

# TRONOX

Susan Crowley  
Staff Environmental Specialist

(702) 651-2234  
Fax (405) 302-4607  
susan.crowley@tronox.com

January 10, 2007

William Frey  
Senior Deputy Attorney General  
Nevada Department of Justice  
100 N. Carson Street  
Carson City, NV 89701-4717

Dear Mr. Frey:

**Subject: Request for Time Extension on Combined Tronox Remedial Project Reports**

Tronox LLC (Tronox), formerly Kerr-McGee Chemical LLC (Kerr-McGee), is engaged in several environmental remediation projects in the Henderson, NV area. The first project is related to chromium and remedial activities are directed by a 1986 Consent Order between Kerr-McGee and Nevada Division of Environmental Protection (NDEP). The second project is related to perchlorate and remedial activities are directed by a series of Administrative Orders on Consent (AOC) - the most recent dated April 2005. Copies of these documents are included in Attachment A to this correspondence for your convenience.

Both of these remedial projects require remedial progress reporting by the 28<sup>th</sup> day of the first month following the reporting period. In the case of chromium, the reports are filed semi-annually and in the case of perchlorate, the reports are filed quarterly. In discussions with NDEP, we collectively find benefits in combining reports for the two remediation projects. The first report of 2007 for each project (semi-annual for chromium and quarterly for perchlorate) is due January 28<sup>th</sup> and this reporting effort will be the first attempt at accomplishing the combined reporting. The difficult task of including the required project information, while wedding the dissimilar formats, is the first of two reasons for our request to delay the reports to 60 days following the end of the reporting period.

The second reason for a time extension involves difficulties in completing required analytical work. The current requirement to submit the reports by the 28<sup>th</sup> day following the end of the reporting period makes it very difficult to include the analytical data from the last month of the reporting period. Despite our best efforts, the last month's analytical data are sometimes not received before the reporting due date and must be included in subsequent project reports.

Both Todd Croft (Tronox's NDEP case officer for the perchlorate project) and Brian Rakvica (Tronox's NDEP case officer for the chromium project) are agreeable to extending the deadline for the first report of 2007. They are also supportive of modifying Consent Order and AOC language to require subsequent reports within 60 days of the end of a reporting period. Accordingly, Tronox requests that the reporting requirements in both agreements be modified to "reports are due on the 60<sup>th</sup> day following" the end of the reporting period. Signature sheets to accomplish the change are attached.

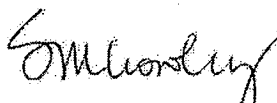
Tronox LLC

8000 West Lake Mead Parkway, Henderson, Nevada 89015 • P.O. Box 55, Henderson, Nevada 89009

William Frey  
January 10, 2007  
Page 2

As the combined report format is evaluated by NDEP, additional format and/or reporting frequency modifications may be needed to fulfill NDEP's information needs. Please feel free to contact me at (702) 651-2234 if you have any questions regarding our request. Thank you.

Sincerely,



Susan Crowley, CEM 1428 exp 3-8-07  
Staff Environmental Specialist

Overnight Mail

Cc: Keith Bailey  
Todd Croft  
Elizabeth Hurst  
Ed Krish  
Brian Rakvica  
Tom Reed  
Rick Stater

## **Attachment A**

### **1986 Consent Order**



C:\SMC\My  
Documents\Word Doc

**Consent Order**  
**September 9, 1986**

### **2005 Administrative Order on Consent**



C:\SMC\My  
Documents\Word Doc

**Administrative Order on Consent**  
**April 12, 2005**

SEP 22 1986

CONSENT ORDER

This Consent Order is made and entered into the 9th day of September, 1986, by and between the State of Nevada, Department of Conservation and Natural Resources, Division of Environmental Protection (hereinafter "Department"), and Kerr McGee Chemical Corporation, a corporation headquartered in the State of Oklahoma (hereinafter "KMCC").

WHEREAS, since December, 1983, the Department has directed KMCC to investigate and to remove chromium contaminants from the groundwater at KMCC's Henderson, Nevada plant facilities; the contaminants which are the subject of this Consent Order are at the Henderson facilities shown on the map attached as Appendix "A" and hereinafter described as the "Site"; and

WHEREAS, KMCC and the Department have agreed to enter into this Consent Order in order to effectuate a mutually satisfactory and prompt cleanup of the chromium contaminants at the Site, pursuant to the timetable set forth in Appendix B, without admitting or denying any liability or factual allegation with respect to any matters arising out of or relating to the Site, and without any part of the Order constituting an admission of liability or fault with respect to any allegation or matter which could be used against KMCC in any legal, equitable, or administrative proceeding.

