# WASHINGTON STATE DEPARTMENT OF ECOLOGY
# POST OFFICE BOX 47600
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|---|---|---|
| **IN THE MATTER OF:** | ] | |
| | ] | |
| **Agrium U.S., Inc.** | ] | **NO. PSD-04-01** |
| **Kennewick Fertilizer Operations** | ] | **FINAL APPROVAL** |
| **227515 E. Bowles Road** | ] | **OF PSD APPLICATION** |
| **P.O. Box 5797** | ] | |
| **Kennewick, WA 99337** | ] | |

Pursuant to the United States Environmental Protection Agency (EPA) regulations for the Prevention of Significant Deterioration (PSD) set forth in Title 40, Code of Federal Regulations, Part 52 (March 10, 2003) and regulations set forth in the Washington Administrative Code 173-400-141 (January 27, 2003) and based upon the complete Prevention of Significant Deterioration (PSD) Permit Application submitted by Agrium U.S. Inc. (Agrium) on April 27, 2004 and the technical analysis performed by the Department of Ecology (Ecology), Ecology now finds the following:

**FINDINGS:**

1. Agrium U.S., Inc. (Agrium) operates a nitrogen-based fertilizer manufacturing facility, the Kennewick Fertilizer Operations (KFO). KFO manufactures nitric acid in Plants 7 and 9. The nitric acid is used, in part, to manufacture nitrate-based liquid and granular fertilizer in Plants 8 and 10.

2. Agrium proposes to install emission controls in KFO as a result of voluntary disclosures to EPA by Agrium and the Union Oil Company of California (February 1, 2001) and to satisfy its obligations as expressed in a United States Environmental Protection Agency (EPA) compliance order (EPA Docket No. CAA-10-2003-0108, September 24, 2003). The voluntary disclosures acknowledged modifications at KFO between the years 1984 and 2000 that may have required, but were not subjected to major new source review. This permit consolidates allowable emissions levels resulting from those projects.

3. Agrium submitted a Prevention of Significant Deterioration (PSD) Permit Application on April 27, 2004. On May 26, 2004, Ecology determined Agrium's permit application to be complete.

4. KFO occupies three non-contiguous areas, about 6.5 kilometers (km) southeast of the Richland-Kennewick-Pasco area, each west of and adjacent to the Columbia River:

   4.1 The Hedges Area is 2.4 km north-northeast of the community of Finley, Washington.

   UTM Easting: 343420
   Northing: 5115160
   Longitude: -119.0285
   Latitude: 46.1732

   4.2 The Kennewick Area is about 1.6 km southeast of the Hedges Area.

UTM Easting: 344250
Northing: 5114300
Longitude: -119.0227
Latitude: 46.1678

4.3 The Finley Area is about one km southeast of the Kennewick Area, and about 1.8 km northeast of Finley, Washington.

UTM Easting: 344900
Northing: 5113100
Longitude: -119.011
Latitude: 46.1551

5. KFO is located within the Wallula $PM_{10}$ (particulate matter less than 10 microns in aerodynamic diameter) nonattainment area. This is a Class II area that straddles the Columbia River from just west of Hedges and Finley to just east of Reese and just north of Burbank and Humorist to an east-west line between Wallula Junction and Port Kelley. The area is currently designated in attainment or unclassified for all other national and state air quality standards (NAAQS).

6. KFO is about 133 km from the nearest Class I Area, Eagle Cap Wilderness in northeast Oregon. Five other Class I Areas are between 150 km and 200 km from KFO: Alpine Lakes, Hells Canyon, Goat Rocks, Mount Adams, and Mount Rainier. The site is about 135 km from a Class II park and wilderness area, the Columbia River Gorge National Scenic Area.

7. KFO is about 25 km north of the Washington-Oregon border, about 175 km from the Washington-Idaho border, and 55 km from the Yakama Tribal Nation.

8. KFO is more than 100 km from the U.S. - Canadian border, and is not subject to the United States - Canada or State of Washington - Canada agreements of 1991 and 1992/94, respectively.

9. Elements of this project subject to this permit consist of:

   9.1 Installing extended nitrogen oxide ($NO_X$) emission controls on existing nitric acid ($HNO_3$) Plants 7 and 9 and

   9.2 Approval conditions for continued operation of the $NO_X$ and particulate matter (PM) control systems on nitrate fertilizer Plants 8 and 10, respectively.

10. KFO's Plant 9 is subject to New Source Performance Standards (NSPS) CFR 40 Part 60 Subpart G, (Standards of Performance for Nitric Acid Plants) which sets maximum allowable $NO_X$ emissions at 3.0 pounds per ton of HNO3 produced (lb $NO_X/T_{acid}$). Agrium is not required to demonstrate initial performance capability for this limit because Plant 9 has been demonstrating operation below this emission level since 1978. In this permit, Plant 9 will be limited to not greater than 0.3 lb $NO_X/T_{acid}$ after completion of the trial period for the hydrogen peroxide ($H_2O_2$) Innovative $NO_X$ Control Technology or upon termination of the innovative technology trial period, after allowance for reasonable time to install an alternate BACT-equivalent.

