beads being transferred to the sump due to a formulation deviation in reactor 402. The total emissions released were estimated at 2,000 pounds of pentane.

On August 24, 2010, under the provisions of 25 Pa. Code §127.14(c)(1), the Department exempted from Plan Approval a trial to modify the order in which raw materials are added to the polystyrene production reactor. The total emission increase was estimated at 15 pounds of styrene.

On May 11, 2011 a Maintenance and Reactivation Plan developed in accordance with the provisions of 25 Pa. Code §127.11a and §127.215 was received for the preservation of emissions

from Sources 101, 105, 110, 115, 120, 125, 130 and 135. A Reactivation Plan Notification was received from NOVA on October 4, 2012 and approved on December 14, 2012. These sources have since resumed operation.

On August 1, 2013, under the provisions of 25 Pa Code §127.14(c)(1), the Department exempted from Plan Approval a CO₂ release required in order to perform maintenance on the CO₂ storage tank of the Waste Water Treatment System.

On April 14, 2014, under the provisions of 25 Pa Code §127.449 the Department approved a de minimis emission increase resulting from the venting of three truckloads of styrene. The potential emission increase was proposed to be less than 2.4 pounds of styrene.

GP-1-04-00033: On July 3, 2014, DEP authorized the installation of up to 16 Miura LXH-300 natural gas fired package boilers (each rated at 11.7 mmbtu/hr) under the authority of GP-1 (General Plan Approval/Operating Permit for Small Gas and No. 2 Oil Fired Combustion Units)

The changes that have taken place since the initial TVOP was issued have not triggered any PSD or Non-Attainment New Source Review requirements.

REGULATORY ANALYSIS

The following regulations were evaluated for possible applicability to sources at the NOVA facility.

40 CFR 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

In accordance with 40 CFR § 60.40c(a),...this subpart applies to each steam generating unit for which construction... commenced after June 9, 1989 and that has a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr. In accordance with 40 CFR §60.41c, "steam generating unit" means a device that combusts any fuel and produces steam or heats water or heats any heat transfer medium..." The 16 boilers (each rated at 11.7 mmbtu/hr), installed in 2014 under the authority of GP-1-04-00033, are subject to applicable requirements of this regulation.

40 CFR 63, Subpart H - National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks

In accordance with 40 CFR §63.160, the provisions of this subpart apply to pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, instrumentation systems, and control devices or closed vent systems that are required to operate in organic HAP service 300 hours or more during the calendar year within a source subject to the provisions of a specific subpart in 40 CFR Part 63 that references this subpart. NOVA provided applicability to 40 CFR Part 63, subpart FFFF, Table 6 which concluded NOVA must comply with LDAR requirements

in Subpart H or UU; therefore, this subpart has been include into the Title V Operating Permit renewal.

40 CFR 63, Subpart UU - National Emission Standards for Equipment Leaks-Control Level 2 Standards

In accordance with 40 CFR §63.1019, the provisions of this subpart apply to the control of air emissions from equipment leaks for which another subpart references the use of this subpart for such air emission controls. NOVA provided applicability to 40 CFR Part 63, subpart FFFF, Table 6 which concluded NOVA must comply with LDAR requirements in Subpart H or UU; therefore, this subpart has been include into the Title V Operating Permit renewal.

40 CFR 63, Subpart JJJ - National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins

In accordance with 40 CFR §63.1310, the provisions of this subpart apply to each new and existing thermoplastic product process units (TPPU) and associated equipment, that is manufacturing the same primary product, and that is located at a plant site that is a major source. NOVA has provided an applicability analysis of this subpart which has been included into the Title V Operating Permit renewal.

40 CFR 63, Subpart FFFF - National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing

In accordance with 40 CFR §63.2435, the provisions of this subpart apply to miscellaneous organic manufacturing process units (MCPU) that at located at, or are part of, a major source of HAP emissions. NOVA has provided an applicability analysis of this subpart which has been included into the Title V Operating Permit renewal.

40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

In accordance with 40 CFR §63.6585, the provisions of this subpart apply to the operation of a stationary RICE at a major or area source of HAPs. NOVA has determined that the 17 hp gasoline fired engine is subject to this subpart and has provided an applicability analysis of this subpart which has been included into the Title V Operating Permit renewal.