NOW, THEREFORE, in consideration of, and in exchange for mutual undertakings and covenants herein, and intending to be legally bound hereby, the Department and KMCC agree as follows:

1. This Consent Order shall apply to and be binding upon the parties named herein, their successors and assigns in interest and all persons, firms, subsidiaries, corporations, and government entities acting for or on behalf

of the parties named herein. Any transfer of property or corporate interests does not operate to terminate KMCC responsibilities under this Order, except to the extent that the Department agrees to such termination in writing.

2. The undersigned representative of the parties named herein certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Order and to execute and to legally bind such party to this Consent Order.
3. The corrective action program required by this Order is limited to the treatment of chromium contaminants.
4. KMCC has undertaken and completed a hydrogeologic investigation to determine the location and design of a groundwater intercept system. Hydrogeologic investigative reports for the design and construction of the intercept system shall be submitted to the Department 30 days after the execution of this Order. These reports will include information on any rework of existing wells, sampling and analysis of specific wells, geologic data, hydrologic data, water quality data and results. These reports will also include a description of the intercept system alternatives which were considered, and the technical basis on which the recommended intercept system was selected and the other alternatives rejected.
5. KMCC shall design, construct and operate a groundwater intercept system consistent with the process design set forth in Appendix C which is hereby incorporated into this Order. The final design shall be approved by the Department prior to construction. The intercept system contained in Appendix C is described as a line of pumping wells, and the location of the intercept system is set forth in Appendix A which is hereby incorporated

JBL JAD  
initiated

into this Order. The intercept system project shall be completed no later than 30 days after execution of this Order and completed pursuant to the timetable set forth in Appendix B which is hereby incorporated into this Order. Written progress reports on the design and construction shall be submitted at the end of the first calendar quarter after execution of this Order, and quarterly thereafter.

6. To monitor the effectiveness of the intercept system, KMCC shall install approximately ten water level wells within the area of the trough of depression created by operation of the intercept system. Locations of these water level wells are subject to approval by the Department and shall be as shown on the map attached as Appendix D which is hereby incorporated into this Order. Monthly manual readings will be taken from the water level wells beginning two months prior to startup of the intercept system. After one year KMCC may submit data which supports any reduction in frequency of monitoring to the Department for review and approval. Based on this review, the Department may approve a reduction in the required frequency of monitoring. Based upon the water level readings, a graphical representation will be prepared monthly showing the overlapping cones of depression, which will be proof of the effectiveness of the intercept system. One of the water level monitoring wells in the intercept area will be equipped with a level recorder which will be operated continuously. A second, continuously monitoring water level recorder will be placed in one monitoring well, down-gradient from the recharge trenches. The manual monthly monitoring, when compared to the continuous recording, will demonstrate the dependability of the continuous recorders for water level monitoring. After one year KMCC may submit data supporting the discontinuance of the manual monitoring. Notwithstanding the above, and upon approval by the

Department, KMCC shall select and monitor, semi-annually, certain wells in order to keep the area groundwater level map up-to-date. The wells described in subparagraph 17 must be sampled and analyzed quarterly for chromium to monitor groundwater quality.

7. If the monitoring results required in paragraph 6, occurring six (6) months after initial operation of the intercept system, demonstrate that the system is not effectively collecting the intended groundwater plume, the Department may require KMCC to implement the Contingency Plan set forth in paragraph 8.
8. KMCC shall prepare and submit to the Department for review and approval; an Intercept System Contingency Plan, pursuant to the schedule set forth in Appendix B. This Plan will set forth additional measures to be implemented to improve and update the installed Intercept System to correct, to the extent possible, the deficiencies identified. The Plan will be set forth as Appendix E and will be incorporated into this Order.
9. KMCC has undertaken a program to study various treatment alternatives. A report discussing the treatment alternatives which were considered and the basis on which the selection was made will be submitted to the Department no later than 30 days after execution of this Order.
10. KMCC shall install a chromium treatment system consistent with the process design set forth in Appendix F which is hereby incorporated into this Order. Such system shall be capable of achieving the Discharge Limit set forth in paragraph 11, below, pursuant to the timetable set forth in Appendix B. The final design of the treatment system shall be approved by the Department prior to construction. Written progress reports on the design and construction shall be submitted at the end of the first calendar quarter following execution of the Order and quarterly thereafter.