11. The emissions of all air pollutants from the proposed modification are subject to review under Chapter 173-400 WAC (1/27/03), Chapter 173-460 WAC (7/21/98), and the regulations of the Benton Clean Air Authority (BCAA, 114 Columbia Point Dr. Suite C, Richland, WA 99352). Chapter 173-400 WAC includes provision for PSD review (WAC 173-400-141). This permit considers only PSD issues. BCAA is responsible for all other air quality related notice of construction approval issues.

12. KFO has the potential to emit more than 100 tons per year (TPY) each of $NO_X$ and PM. Both are pollutants that are subject to the federal Clean Air Act. As an $HNO_3$ plant, KFO qualifies as a major stationary source as defined in federal regulations CFR 40 Part 52.21(b)(1)(i)(*a*).

13. As a result of these projects, KFO's net increases in pollutant emissions subject to PSD review are:

| **KFO Net Emissions Increases from Consolidated Projects** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Emissions unit** | **Pre-construction** | | **Post-construction** | | | **Post-permit** | |
| | **Actual emissions, tons per year (TPY)** | **Basis period** | **Actual emissions, TPY** | **Basis period** | **Actual net emissions increase, TPY** | **Potential to emit (PTE), TPY** | **Net emissions increase, TPY** |
| Plant 7 $NO_X$ | 653.5 | 91/92 | 937, immediate post-construction | 94/95 | 283.5 | 26.7 | -626.8 |
| | | | 1,121, maximum post-construction | 94/95 | 467.5 | | |
| Plant 8 $NO_X$ | 0 | 90/91 | 16.5, immediate post-construction | 93/94 | 16.5 | 5 | 5 |
| | | | 18.4, maximum post-construction | 96/97 | 18.4 | | |

| KFO Net Emissions Increases from Consolidated Projects | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Emissions unit** | **Pre-construction** | | **Post-construction** | | | **Post-permit** | |
| | **Actual emissions, tons per year (TPY)** | **Basis period** | **Actual emissions, TPY** | **Basis period** | **Actual net emissions increase, TPY** | **Potential to emit (PTE), TPY** | **Net emissions increase, TPY** |
| Plant 9 $NO_X$ | 94 | 82/83 | 136, immediate post-construction | 84/85 | 42 | 46.6 | -47.4 |
| | | | 290.5, maximum post-construction | 98/99 | 196.5 | | |
| Plant 10 $PM_{10}$ | 7.1 | 94/95 | 10.4, PTE of modification | Pre-permit PTE | 3.3 | 9.2 | 2.1 |
| Plant 10 PM | 77 | 94/95 | 87.1, immediate post-construction | 96/97 | 10.1 | 99.7 | 22.7 |
| | | | 89.7, maximum post-construction, pre-permit | 97/98 | 12.7 | | |
| | | | 113.2, PTE of modification | Pre-permit PTE | 36.2 | | |
| Total consolidated projects | Immediate post-construction net emissions increase, TPY | | | 342 $NO_X$ | | Post-permit | -669.2 $NO_X$ |
| | | | | 10.1 PM | | | |
| | Maximum post-construction net emissions increase, TPY | | | 682.4 $NO_X$ | | | 22.7 PM |
| | | | | 12.7 PM | | | |

13.1 Pursuant to Conditions 14 and 15 of EPA compliance order No. CAA-10-2003-0108, Plant 2 and the Finley Area reformers F-100 A & B and Boiler F-600 A & B have been shut down and will no longer be operated. The net effect is an additional reduction in $NO_X$ emissions of 503 TPY relative to the total plant pre-permit emissions.

13.2 The significant emission rate (SER) for $NO_X$ is 40 TPY.

13.3 The SER for PM is 25 TPY.

13.4 The SER for $PM_{10}$ is 15 TPY.

14. Because KFO is a major stationary source, had actual net emissions increases for $NO_X$ in excess of the PSD-SER, and is located in an area that is in attainment/unclassified for the NAAQS for $NO_X$, the consolidated projects for Plants 7, 8 and 9 qualify as major modifications under federal regulations [CFR 40 Part 52.21(b)(2)(i), CFR 40 Part 52.21(b)(3)(i)(*a*) and CFR 40 Part 52.21(b)(23)(i)]. As a result, the consolidated projects for Plants 7, 8 and 9 are subject to major new source review.

15. At the time of the relevant modification to Plant 10, but prior to beginning actual construction, the projected net emissions increase as determined from the post-construction PTE and base line pre-construction emissions was 36.2 TPY PM. Because this is in excess of the PSD-SER, and KFO is a major stationary source and is located in an area that is in attainment/unclassified for the NAAQS for PM, the modification to Plant 10 would have been a major modification for the PM emissions increase under federal regulations prior to actual construction [CFR 40 Part 52.21(b)(2)(i), CFR 40 Part 52.21(b)(3)(i)(*a*) and CFR 40 Part 52.21(b)(23)(i)]. However, Plant 10 never operated at a sufficiently high rate to actually generate PM emissions such that the actual net emissions increase exceeded the PSD-SER. Plant 10 future emissions will be limited by terms in this permit such that the net emissions increase will not exceed the PSD-SER. Under USEPA guidance ("Guidance on the Appropriate Injunctive Relief for Violation of Major New Source Review Requirements," Eric Schaeffer, November 17, 1998), as a result, the modification to Plant 10 may be relieved from major new source review provided emission controls are installed equivalent to Best Available Control Technology (BACT).