40 CFR 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Industrial, Commercial, and Institutional Boilers

In accordance with 40 CFR §63.7485, you are subject to this subpart if you own or operate a boiler at a major source of HAP. NOVA is currently a major source of HAP therefore this subpart will apply to the boilers installed in 2014 under GP-1-04-00033. In accordance with 40 CFR § 63.7495, the applicant must comply with this subpart upon startup. Requirements include work practice standards of §63.7500 as specified in Table 3, notification requirements of §63.7545, and reporting requirements of §63.7550 as specified in Table 9. Applicable work practice standards include conducting a tune-up of the boilers annually as specified in §63.7540.

40 CFR Part 64- Compliance Assurance Monitoring

This part was promulgated on October 22, 1997 and applies to pollutant-specific emissions units at a major source that is required to obtain a Title V operating permit if the units satisfy the following criteria (*per 40 CFR 64.2*):

- (1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof);*
- (2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and*
- (3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.*

NOVA is a major source required to obtain a Title V Operating Permit. The following sources are subject to VOC emission limitations, use control devices to achieve compliance with the VOC emission limitations, and have the potential pre-control VOC emissions greater than 50 tons per year:

- D2 Equipment (Source 230) controlled by Catalytic Oxidizer (CD 230)
- D3 & D4 Equipment (Source 110) controlled by PERS (CD110, CD 111, and CD 112)
- D3 Dylene Equipment (Source 315) controlled by SERS (CD315)

CAM Plans for these sources and control devices have been provided by NOVA as part of the TVOP Renewal application and supplementary materials. The CAM Plans have been incorporated into the proposed TVOP.

40 CFR Part 98 Subparts A, C - Mandatory Greenhouse Gas Reporting

This part was promulgated on October 30, 2009. Per 40 CFR Section 98.2(a), the Greenhouse Gas (GHG) reporting requirements and related monitoring, recordkeeping, and reporting requirements of this part apply to the owners and operators of any facility that is located in the United States and that meets the requirements of either paragraph (a)(1), (a)(2), or (a)(3) of this section.

However, public comments to the Greenhouse Gas Mandatory Reporting Rule (GHG MRR) questioned the requirements of this rule to meet current definitions of “applicable requirement” at 40 CFR §§ 70.2 and 71.2. The commentators requested that USEPA confirm their interpretation of the regulations. The EPA provided the following response: “As currently written, the definition of “applicable requirement” in 40 CFR 70.2 and 71.2 does not include a monitoring rule such as today’s action, which is promulgated under CAA sections 114(a)(1) and 208.” The preamble of the final version of the GHG MRR, located at 74 Fed Reg 209, pp. 56287-56288, states that the GHG MRR is not considered an “applicable requirement” under the Title V Operating Permit program. Therefore, this Subpart, while it may be an obligation for NOVA, is not considered an applicable requirement for this Title V Operating Permit.

The Greenhouse Gas Tailoring Rule was issued in May 2010. This rule establishes a process for conducting Prevention of Significant Deterioration (PSD) reviews, including Best Available

Control Technology (BACT) determinations for control of greenhouse gases (GHG) when a new source or a modification to an existing source results in emissions of GHGs in excess of certain thresholds. Since May, 2010, there have not been any modifications to NOVA facility that triggered a GHG PSD review.

25 PA Code § 127.448, NOVA has requested the establishment of an emission trading program in accordance with 25 PA Code § 127.448.

PERMIT CHANGES

To better clarify actual existing equipment arrangements and applicable requirements, NOVA requested the following changes to Section A. Site Inventory List: Deletion of Source IDs- 205, 210, C0210, S210; Renaming of Source IDs- 220, 310, 320, S315, S115, S130, S135, S215, S225, S320, S335, S610, S710; and Addition of new Source IDs- 230, C0230, S230, 231, Z231, C0225, 1000, S1000.

Annual and Semi-annual compliance certification reporting periods and submittal dates have been update per NOVA's request. The annual compliance certification reporting period begins March 1 and ends on the last day of the month of February. The report must be submitted no later than March 30 of each year. With this, the semi-annual monitoring reporting period has been changed to coincide with the annual compliance reporting. The 6-month monitoring report shall cover periods March 1 through August 31 and September 1 through the last day in February. The September 1 through the last day in February semi-annual monitoring report may be included in the Title V Compliance Certification.

Applicable requirements from the Federal regulations discussed above have been added to the TVOP.

The requirements of Plan Approval PA-04-00033B and Boiler General Permit GP-1-04-00033 have been added to the TVOP.