11. The Discharge Limit to be achieved is: Total Chromium  $\leq 1.7$  mg/l, Hexivalent Chromium  $\leq 0.05$  mg/l as a monthly average; Total Chromium  $\leq 3.4$  mg/l, Hexivalent Chromium  $\leq 0.1$  mg/l as a maximum single value on composite samples.
12. KMCC shall sample and analyze the end-of-pipe effluent from the treatment system, for the compound set forth in paragraph 11, in accordance with the procedures and protocols set forth in Appendix G which is hereby incorporated into this Order and are subject to the approval of the Department. Representative samples shall be taken three (3) times per week, but no more frequently than every other day. These samples shall be composited and analyzed once per week. Upon a satisfactory showing to the Department, KMCC may reduce the frequency of sampling and analysis.
13. The Discharge Limit established above in subparagraph 11 will be applicable no later than two (2) months after startup and initial operation of the treatment system. A violation of the Discharge Limit occurs when the value for chromium exceeds the established Discharge Limit.
14. KMCC shall prepare and submit a Treatment System Contingency Plan, pursuant to the schedule set forth in Appendix B. This Plan will set forth additional measures to be implemented to improve and upgrade the installed Treatment System to correct, to the extent possible, any failure of the Treatment System to meet the Discharge Limit. The Plan will be set forth in Appendix H which will be incorporated into this Order. Within 10 days after two consecutive monthly violations, KMCC shall submit for Department review and approval, the specific contingency plan and schedule of implementation for that plan. Upon approval, the plan shall be implemented. The Department agrees to waive the imposition of stipulated penalties as provided for in paragraph 24 during the review period and implementation of the



contingency plan so long as KMCC shows that the failure to meet the Discharge Limit was not due to its negligence.

15. KMCC has undertaken a program to study various treated solution disposal system alternatives. Within 45 days following execution of this Order, KMCC shall submit to the Department a report which will include a description of the disposal system alternatives which were considered, and the technical basis on which the selected disposal system was selected and the other alternatives rejected.
16. KMCC shall design, construct and operate an underground disposal system for treated groundwater consistent with the process design set forth in Appendix I which is hereby incorporated into this Order. The final design of the disposal system shall be approved by the Department prior to construction. The location of the underground disposal is set forth in Appendix A. This project shall be completed pursuant to the timetable set forth in Appendix B. Written progress reports on the design and construction shall be submitted at the end of the first calendar quarter following execution of the Order and quarterly thereafter.
17. KMCC shall provide monitoring wells at locations set forth in Appendix J which will be incorporated into this Order to measure quarterly the impact of the underground disposal system on groundwater levels. The Department and KMCC agree that any increase in the groundwater level, attributable to underground disposal of KMCC-treated water, that causes surfacing, wet spots, or degrades soil characteristics to threaten man-made improvements, shall require KMCC to implement the Disposal System Contingency Plan set forth in paragraph 18, below.

18. KMCC shall develop and submit to the Department a Disposal System Contingency Plan, pursuant to the schedule set forth in Appendix B. This Plan will set forth additional measures to be implemented to improve and upgrade the installed Disposal System, to correct the deficiencies identified in paragraph 17, above. The Plan will be set forth in Appendix J.
19. The chromium removed at the treatment facility shall be properly managed in accordance with applicable State or Federal regulations. The Treatment System and the Underground Disposal System may require Resource Conservation and Recovery Act (RCRA) permits. The Underground Disposal System may also require an Underground Injection Control (UIC) and/or a State groundwater discharge permit. If such permits are required, applications shall be filed by KMCC in sufficient time so as not to unreasonably delay the time for commencement of corrective action. The Department will cooperate with KMCC in obtaining any necessary permits for the Treatment or Underground Disposal Systems.
20. KMCC shall implement the safety plan set forth in Appendix K which is hereby incorporated into this Order.
21. The Department reserves the right to sample at its discretion, specific wells, influent, effluent, etc., for the purpose of oversight, quality assurance, and coordination with other investigations at the BMI Complex.
22. Subject to paragraph 27, below, KMCC may cease intercept, treatment and disposal activities when the concentration in the influent to the treatment system, of the compound having the Discharge Limit, does not exceed its Discharge Limit for a continuous period of three (3) months, based upon samples collected and analyzed pursuant to their respective sampling and analytical requirements. KMCC shall give notice to the Department when this