16. Plant 10 can not trigger major new source review under this PSD permit for $PM_{10}$ because KFO is located in a $PM_{10}$ nonattainment area. If Plant 10's projected net emissions increase as determined from the post-construction PTE and base line pre-construction emissions exceeded the $PM_{10}$-SER, Plant 10 would be subject to major modification, nonattainment area permitting provisions under BCAA authority. However, Plant 10's projected net emissions increase as determined from the post-construction PTE and base line pre-construction emissions did not exceed the $PM_{10}$-SER. Consequently, Plant 10's $PM_{10}$ emission increase is not subject to nonattainment major new source review.

17. Other than $NO_X$ and PM, there are no net emissions increases of pollutants from KFO that are subject to regulation under the federal Clean Air Act.

18. BACT analysis determined that the following technologies are capable of consistently controlling emissions from Agrium's proposed project below the limits required in this permit:

    18.1 For $NO_X$ emissions:

        18.1.1 Plant 7: Selective Catalytic Reduction (SCR) can control $NO_X$ emissions to less than 0.524 lb $NO_X/T_{acid}$ averaged over all operating hours in any continuous twelve month period. This is exclusive of uncontrolled startup and shutdown periods.

        18.1.2 Plant 8: Limiting the source of $HNO_3$ to Plant 9, proper operation of the existing venturi scrubber, and injection of urea during CAN-17 production can control $NO_X$ emissions to less than 1.1 pounds $NO_X$ per ton CAN-17 (lb $NO_X/T_{CAN-17}$).

18.1.3 Plant 9: SCR can control $NO_X$ emissions to less than 0.3 lb $NO_X/T_{acid}$ averaged over all operating hours in any continuous twelve month period. This is exclusive of uncontrolled startup and shutdown periods.

18.2 For Plant 10 PM emissions: Proper operation of the existing granulator scrubber and integral mist eliminator can control PM emissions from the ammonium nitrate granulator to less than 0.011 grains per dry standard cubic foot. There was no modification to the fluid bed cooler, and it is not subject to BACT determination under this permit. Nonetheless, Agrium proposes using hardening agent in the ammonium nitrate to minimize fines carryover in the fluid bed cooler to less than 0.085 grains per dry standard cubic foot. Agrium demonstrated capability to operate under these emission limits prior to submittal of the application for this PSD permit. Consequently, no initial performance demonstration is required in this permit.

18.3 Innovative Technology: Under the provisions of CFR 40 Part 52.21(v), Ecology approved deferral of the $NO_X$ emissions limits on Plants 9.

18.3.1 This deferral is intended to allow Agrium to develop an alternative $NO_X$ reduction technology for $HNO_3$ production. The proposed innovative technology will use $H_2O_2$ injection to the absorption column in the $HNO_3$ process.

18.3.2 If Agrium is unable to demonstrate consistent ability of this process to comply by the fourth consecutive twelve month period after the final and effective date of this permit with $NO_X$ emission limits determined as BACT, Agrium will have not more than eighteen months to install a BACT-level control system while continuing $NO_X$ emissions control at the best demonstrated level. At any time that Ecology determines that the proposed innovative technology is unlikely to meet BACT, Ecology may immediately withdraw this deferral, and require that Agrium install a BACT-level control system in not more than eighteen months.

18.3.3 Specific interim $NO_X$ emissions benchmarks during development of the proposed innovative technology are included in this permit.

19. Allowable emissions will not cause or contribute to air pollution in violation of:

19.1 Any NAAQS;

19.2 NAAQS and PSD increment consumption:

| Pollutant | Modeling Results, micrograms per cubic meter ($\mu grams/m^3$) | | Modeling Significance Level $\mu grams/m^3$ | | Class I area Allowable Increment Consumption $\mu grams/m^3$ | Class II area Allowable Increment Consumption $\mu grams/m^3$ | Monitoring Requirement Threshold $\mu grams/m^3$ | NAAQS $\mu grams/m^3$ |
|---|---|---|---|---|---|---|---|---|
| | Class I area | Class II area | Class I area | Class II area | | | | |
| $NO_2$, annual average, $NO_2/NOx$ = 0.75 | < 0 | | 0.1 | | 2.5 | | | |
| | | 0.425 BACT<br>0.57 Max during $H_2O_2$ dev'mt | | 1.0 | | 25 | 14 | 100 |
| $PM_{,}$ 24 hour average | Not required. Post-permit net emissions increase is below significant emissions rate. | | 0.3 | 5 | 10 | 37 | 10 | 50 |
| $PM_{,}$ annual average | | | 0.2 | 1 | 5 | 19 | None | 150 |

20. Allowable emissions will not cause a significant visibility impact in

    20.1 The surrounding Class I areas.

    20.2 Nearby Class II wilderness and scenic areas.

21. Ambient impact analysis indicates that there will be no significant pollutant deposition on soils and vegetation in the Class I or Class II areas.