CONCLUSIONS and RECOMMENDATIONS

On June 29, 2006, NOVA Chemicals, Inc. submitted the renewal Title V Permit Application located in Potter Township, Beaver County. NOVA has complied with the municipal notification requirements contained in 25 Pa. Code §127.413: municipal notification was received by Potter Township on June 23, 2006 and by Beaver County on June 26, 2006. A fee of \$750 was remitted to the "Clean Air Fund: by NOVA as required under 25 Pa. Code §127.704 (b)(3).

In accordance with 25 Pa Code § 127.521, a Notice of Intent to Issue will be published in the Pa. Bulletin for a 30 day comment period. NOVA will be responsible for publishing a similar notice in a local newspaper for three days. The proposed operating permit and memo will also be submitted to EPA for a 45 day comment period. Arrangements will be made to give the inspector for this facility the opportunity to review the proposed TV Operating Permit renewal.

On September 9, 2014, a full compliance evaluation inspection was performed by Mr. Richard Kilpatrick, Air Quality Specialist. Mr. Kilpatrick did not note any violations at the time of his inspection. It is my recommendation that the Title V Operating Permit renewal for NOVA Chemicals, Inc. 04-00033, be issued.

**ATTACHMENT 1
Individual Source Groups for Major Source Group 101 (D3 EPS and D4 EPS Processes)
NOVA Chemicals - Beaver Valley Operation**

Major Source Group	Process	Source No.	Source Description	Source Sub Groups													
				101 ¹	105 ²	110 ³	115 ⁴	120 ⁵	125 ⁶	130 ⁷	135 ⁸						
101/301	D3 EPS/D3 Dylene	R-3307	D3 EPS Reactor 307 (10,000 gallon) (Swing)														
101/301	D3 EPS/D3 Dylene	R-3308	D3 EPS Reactor 308 (10,000 gallon) (Swing)	X	X	X											
101/301	D3 EPS/D3 Dylene	R-3309	D3 EPS Reactor 309 (10,000 gallon) (Swing)	X	X	X											
101/301	D3 EPS/D3 Dylene	R-3310	D3 EPS Reactor 310 (10,000 gallon) (Swing)	X	X	X											
101	D3 EPS	T-3472	D3 EPS #3 Hold Tank (50,000 gallon)	X	X	X											
101	D3 EPS	H-3480	D3 EPS Dryer #4	X	X	X											
101	D3 EPS	T-3353	D3 EPS Packaging Net Weigh Hopper	X	X	X											X
101	D3 EPS	C-3355	D3 EPS Packaging Net Weigher	X	X	X											X
101	D3 EPS	M-3672	D3 EPS Airveying Pneumatic Cyclone/Filter Receiver 1265	X	X	X											X
101	D3 EPS	M-3684	D3 EPS Airveying Pneumatic Cyclone/Filter Receiver 1260	X	X	X											X
101	D3 EPS	T-3574	D3 EPS Packaging Bin 1218	X	X	X											X
101	D3 EPS	T-3562	D3 EPS Packaging Bin 1208	X	X	X											X
101	D3 EPS	K-3467	D3 EPS #4 Acid Wash Kettle (12,000 gallon)	X	X	X											X
101	D3 EPS	K-3469	D3 EPS #3 Acid Wash Kettle (12,000 gallon)	X	X	X											X
101	D3 EPS	M-3477	D3 EPS No. 4 Bird Centrifuge	X	X	X											X
101	D3 EPS	T-3543	D3 EPS Slave Feeder Lube Hopper	X	X	X											X
101	D3 EPS	N/A	D3 EPS Sump	X													X