this Order is not met; \$1,000 per day for each day that any of the construction, treatment or disposal deadlines in Appendix B are not met; \$1,000 for each week the Discharge Limit is violated. Before invoking this provision, the Department shall issue an Order to Show Cause why KMCC is not liable for any stipulated penalty. Upon such issuance, KMCC shall have fifteen (15) days to show that failure was due to circumstances beyond KMCC's reasonable control. The Department and KMCC agree that these stipulated penalties are the sole and exclusive civil monetary penalty remedy of the Department for the violations covered by this paragraph 24.

25. The Department has determined that KMCC's compliance with the terms and conditions of this Consent Order constitutes full satisfaction of any and all claims the Department has against KMCC with respect to the chromium constituents identified in paragraph 11 pursuant to the Nevada Water Pollution Control Act and regulations, and the Nevada Hazardous Waste Disposal Act and regulations. Subject to KMCC compliance, the Department and its delegate agencies release KMCC from liability under the aforementioned statutes for chromium constituents and covenants not to sue or take any action against KMCC as to any civil liabilities or claims under these State statutes arising out of the presence of the inorganic identified in paragraph 11. This release specifically does not apply to any compound not identified in paragraph 11 and does not apply to the element identified in paragraph 11 when (a) the migration off-site occurs through a different channel than that being addressed by the intercept system provided for in this Order or (b) migration off-site occurred prior to the operation of the treatment system provided for in the Order.

26. No provision of this Order restricts KMCC's rights to administrative and judicial review pursuant to the Nevada Administrative Procedures Act, NRS

cessation will occur.

23. Any failure by KMCC to comply with the terms and conditions set forth in the Consent Order which is demonstrated by KMCC to be beyond KMCC's reasonable control, including obtaining of necessary local, State and Federal permits, obtaining access to property belonging to others, acts of God, fire, flood, windstorm, explosion, riot, war, sabotage and cause or causes beyond the reasonable control of KMCC, shall not be grounds for a finding of violation of this Consent Order and the time for performance herein shall be extended for the time period of such delay. If such circumstances prevent performance, such performance shall be excused unless and until circumstances so change that the performance is no longer prevented. Prompt notice of any delay shall be given by KMCC to the Department. As soon as possible after giving such notice, but in no event later than fifteen (15) days after becoming aware of such delay or prevention or anticipated delay or prevention, KMCC shall submit a written statement to the Department which fully describes the anticipated length and cause of such delay or prevention, the actions KMCC has taken and/or proposes to take to avoid or mitigate the impact of such a prevention and the proposed schedules for such action. KMCC shall use their best efforts to anticipate and minimize or avoid any delay or prevention of timely and complete performance of their obligations pursuant to this Consent Order. Increased costs or expenses associated with the implementation of actions called for by this Consent Order shall not, in any event, be a basis for changes in this Consent Order or extensions of time under this paragraph.
24. Upon failure by KMCC, except as provided in paragraph 23 above, to perform as set forth in this Order, KMCC shall pay a stipulated civil penalty of \$100 per day for each day that a progress reporting deadline as listed in

233B.121 et. seq., of any Departmental final action or determination under this Order.

27. KMCC shall monitor wells within the zone of the intercept system, acceptable to the Department, for at least three (3) years after completion of intercept, treatment and disposal, to ensure that the cleanup has been completed as agreed and that the level in the wells remain below the level set forth in paragraph 11 above. Samples shall be taken and analyzed, quarterly, for the element having the Discharge Limit. If during the three-year monitoring period the limit is exceeded, KMCC shall again begin treatment. Treatment will continue until the limit is again achieved, and the wells will be monitored for the three-year period as specified above.
28. By agreeing to this Order, KMCC hereby unconditionally guarantees performance of its obligations under this Order. Consistent with Federal regulations, KMCC will affirm their financial capability to fulfill their obligation under this Order on an annual basis, if requested by the Department, using the most recent certified financial statements. If KMCC is no longer able to demonstrate financial capability by use of the Financial Test, KMCC agrees to demonstrate financial capability by use of one of the alternative mechanisms specified in the Federal regulations adopted pursuant to the Resource Conservation and Recovery Act (RCRA), such as a surety bond, letter of credit or trust fund, no later than sixty (60) days after a demand by the Department to so demonstrate.
29. Within thirty (30) days after the issuance of this Order, KMCC agrees to pay into the Nevada Fund for the Management of Hazardous Waste created by NRS 459.530, \$10,000 for the future monitoring and other management activities associated with the site by the Department.