    21.1 Modeled emissions ambient impact levels are substantially below all secondary NAAQS (primary and secondary NAAQS for $NO_X$ are the same). This indicates a low likelihood of negative impact on Class II area flora and fauna. No sensitive species have been identified.

    21.2 The modeled deposition of nitrogen from the consolidated project in the surrounding Class I areas is negative.

22. No significant effect on industrial, commercial, or residential growth in the Kennewick, Washington area is anticipated as a result of this project.

23. Ecology finds that all requirements for PSD have been satisfied. Approval of the PSD application is granted subject to the following conditions.

## APPROVAL CONDITIONS:

1. $NO_X$ emissions from Plant 7:
   - 1.1 Shall not exceed 0.524 lb $NO_X/T_{acid}$ averaged over all operating hours exclusive of startup and shutdown in any continuous twelve month period.
   - 1.2 Shall not exceed 140 pounds on any calendar day (lb/cal-day) exclusive of startup and shutdown from 0:00 hours, November 1st through 24:00 hours April 30th in any calendar year.
   - 1.3 Shall not exceed 190 lb/cal-day exclusive of startup and shutdown from 0:00 hours, May 1st through 24:00 hours October 31st in any calendar year.
   - 1.4 Shall not exceed 27 tons in any consecutive twelve month period including startup and shutdown periods.
   - 1.5 Startup shall begin with gauze light-off:
     - 1.5.1 Process flow may bypass the expander, $NO_X$ control, and continuous emissions monitoring system (CEMS),
       - 1.5.1.1 For not more than two hours.
       - 1.5.1.2 $NO_X$ emissions shall be prorated for determination of annual $NO_X$ emissions at a rate of 314 lb $NO_X$/hr during this bypass period.
     - 1.5.2 Ammonia ($NH_3$) feed to the $NO_X$ control system shall begin not later than when the $NO_X$ control system reaches an operating temperature of 350 $^oF$.
     - 1.5.3 Startup shall be complete not later than two hours after initiating ammonia feed to the $NO_X$ control system.
   - 1.6 Shutdown:
     - 1.6.1 Shall begin with cessation of $NH_3$ feed to the $NH_3$ oxidizer.
     - 1.6.2 Shall end when the process compressors are turned off.
   - 1.7 Compliance determination, demonstration, and monitoring:
     - 1.7.1 Compliance for Conditions 1.1, 1.1, 1.3, and 1.4 shall be determined in accordance with CFR 40 Part 60.74 (Test methods and procedures).
     - 1.7.2 Initial performance test:
       - 1.7.2.1 Within 60 days of achieving the maximum $HNO_3$ production rate after beginning operation with $NO_X$ emissions controls equivalent to BACT, but not later than 180 days after initial startup of $NO_X$ emissions controls equivalent to BACT, Agrium will conduct a performance test for Condition 1.1 or 1.3 (depending on the coincident time of the year).
       - 1.7.2.2 During the initial performance test, Plant 7 shall run at not less than 90% of the acid-production capacity.
       - 1.7.2.3 Agrium will submit a test plan to Ecology and BCAA for approval at least 30-days prior to initial performance testing. If the conditions of this

PSD permit have been incorporated in KFO's Title V permit (173-401 WAC), submittal to BCAA alone will satisfy this condition.

1.7.3 Compliance monitoring for Conditions 1.1, 1.1, 1.3, and 1.4 shall begin at the time of initial operation of $NO_X$ emissions controls equivalent to BACT.

1.7.3.1 Continuous compliance will be monitored by a continuous emissions monitoring system (CEMS) that measures and records $NO_X$ emissions from Plant 7's tail gas stack on not less than an hourly average basis.

1.7.3.2 The CEMS will meet the requirements of Condition 5.

2. $NO_X$ emissions from Plant 8:

2.1 Shall not exceed 1.1 lb $NO_X/T_{CAN-17}$ on a calendar day average basis.

2.2 Only $HNO_3$ from Plant 9 shall be used.

2.3 Urea [chemical formula $CO(NH_2)_2$] shall be added to the limestone-$HNO_3$ mixing step of the CAN-17 production process at a rate of not less than 37 pounds urea per ton CAN-17 on a calendar day average basis.

2.4 Compliance determination, demonstration, and monitoring:

2.4.1 Compliance for Conditions 2.1 shall be determined in accordance with CFR 40 Part 60.74 (Test methods and procedures).

2.4.2 Within 180 Plant 8 operating days after the final and effective date of this permit, Agrium will conduct an initial performance test for Condition 2.1.

2.4.2.1 During the performance test, Plant 8 shall run at not less than 80% of the CAN-17 production capacity.

2.4.2.2 Agrium will submit a test plan to Ecology and BCAA for approval at least 30-days prior to performance testing. If the conditions of this PSD permit have been incorporated in KFO's Title V permit (173-401 WAC), submittal to BCAA alone will satisfy this condition.

2.4.3 Not less than once every 60 months after the initial performance test, Agrium shall conduct a performance under the terms of Conditions 2.4.2.1 and 2.4.2.2.