101	D3 EPS	T-3031	Hydrogen Chloride Tank	X				X	
101	D3 EPS	B-3945	D3 Hi-Vac System #1	X				X	
101	D3 EPS	N/A	D3 Hi-Vac System #2	X				X	
101	D3 EPS	N/A	D3 EPS Fugitive Equipment Leak Sources	X					
101	D4 EPS	M-4210/M-4235	D4 EPS Pneumatic Transfer Cyclones for 4B3 Airvey System	X					X
101	D4 EPS	M-4183/M-4187/M-4190	D4 EPS Pneumatic Transfer Cyclones for 4B4 Airvey System	X					X
101	D3 EPS/D4 EPS	T-4012	D3/D4 EPS Packaging Line Lube Mixer/Container (Fume Hood)	X					
101	D4 EPS	T-4101	D4 EPS Flame Retardant Mixing Tank	X					X
101	D4 EPS	T-4545	D4 EPS Phase I Pentane Metering Tank	X					X
101	D4 EPS	T-4547	D4 EPS Phase II Pentane Metering Tank	X			X		
101	D4 EPS	Sump	D4 EPS Sump Building Exhaust Fan	X			X		
101	D4 EPS	T-4220	D4 EPS Silo #41 for Reactor Bead Bin 4F1	X					X
101	D4 EPS	T-4221	D4 EPS Silo #42 for Reactor Bead Bin 4F1	X					X
101	D4 EPS	T-4004	D4 EPS Reactor Feed Bin 4F2	X					X
101	D4 EPS	T-4151	D4 EPS Silo #43 for Reactor Bead Bin 4F2	X					X
101	D4 EPS	T-4152	D4 EPS Silo #44 for Reactor Bead Bin 4F2	X					X
101	D4 EPS	T-4153	D4 EPS Silo #45 for Reactor Bead Bin 4F2	X					X
101	D4 EPS	T-4010	D4 EPS #1 Dryer Check Bin #1410	X				X	X
101	D4 EPS	T-4011	D4 EPS #1 Dryer Check Bin #1411	X				X	X
101	D4 EPS	T-4242	D4 EPS #2 Dryer Check Bin #1420	X				X	X
101	D4 EPS	T-4243	D4 EPS #2 Dryer Check Bin #1421	X				X	X
101	D4 EPS	T-4340	D4 EPS Line 1 Packaging Bin 1412	X				X	X
101	D4 EPS	T-4338	D4 EPS Line 1 Undersized Bin 1413	X				X	X
101	D4 EPS	T-4337	D4 EPS Line 1 Oversized Bin 1414	X				X	X
101	D4 EPS	T-4281	D4 EPS Line 2 Packaging Bin 1422	X				X	X
101	D4 EPS	T-4291	D4 EPS Line 2 Undersized Bin 1423	X				X	X
101	D4 EPS	T-4285	D4 EPS Line 2 Oversized Bin 1424	X				X	X
101	D4 EPS	U-4581	D4 Cooling Tower	X					X
101	D4 EPS	M-4005	D4 EPS Pneumatic Transfer Cyclone for 4B10	X			X	X	X

			Airvey System									
101	D4 EPS	M-4251	D4 EPS Pneumatic Transfer Cyclone for 4B11									
101	D4 EPS	M-4005/M-4251	Airvey System			X	X					X
101	D4 EPS	T-4381	D4 EPS 4B10 and 4B11 System Backup			X						X
101	D4 EPS	T-4315	D4 EPS "A" Packaging Line Net Weigher Hopper			X	X					X
101	D4 EPS	K-4275	D4 EPS "B" Packaging Line Net Weigher Hopper			X	X					X
101	D4 EPS	K-4276	D4 EPS #1 Acid Wash Kettle			X	X					X
101	D4 EPS	K-4201	D4 EPS #2 Acid Wash Kettle			X	X					X
101	D4 EPS	K-4202	D4 EPS #3 Acid Wash Kettle			X	X					X
101	D4 EPS	R-4001	D4 EPS #4 Acid Wash Kettle			X	X					X
101	D4 EPS	R-4002	D4 EPS Reactor #401			X	X					X
101	D4 EPS	M-4290	D4 EPS Reactor #402			X	X					X
101	D4 EPS		D4 EPS #1 Bird Centrifuge ("C" product dewatering)			X	X					X
101	D4 EPS	H-4300	D4 EPS #1 Gala Dryer ("A" & "B" products dewatering)			X	X					X
101	D4 EPS	H-4301	D4 EPS #1 Fluidized Dryer			X	X					X
101	D4 EPS	H-4223	D4 EPS #2 Gala Dryer			X	X					X
101	D4 EPS	H-4225	D4 EPS #2 Fluidized Dryer			X	X					X
101	D4 EPS	T-4353	D4 EPS A Line 1 Feeder			X	X					X
101	D4 EPS	T-4353	D4 EPS B Line 2 Feeder			X	X					X
101	D4 EPS	T-1300	D4 EPS Mixed Pentane Tank			X	X				X	X
101	D4 EPS	T-3323	D4 EPS Cyclopentane Tank			X	X				X	X
101	D4 EPS	T-3375	D4 EPS Isopentane Tank			X	X				X	X
101	D4 EPS	N/A	D4 EPS Hi-Vac System			X	X					X
101	D3 EPS	N/A	D4 EPS Fugitive Equipment Leak Sources			X	X					X
101	D3 EPS	T-4380	D4 EPS Polyethylene Glycol Storage Tank			X	X					X

¹Source Sub Group 101: D3 EPS and D4 EPS process equipment.

²Source Sub Group 105: D3 EPS and D4 EPS RACT affected equipment subject to the RACT operating permit 04-000-033.

³Source Sub Group 110: D3 EPS and D4 EPS process equipment controlled by the Pentane Emissions Reduction System (PERS).

⁴Source Sub Group 115: D4 EPS storage tanks subject to PaDEP storage tank provisions under Chapter 129.57.

⁵Source Sub Group 120: D3 EPS central vacuum system subject to PaDEP operating permit 04-313-074.

⁶Source Sub Group 125: D4 EPS cooling tower subject to the cooling tower MACT under 40 CFR 63, Subpart Q.

⁷Source Sub Group 130: D3 EPS and D4 EPS emissions sources that potentially emit particulate matter.

⁸Source Sub Group 135: Uncaptured D3 EPS and D4 EPS VOC emissions sources covered by the D3/D4 EPS PERS operating permit.

ATTACHMENT 2
Individual Source Groups for Major Source Group 201 (D2 Processes)
NOVA Chemicals - Beaver Valley Operation

Major Source Group	Process	Source No.	Source Description	Source Sub Groups														
				201 ¹	205 ²	210 ³	215 ⁴	220 ⁵	225 ⁶	230 ⁷	231 ⁸							
201	Interpolymer	T-2036	Interpolymer Catalyst Mix Tank	X	X													
201	Interpolymer	T-2033	Interpolymer Styrene Weigh Tank	X	X													
201	Interpolymer	R-2202	Interpolymer Reactor 202	X	X													
201	Interpolymer	K-2210	Interpolymer Acid Wash Kettle 210	X	X													
201	Interpolymer	H-2042	Interpolymer Gala Dryer (PES)	X	X													
201	Interpolymer	T-2726	Interpolymer Bead Storage Silo #1	X														
201	Arcel	T-2530	Arcel Isopentane Storage Tank	X	X													
201	Arcel	T-2441	Arcel Reactor Beads Feed Bin 441	X														
201	Arcel	R-2199	Arcel Reactor 1 (201)	X	X													
201	Arcel	R-2202	Arcel Reactor 2 (199)															
201	Arcel	H-2022	Arcel Carter Day Dryer	X	X													
201	Arcel	T-2015	Arcel Carter Day Dryer Maxi Surge Bin	X														
201	Arcel	T-2781	Package Bin Exhaust															
201	Arcel	M-2007	Arcel White Arcel 330 Airvey East Cyclone	X	X													
201	Arcel	M-2021	Arcel 380 Airvey System Pneumatic Cyclone	X	X													
201	D2 PES	T-2529	D2 PES n-Pentane Storage Tank	X	X													
201	D2 PES	R-2204	D2 PES Reactor 204	X	X													
201	D2 PES	K-2211	D2 PES Acid Wash Kettle 211	X	X													
201	D2 PES	M-2351	D2 PES 370 Airvey System Pneumatic Cyclone	X	X													
201	D2 PES	H-2252	D2 PES GATX Dryer (Dewatering - Fluid Bed)	X	X													

201	D2 PES	T-2706	D2 PES Packaging Bin	X	X	X	X
201	D2-ARCEL	R-2200	Pressurized wash kettle R2200 ARCEL	X	X		
201	All	N/A	D2 Fugitive Equipment Leak Sources	X			
201	ARCEL	?	ARCEL Cooling Tower				X

- ¹Source Sub Group 201: D2 PES, Arcel process equipment.
- ²Source Sub Group 205: D2 PES, Arcel, EPS, and Liquid Lube RACT affected equipment subject to the RACT operating permit 04-000-033.
- ⁴Source Sub Group 215: D2-storage tanks subject to PaDEP storage tank provisions under Chapter 129.57.
- ⁵Source Sub Group 220: D2 emissions sources subject to recordkeeping provisions under MON IMACT
- ⁶Source Sub Group 225: D2 EPS emissions sources that potentially emit particulate matter.
- ⁷Source Sub Group 230: D2 ARCEL sources that are controlled by CATOX.
- ⁸Source Sub Group 231: D2 ARCEL cooling tower.