2.4.4 Agrium shall monitor compliance with Conditions 2.2 and 2.3 by maintaining appropriate logs and urea use records.

3. $NO_X$ emissions from Plant 9:

3.1 Shall not exceed 3 lb $NO_X/T_{acid}$ (3-hour average) exclusive of startup and shutdown. This limit shall become null and void after activation of the limit in Condition 3.4.1

3.2 Shall not exceed 410 tons in any consecutive twelve month period including startup and shutdown periods. This limit shall become null and void after activation of the limit in Condition 3.4.3.

3.3 During application of the $H_2O_2$ Innovative $NO_X$ Control Technology:

3.3.1 The following shall be used as benchmarks to ascertain progress of development of the $H_2O_2$ Innovative $NO_X$ Control Technology toward achieving $NO_X$ emission control equivalent to that achievable under Best Available Control Technology:

3.3.1.1 First two months after beginning operation of the $H_2O_2$ Innovative $NO_X$ Control Technology (beginning $H_2O_2$ operation):

3.3.1.1.1 Average not greater than 1,100 lb/day $NO_X$ emissions for Plant 9 operation exclusive of startup and shutdown from 0:00 hours, November 1st through 24:00 hours April 30th.

3.3.1.1.2 Average not greater than 1,400 lb/day $NO_X$ emissions for Plant 9 operation exclusive of startup and shutdown from May 1st through 24:00 hours October 31st.

3.3.1.2 Third through eighth months after beginning $H_2O_2$ operation:

3.3.1.2.1 Average not greater than 635 lb/day $NO_X$ emissions for Plant 9 operation exclusive of startup and shutdown from 0:00 hours, November 1st through 24:00 hours April 30th.

3.3.1.2.2 Average not greater than 950 lb/day $NO_X$ emissions for Plant 9 operation exclusive of startup and shutdown from May 1st through 24:00 hours October 31st.

3.3.1.3 Ninth through twentieth months after beginning $H_2O_2$ operation:

3.3.1.3.1 Average not greater than 345 lb/day $NO_X$ emissions for Plant 9 operation exclusive of startup and shutdown from 0:00 hours, November 1st through 24:00 hours April 30th.

3.3.1.3.2 Average not greater than 570 lb/day $NO_X$ emissions for Plant 9 operation exclusive of startup and shutdown from May 1st through 24:00 hours October 31st.

3.3.1.4 Twenty-first through thirty-second months after beginning $H_2O_2$ operation:

3.3.1.4.1 Average not greater than 330 lb/day $NO_X$ emissions for Plant 9 operation exclusive of startup and shutdown from 0:00 hours, November 1st through 24:00 hours April 30th.

3.3.1.4.2 Average not greater than 380 lb/day $NO_X$ emissions for Plant 9 operation exclusive of startup and shutdown from May 1st through 24:00 hours October 31st.

3.3.1.5 Beginning with the thirty-third month after beginning $H_2O_2$ operation and thereafter, achieve not greater than 330 lb/day $NO_X$ emissions for Plant 9 operation at any time exclusive of startup and shutdown.

3.3.1.6 Achieve not greater than a total of 127 tons $NO_X$ emissions for Plant 9 operation exclusive of startup and shutdown for the first through twelfth months after beginning $H_2O_2$ operation.

3.3.1.7 Achieve not greater than a total of 73 tons $NO_X$ emissions for Plant 9 operation exclusive of startup and shutdown for the thirteenth through twenty-fourth months after beginning $H_2O_2$ operation.

3.3.1.8 Achieve not greater than a total of 63 tons $NO_X$ emissions for Plant 9 operation exclusive of startup and shutdown for the twenty-fifth through thirty-sixth months after beginning $H_2O_2$ operation.

3.3.1.9 Achieve not greater than a total of 47 tons $NO_X$ emissions for Plant 9 operation exclusive of startup and shutdown for the thirty-seventh through forty-eighth months after beginning $H_2O_2$ operation.

3.3.2 Termination of the trial period for the $H_2O_2$ Innovative $NO_X$ Control Technology:

3.3.2.1 If Agrium has not achieved the benchmarks outlined in Conditions 3.3.1.5 and 3.3.1.9 within forty-eight months after the final and effective date of this permit, the trial period for the $H_2O_2$ Innovative $NO_X$ Control Technology shall be terminated.

3.3.2.2 If Ecology determines that Agrium will not be able to achieve the benchmarks outlined in Conditions 3.3.1.1 through 3.3.1.9, the trial period for the $H_2O_2$ Innovative $NO_X$ Control Technology shall be terminated. Ecology will consider in such a determination any written request from Agrium to terminate the trial.

3.3.2.3 Agrium shall have not greater than eighteen months after termination of the trial period to demonstrate compliance with Conditions 3.4.1 through 3.4.3.

3.3.2.4 During the interim period between termination of the $H_2O_2$ Innovative $NO_X$ Control Technology trial and activation of Conditions 3.4.1 through 3.4.3, Agrium shall comply with $NO_X$ emissions limits determined at the time of the trial-termination and incorporated into an amendment to this permit.