ATTACHMENT 3
Individual Source Groups for Major Source Group 301 (D3 Dylene Process)
NOVA Chemicals - Beaver Valley Operation

Major Source Group	Process	Source No.	Source Description	Source Sub Groups																	
				301 ¹	305 ²	310 ³	315 ⁴	320 ⁵	325 ⁶	330 ⁷	335 ⁸										
301	D3 Dylene	T-3005	Dylene Bulk Lime Storage Silo	X																	
301	D3 Dylene	T-3010	Dylene Bulk Lime Weigh Hopper	X																	X
301	D3 Dylene	T-3393	Dylene West Styrene Tank	X																	X
301	D3 Dylene	M-4061	D4 EPS Pneumatic Transfer Cyclone for 4B1 Airvey	X																	X
301	D3 Dylene	M-4062	D4 EPS Pneumatic Transfer Cyclone for 4B2 Airvey	X																	X
301	D3 Dylene	R-3301	Dylene Reactor 301 (15,000 gallons)	X	X	X	X														
301	D3 Dylene	R-3302	Dylene Reactor 302 (15,000 gallons)	X	X	X	X														
301	D3 Dylene	R-3303	Dylene Reactor 303 (15,000 gallons)	X	X	X	X														
301	D3 Dylene	R-3304	Dylene Reactor 304 (15,000 gallons)	X	X	X	X														
301	D3 Dylene	R-3305	Dylene Reactor 305 (15,000 gallons)	X	X	X	X														
301	D3 Dylene	R-3306	Dylene Reactor 306 (15,000 gallons)	X	X	X	X														
101/301	D3 EPS/D3 Dylene	R-3307	Dylene Reactor 307 (10,000 gallon) (Swing)	X	X	X	X														
101/301	D3 EPS/D3 Dylene	R-3308	Dylene Reactor 308 (10,000 gallon) (Swing)	X	X	X	X														
101/301	D3 EPS/D3 Dylene	R-3309	Dylene Reactor 309 (10,000 gallon) (Swing)	X	X	X	X														
101/301	D3 EPS/D3 Dylene	R-3310	Dylene Reactor 310 (10,000 gallon) (Swing)	X	X	X	X														
301	D3 Dylene	R-3311	Dylene Reactor 311 (15,000 gallons)	X	X	X	X														

301	D3 Dylene	R-3312	Dylene Reactor 312 (15,000 gallons)	X	X	X	X		
301	D3 Dylene	T-3433	Dylene #2 Processing String - #1 Hold Tank	X					
301	D3 Dylene	T-3415	Dylene #1 Processing String - #1 Slurry Kettle	X					
301	D3 Dylene	H-3407	Dylene #1 Processing String - #1 Fluidized Bed Dryer	X					X
301	D3 Dylene	T-3417	Dylene #1 Processing String - #2 Slurry Kettle	X					
301	D3 Dylene	H-3440	Dylene #2 Processing String - #2 Fluidized Bed Dryer	X					X
301	D3 Dylene	H-3458	Dylene #3 Processing String - #3 Fluidized Bed Dryer	X					X
301	D3 Dylene	T-3499	Dylene #5 Processing String - #4 Hold Tank	X					
301	D3 Dylene	F-3502	Dylene 504 Airvey System Filter Receiver	X					X
301	D3 Dylene	M-3519	Dylene 720 Airvey System Pneumatic Cyclone	X					X
301	D3 Dylene	M-3582	Dylene 720 Airvey System Railcar Filter Receiver	X					
301	D3 Dylene	M-3538	Dylene 270 Airvey System Pneumatic Cyclone	X					X
301	D3 Dylene	T-3540	Dylene 270 Airvey System F1 Bin	X					X
301	D3 Dylene	T-3993	Dylene 270 Airvey System F2 Bin	X					X
301	D3 Dylene	M-3577	Dylene Truck Loading Pneumatic Cyclone	X					X
301	D3 Dylene	M-3605	Dylene Screening Lines A/B Airvey System Cyclone A	X					X
301	D3 Dylene	M-3611	Dylene Screening Lines A/B Airvey System Cyclone B	X					X
301	D3 Dylene	M-3620	Dylene Screening Lines C/D Airvey System Cyclone C	X					X
301	D3 Dylene	M-3617	Dylene Screening Lines C/D Airvey System Cyclone D	X					X
301	D3 Dylene	M-3582	Dylene Railcar Loader	X					X
301	D3 Dylene	T-3380	Dylene Phosphoric Acid Tank	X					
301	D3 Dylene	M-3530	Dylene Airvey 280 System	X					X
301	D3 Dylene	M-3534/M- 3535	Dylene Airvey 503 System	X					
301	D3 Dylene	U-3169	D3 Cooling Tower	X					X