3.4 After such time as the $H_2O_2$ Innovative $NO_X$ Control Technology trial has successfully achieved the benchmarks outlined in Conditions 3.3.1.1 through 3.3.1.9, or after the deadline described in Condition 3.3.2.3:

3.4.1 Shall not exceed 0.3 lb $NO_X/T_{acid}$ averaged over all operating hours exclusive of startup and shutdown in any continuous twelve month period,

3.4.2 Shall not exceed 330 pounds per calendar day exclusive of startup and shutdown.

3.4.3 Shall not exceed 47 tons in any consecutive twelve month period including startup and shutdown periods.

3.5 Startup shall begin with gauze light-off:

3.5.1 Shall last not more than two hours per startup.

3.5.2 The CEMS for $NO_X$ will continue operation during startup.

3.6 Shutdown:

3.6.1 Shall begin with cessation of $NH_3$ feed to the $NH_3$ converter.

3.6.2 Shall end when the process compressors are turned off.

3.6.3 The CEMS for $NO_X$ will continue operation during shutdown.

3.7 Compliance determination, demonstration, and monitoring:

3.7.1 Compliance with Conditions 3.1, 3.2, 3.4.1, 3.4.2, and 3.4.3 shall be determined in accordance with CFR 40 Part 60.74 (Test methods and procedures).

3.7.2 Initial performance test:

3.7.2.1 Within 60 days of achieving the maximum HNO3 production rate after activation of Condition 3.4, but not later than 180 days after activation of Condition 3.4, Agrium will conduct a performance test for Condition 3.4.2.

3.7.2.2 During the initial performance test, Plant 9 shall run at not less than 90% acid-production capacity.

3.7.2.3 Agrium will submit a test plan to Ecology and BCAA for approval at least 30-days prior to initial performance testing. If the conditions of this PSD permit have been incorporated in KFO's Title V permit (173-401 WAC), submittal to BCAA alone will satisfy this condition.

3.7.3 Emissions monitoring:

3.7.3.1 Benchmark performance monitoring for Conditions 3.3.1.1 through 3.3.1.9 shall begin immediately upon beginning $H_2O_2$ operation.

3.7.3.2 Compliance monitoring for Conditions 3.1 and 3.2 shall begin immediately with the final and effective date of this permit.

3.7.3.3 Compliance monitoring for Conditions 3.4.1, 3.4.2, and 3.4.3 shall begin immediately upon activation of Condition 3.4.

3.7.3.4 Benchmark performance and continuous compliance will be monitored by a CEMS that measure and records $NO_X$ emissions from Plant 9's tail gas stack on not less than an hourly average basis.

3.7.3.5 The CEMS will meet the requirements of Condition 5.

4. PM emissions from Plant 10:

4.1 Hardening agent equivalent to Galoryl® GR 210-M4 shall be added to the granulator feed at a rate of not less than 75 milliliters per minute averaged over all operating hours on a calendar day basis.

4.2 PM emissions from the ammonium nitrate ($NH_4NO_3$) granulator exhaust stack shall not exceed 0.011 gr/dscft a 24-hour average basis.

4.3 PM emissions from the fluid bed cooler exhaust stack shall not exceed 0.085 gr/dscft a 24-hour average basis.

4.4 The sum of PM emissions from the $NH_4NO_3$ granulator and fluid bed cooler exhaust stacks shall not exceed 99.7 tons in any consecutive twelve month period.

4.5 Compliance determination, demonstration, and monitoring: Compliance with Conditions 4.2 and 4.3 shall be determined by CFR 40 Part 60, Appendix A, Reference Method 5.

4.6 Agrium will monitor continuing compliance with Conditions 4.2 and 4.3:

4.6.1 Not less than once every twelve months from the final and effective date of this permit will run a performance test.

4.6.1.1 If the results of two consecutive performance tests spaced not less than ten months apart are each not greater than 80% of the respective limit, the next set of performance tests may be delayed for not more than sixty months.

4.6.1.2 A sixty month performance test cycle may be continued until one or more test results exceeds 80% of its respective limit. After such event, the twelve month performance test cycle (Condition 4.6.1) will be reinstituted until/unless performance test results satisfy Condition 4.6.1.1.

4.6.2 For the duration of the performance test, Plant 10 shall be operated at not less than 80% of its design capacity.

4.6.3 Compliance will be monitored by:

4.6.3.1 CFR 40 Part 60, Appendix A, Reference Method 5.

4.6.3.2 An equivalent mass emission rate calculation method may be used if approved in advance by Ecology.

4.6.4 Agrium will submit a test plan to Ecology and BCAA for approval at least 30-days prior to initial performance testing. If the conditions of this PSD permit have been incorporated in KFO's Title V permit (173-401 WAC), submittal to BCAA alone will satisfy this condition.

4.7 Agrium will monitor continuing compliance with Condition 4.1:

4.7.1 Beginning immediately upon the final and effective date of this permit.

4.7.2 By maintaining daily records of hardening agent use and granular ammonium nitrate production from Plant 10.

4.8 Agrium will monitor continuing compliance with Condition 4.4:

4.8.1 Beginning with the conclusion of the twelfth month after the final and effective date of this permit.

4.8.2 Determine the arithmetic mean of PM emissions on a pound per hour basis from the respective source test results performed within each twelve consecutive month period (or from the most recent sixty-month test cycle result, if applicable) on the $NH_4NO_3$ granulator and fluid bed cooler exhaust stacks pursuant to Condition 4.6.