301	D3 Dylene	M-3588	Dylene B2 Airvey System					X									X
301	D3 Dylene	M-3585	Dylene B3 Airvey System					X									X
301	D3 Dylene	T-3600	Dylene Bin 1200					X									X
301	D3 Dylene	T-3595	Dylene Bin 1201					X									X
301	D3 Dylene	T-3662	Dylene Bin 1216					X									X
301	D3 Dylene	T-3663	Dylene Bin 1213					X									X
301	D3 Dylene	T-3665	Dylene Bin 1215					X									X
301	D3 Dylene	T-3666	Dylene Bin 1205					X									X
301	D3 Dylene	T-3667	Dylene Bin 1204					X									X
301	D3 Dylene	T-3668	Dylene Bin 1203					X									X
301	D3 Dylene	T-3669	Dylene Bin 1206					X									X
301	D3 Dylene	R-3313	TCP Tank Reactor 3313					X									X
301	D3 Dylene	M-3583	Dylene B3 Airvey System Pneumatic Cyclone B3					X									X
301	D3 Dylene	M-3594	Dylene B3/B4 Airvey System Pneumatic Cyclone B4					X									X
301	D3 Dylene	N/A	Dylene HAP Fugitive Equipment Leak Sources					X					X				
301	D3 Dylene	N/A	Dylene General Fugitive Equipment Leak Sources					X									
301	D3 Dylene	T-3398	East Reactor Day Tank					X							X		
301	D3 Dylene		West Reactor Day Tank					X									

¹Source Sub Group 301: D3 Dylene process equipment.

²Source Sub Group 305: D3 Dylene process equipment subject to the VOC RACT provisions.

³Source Sub Group 310: D3 Dylene subject to specific provisions under 40 CFR 63, Subpart JJJ (P&R IV MACT) and General Provisions.

⁴Source Sub Group 315: D3 Dylene Styrene Emissions Recovery System (SERS) subject to Plan Approval 04-313-066.

⁵Source Sub Group 320: D3 Dylene equipment subject to the leak detection and repair provisions under 40 CFR 63, Subpart JJJ (P&R IV MACT) and General Provisions.

⁶Source Sub Group 325: D3 Dylene equipment subject to the leak detection and repair program under PaDEP Chapter 129.71.

⁷Source Sub Group 330: D3 Dylene cooling tower subject to the cooling tower MACT under 40 CFR 63, Subpart Q.

⁸Source Sub Group 335: D3 Dylene emissions sources that potentially emit particulate matter.

ATTACHMENT 4
Individual Source Groups for Major Source Group 601 (D3 Extrusion Lines 1, 3, 4, and Sheet Plant)
NOVA Chemicals - Beaver Valley Operation

Major Source Group	Process	Source No.	Source Description	Source Sub Groups		
				601 ¹	605 ²	610 ³
601	D3 Extrusion	T-3871	D3 Extrusion Resin Feed Bin 513 Vent (T-3871)	X		X
601	D3 Extrusion	T-3911	D3 Extrusion Resin Feed Bin 514 Vent (T-3911)	X		X
601	D3 Extrusion	T-3913	D3 Extrusion Resin Feed Bin 515 Vent (T-3913)	X		X
601	D3 Dylene	T-3862	D3 Dylene Refeed Bin 522 Vent (T-3862)	X		X
601	D3 Dylene	T-3865	D3 Dylene Refeed Bin 523 Vent (T-3865)	X		X
601	D3 Extrusion	M-3770	D3 Extrusion 501 Cyclone for the Pneumatic Conveying System	X		X
601	D3 Extrusion	A-3883	D3 Extrusion Line 3 Mixer Feed Chute	X	X	
601	D3 Extrusion	A-3883	D3 Extrusion Line 3 Mixer Feed Chute Collection Hood	X	X	
601	D3 Extrusion	Multiple Indoor Points	D3 Extrusion, Packaging, and Blending Miscellaneous Equipment	X		X
601	D3 Extrusion	Scrap Dumpsters	D3 Extrusion Mixer Diverter Scrap Dumpsters	X	X	
601	D3 Extrusion	H-3894/S3893	D3 Extrusion Line 3 Carter Day Dry (AK-7819 / Line 3 Screener	X		X

¹Source Sub Group 601: D3 Extrusion Lines 1, 3, 4 and Sheet Plant process equipment.

²Source Sub Group 605: D3 Extrusion Lines 1, 3, 4, and Sheet Plant affected equipment subject to the RACT operating permit 04-000-033

³Source Sub Group 610: D3 Extrusion Lines 1, 3, 4, and Sheet Plant emissions sources that potentially emit particulate matter.

ATTACHMENT 5
Individual Source Groups for Major Source Group 701 (Field Storage)
NOVA Chemicals - Beaver Valley Operation

Major Source Group	Process	SOURCE #	SOURCE DESCRIPTION	Source Sub Groups			
				701 ¹	705 ²	710 ³	715 ⁴
701	Field Storage	T-0065	N-Pentane Storage Sphere	X			
701	Field Storage	Barge	Styrene Barge Unloading	X		X	
701	Field Storage	T-0055	Styrene Field Tank 6	X	X		
701	Field Storage	T-0045	Styrene Field Tank 7	X	X		
701	Field Storage	T-0035	Styrene Field Tank 8	X	X		
701	Field Storage	T-0025	Styrene Field Tank 9	X	X		
701	Field Storage	Trucks	Styrene Truck Loading	X			
701	Field Storage	N/A	Field Storage Fugitive Equipment Leak Sources	X			X

¹Source Sub Group 701: Field storage equipment.

²Source Sub Group 705: Affected field storage equipment subject to the RACT operating permit 04-000-033.

³Source Sub Group 710: Field storage n-pentane sphere subject to PaDEP large storage tanks requirements under Chapter 129.56.

⁴Source Sub Group 715: Field storage equipment subject to the leak detection and repair program under 40 CFR 63, Subpart JJJ (P&R IV MACT) and General Provisions, as well as the leak detection and repair program under PaDEP Chapter 129.71.

ATTACHMENT 6
Individual Source Groups for Major Source Group 801 (General Plant)
NOVA Chemicals - Beaver Valley Operation

Major Source Group	Process	SOURCE #	SOURCE DESCRIPTION	Source Sub Groups			
				801 ¹	805 ²	810 ³	815 ⁴
801	General Plant	North basin	North basin	X			
801	General Plant	Aeration lagoon	Aeration lagoon	X			
801	General Plant	Quiescent lagoon	Quiescent lagoon	X			
801	General Plant	Waste pad	Waste Storage Pad	X			
801	General Plant	Road dust	Fugitive Road Dust Emissions	X			
801	General Plant	Paint booth	Maintenance Shop Spray Paint Hood	X			
801	General Plant	Storeroom Furnace	Storeroom Furnace	X	X		
801	General Plant	Technology Bldg. Furnace	Technology Bldg. Furnace	X			
801	General Plant	Dylark Office Bldg. Furnace	Dylark Office Bldg. Furnace	X			
801	General Plant	Engr & maint. Bldg Furnace	Engr & maint. Bldg Furnace	X			
801	General Plant	Pilot Plant and Lab. Bldg. Furnace	Pilot Plant and Lab. Bldg. Furnace	X			
801	General Plant	IGG-52	Maintenance Burn Oven (Small) model IGG-52	X	X		X
801	General Plant	IGG-1000	Maintenance Burn Oven (Large) model IGG-1000	X	X	X	
801	General Plant	T-6011	Gasoline Storage Tank - 1000 gals	X	X		
801	General Plant	T-6010	Diesel Storage Tank -250 gals	X	X		
801	General Plant	T-6102	Filter Plant HCl Tank	X	X		
801	General Plant	T-0103	Lime Storage Silo and Slaker	X	X		
801	General Plant	Site Painting	Fugitive Painting Emissions	X			
801	General Plant	M-6011	Gasoline Emergency Generator - Gatehouse	X			
801	General Plant	M-6010	Diesel Emergency Generator - Medical Bldg	X			
801	General Plant	Multiple	Process Refrigeration Systems	X			

¹Source Sub Group 801: General plant process equipment.

²Source Sub Group 805: Affected general plant equipment subject to the RACT operating permit 04-000-033.

³Source Sub Group 810: General plant large burn oven subject to Operating Permit 04-313-041, and subject to PaDEP Chapters §123.12 and §123.21(b).

⁴Source Sub Group 815: General plant small maintenance burn oven subject to PaDEP Chapters §123.12 and §123.21(b).