4.8.3 Multiply the sum of the values determined pursuant to Condition 4.8.2 by the number of Plant 10 operating hours over the most recent twelve consecutive months.

4.8.4 An equivalent mass emission rate calculation method may be used if approved in advance by Ecology.

5. Continuous Emission Monitoring Systems:

5.1 CEMS for $NO_X$ will satisfy the requirements contained in CFR 40 Part 60, Appendix B, Performance Specification 2 or 6 (as applicable) and CFR 40 Part 60, Appendix F, Quality Assurance Procedures.

5.2 The Relative Accuracy Test Audit required for each installed CEMS will be scheduled to occur during simultaneous test periods.

6. Agrium will provide safe access and sampling ports for source testing of each exhaust stack after the final pollution control device:

6.1 Safe access will consist of permanently constructed platforms on the stacks.

6.2 The sampling ports will meet the requirements of CFR 40 Part 60, Appendix A. Method 1.

6.3 Other arrangements may be acceptable if approved by Ecology prior to installation.

7. Agrium will notify and report to Ecology and BCAA as follows. If the conditions of this PSD permit have been incorporated in KFO's Title V permit (173-401 WAC), "BCAA" may be substituted for "Ecology and BCAA" in Conditions 7.1 through 7.4.

7.1 Notifications and reports will be in a written or electronic format approved by Ecology and BCAA.

7.2 The following notifications shall be submitted to Ecology and BCAA:

7.2.1 Commencement of construction of the $H_2O_2$ Innovative $NO_X$ Control Technology: In accordance with CFR 40 Part 60.7(a)(1), no later than 30 calendar days after such date.

7.2.2 Beginning operation of the $H_2O_2$ Innovative $NO_X$ Control Technology:

7.2.2.1 In accordance with CFR 40 Part 60.7(a)(3), no later than 15 calendar days after such date.

7.2.2.2 If Agrium anticipates the date of beginning operation to be later than four calendar months after the date of commencing construction, Agrium will notify Ecology and BCAA with a written explanation of the delay and a target date for beginning operation. Such notification shall be provided to Ecology and BCAA not later than five calendar months after commencing construction.

7.2.3 Commencement of construction of the enhancements to the existing Plant 7 $NO_X$ control system that are intended to be equivalent to BACT: In accordance with CFR 40 Part 60.7(a)(1), no later than 30 calendar days after such date.

7.2.4 Initial startup of the enhancements to the existing Plant 7 system $NO_X$ control system that are intended to be equivalent to BACT: In accordance with CFR 40 Part 60.7(a)(3), no later than 15 calendar days after such date.

7.2.5 Completion of the entry into the operation and maintenance manual of the items specified in Condition 8, within fifteen days after such entries were completed.

7.2.6 The date on which the NOx CEMS first demonstrated satisfactory performance pursuant to Condition 5.1, no later than 30 calendar days after such date.

7.2.7 Any change in the brand of hardening agent to be used in Plant 10, no later than 30 calendar days after the date of purchase of the new brand.

7.3 The following reports shall be submitted to Ecology and BCAA:

7.3.1 Report results of all initial compliance demonstrations pursuant to Conditions 1.7.2.1, 2.4.2, and 3.7.2.1, no later than 45 calendar days after completion of each respective source test.

7.3.2 Continuing performance monitoring reports required under Condition 7.3.3 shall be submitted for each six-month period ending in June and December:

7.3.2.1 Beginning with the six-month period that includes the final and effective date of this permit.

7.3.2.2 Postmarked not later than one calendar month after the close of each respective six -month period.

7.3.2.3 In accordance with Ecology and BCAA report format requirements.

7.3.2.4 Another reporting schedule may be used if approved by Ecology and BCAA.

7.3.3 Continuing performance monitoring reports will include, but not necessarily be limited to the following:

7.3.3.1 Certification by the responsible party for the facility that the relevant equipment was operated and maintained in accordance with the operational parameters and practices developed pursuant to Condition 8.

7.3.3.2 Pursuant to compliance under Conditions 1.1, 1.1, 1.3, 1.4, 2.1, 3.1, 3.2, 3.4.1, 3.4.2, and 3.4.3, $NO_X$ emissions since the last report:

7.3.3.3 Pursuant to compliance under Condition 2.2, certification from the responsible party for the facility that only HNO3 from Plant 9 was used to produce CAN-17 in Plant 8 since the last report.

7.3.3.4 Pursuant to compliance under Condition 2.3, urea use in Plant 8 since the last report.

7.3.3.5 Pursuant to benchmark monitoring under Condition 3.3.1, $NO_X$ emissions since the last report.

7.3.3.6 Pursuant to compliance under Condition 4.1, hardening agent use in Plant 10 since the last report.

7.3.3.7 Pursuant to compliance under Conditions 4.2 and 4.3, results of any source tests for PM since the last report.

7.3.3.8 Pursuant to compliance under Condition 4.4, PM emissions from Plant 10 since the last report.

7.3.3.9 The duration and nature of any CEMS down-time excluding zero and span checks since the last report.

7.3.3.10 Results of any CEMS audits or accuracy checks since the last report.

7.3.4 Each occurrence of monitored $NO_X$ emissions (Conditions 1.1, 1.1, 1.3, 1.4, 2.1, 3.1, 3.2, and 3.4) and monitored PM emissions (Conditions 4.2, 4.3, and 4.4), measured in excess of the limits, failure to comply with $HNO_3$ source limitations for Plant 8 (Condition 2.2), failure to use the required amount of urea in CAN-17 production (Condition 2.3) or failure to use the required amount of hardening agent in granulated $NH_4NO_3$ production (Condition 4.1) shall be reported in writing to Ecology and BCAA after the respective exceedance in accordance with WAC 173-400-107(3). Such reports shall as a minimum include:

7.3.4.1 The time of the occurrence.

7.3.4.2 Magnitude of divergence from the limit.

7.3.4.3 The duration of the divergence.

7.3.4.4 The probable cause.

7.3.4.5 Corrective actions taken or planned.

7.3.4.6 Any other agency contacted.

7.4 Agrium will maintain monitoring, source test, CEM audit tests, and process records:

7.4.1 At the Kennewick facility.

7.4.2 For at least five years.

7.4.3 Monitoring and process records that include time and duration of startups and shutdowns of plants 7 and 9.

7.4.4 Agrium will provide Ecology and BCAA with the monitoring and process records for any period within the five year archive within ten working days of request.

8. Operation and maintenance (O&M) manual for the facility:

8.1 Within 90 days of the final and effective date of this permit, Agrium will identify operational parameters and practices for Plants 7, 8, 9, and 10 that constitute proper operation relative to compliance with the emission limitation conditions of this permit.

8.2 Agrium will include these operational parameters and practices in the KFO O&M manual. As a minimum, and to the extent they relate to the emission limitations and

operating requirements specified in the conditions of this PSD permit, these will include

8.2.1 Manufacturers' operating instructions and design specifications.

8.2.2 Normal operating parameters.

8.2.3 Updates to reflect any modifications of the equipment or its operating procedures.

8.3 Agrium will keep the operational parameters and practices in the O&M manual up-to-date to the extent that they relate to the emission limitations and operating requirements specified in the conditions of this PSD permit.

8.4 Agrium will keep the O&M manual readily available at KFO for review by state, federal and local agencies.

8.5 Within thirty days of request from Ecology or BCAA, Agrium shall submit the O&M manual to the requesting agency for approval of any elements relevant to the emission limitations specified in the conditions of this PSD permit.

9. Nothing in this determination will be construed so as to relieve Agrium of its obligations under any state, local, or federal laws or regulations.

10. Subject to RCW 70.94.200, Agrium will permit the Environmental Protection Agency, state and local regulatory personnel access to the source upon request for the purposes of compliance assurance inspections.

11. This approval will become invalid:

11.1 If construction of the facility is discontinued for a period of eighteen (18) months.

11.2 If construction of the project is not commenced within eighteen (18) months after receipt of the final approval. Upon written approval by Ecology, this PSD permit may be extended pursuant to CFR 40 Part 52.21(r)(2) and applicable EPA guidance.

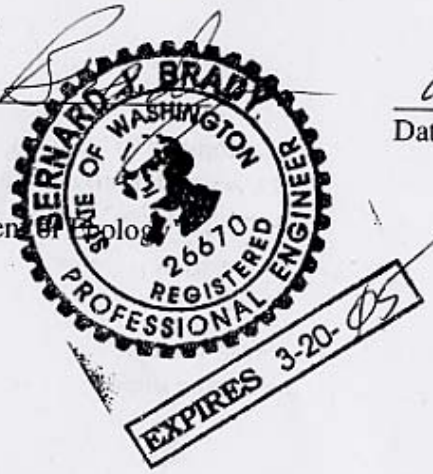
12. Final approval of this permit shall not be earlier than that date upon which the USEPA notifies Ecology that the USEPA has satisfied its obligations, if any, under Section 7 of the Endangered Species Act 16 U.S.C. § 1531 et seq., 50 C.F.R: part 402, subpart B (Consultation Procedures) and Section 305(b)(2) of the Magnuson-Stevens Fishery and Conservation Act 16 U.S.C. § 1801 et seq., 50 C.F.R. part 600, subpart K (EFH Coordination, Consultation, and Recommendations).

**Reviewed by:**

Bernard J. Brady

Bernard Brady, P.E.
Technical Services Section
Air Quality Program
Washington State Department of Ecology

August 27, 2005
Date




**Approved by:**

Stuart A. Clark, Program Manager
Air Quality Program
Washington State Department of Ecology

8/27/04
Date

Ecology was notified by the USEPA that the USEPA has satisfied its obligations under the Endangered Species and Magnuson-Stevens Acts on:

June 25, 2004
Date of USEPA notification

Stuart A. Clark, Program Manager
Air Quality Program
Washington State Department of Ecology