30. On or before the effective date of this Order, the Department and KMCC shall each designate a coordinator to administer this Order on behalf of the designator. KMCC shall record a copy of this Order with the Recorder of Clark County, Nevada.
31. This Consent Order supercedes and nullifies all other State Orders issued to KMCC regarding chromium contamination of the groundwater.
32. The Department shall not be liable for any injury or damages to persons or property resulting from KMCC's acts or omissions under this Order. Nor shall KMCC hold the Department out as a party to any contract entered into by KMCC to carry out this Order.

IN WITNESS WHEREOF, the Department and KMCC execute this Consent Order by their duly authorized representatives on this 9th day of September, 1986.

THE STATE OF NEVADA  
DEPARTMENT OF CONSERVATION AND  
NATURAL RESOURCES  
DIVISION OF ENVIRONMENTAL  
PROTECTION

By

L.H. Dodgion  
Name: L.H. Dodgion

Title: Administrator

KERR-MCGEE CHEMICAL CORPORATION

By

Rolfe B. Chase, Jr.  
Name: Rolfe B. Chase, Jr.

Title: Plant Manager

## APPENDIX B

### SCHEDULE OF IMPLEMENTATION

The following presents a schedule of implementation for the proposed groundwater mitigation program at the Henderson Facility with time for completion after approval by the Nevada DEP:

<u>Action Taken</u>	<u>Plan Approval</u>
1. Install four 6" interceptor wells along the intercept line and conduct pumping tests.	1 mo.
2. Construct a test recharge trench and conduct a short-term reinjection/infiltration test.	3 mo.
3. Complete further treatability studies on removal of chromium from the groundwater.	4 mo.
4. Drill additional geological borings along the intercept line to define the subsurface features of the Muddy Creek Formation.	4 mo.
5. Install other interceptor wells along the intercept line (the number of additional wells determined by 1 above).	7 mo.
6. Submit to NDEP - Appendix E, Intercept System Contingency Plan	7 mo.
7. Install upgradient and downgradient monitoring wells and collect initial or background samples.	7 mo.
8. Complete construction of treatment facility.	10 mo.
9. Submit to NDEP - Appendix H, Treatment System Contingency Plan.	11 mo.
10. Complete construction of recharge trenches.	11 mo.
11. Submit to NDEP - Appendix J, Disposal System Contingency Plan.	12 mo.
12. Install permanent pump in interceptor wells and install all necessary piping.	12 mo.
13. Start recovery program.*	12 mo.
14. Interim Report on recovery program to Nevada Department of Environmental Protection.	13 mo.

\*This assumes no RCRA or UIC permit is required. If a permit is required, the recovery program start will be delayed until such permit is received.

## Appendix List

### Appendix A - Map of Site

Plate 2: "Map Showing Chromium Distribution in the Near-Surface Aquifer in June/July, 1985, at the Henderson Facility," from Groundwater Mitigation Program, KMCC, Henderson, Nevada Facility Report dated October, 1985.

### Appendix B - Schedule

### Appendix C - Intercept System

Intercept System design described in Groundwater Mitigation Program, KMCC, Henderson Facility Report dated, 1985.

System design and additional data to be submitted 30 days after execution of the Consent Order.

### Appendix D - Map of Water Level Monitoring Wells

To be submitted 30 days after execution of the Consent Order.

### Appendix E - Intercept System Contingency Plan

To be submitted 7 months after execution of the Consent Order.

### Appendix F - Chromium Treatment System Process Design

The chromium treatment system process design shall be submitted for review and approval prior to construction of the treatment system.

### Appendix G - Sampling and Analysis Procedures and Protocols

The sampling and analysis procedures and protocols shall be submitted for review and approval by 45 days after execution of the Consent Order.



Appendix List  
Page -2-

Appendix H - Treatment System Contingency Plan

The treatment system contingency plan shall be submitted within 11 months of the execution of the Consent Order.

Appendix I - Underground Disposal System

Final design of the underground system shall be submitted for review and approval within 45 days after the execution of the Consent Order.

Appendix J - Monitoring Wells and Contingency Plan for Disposal System

The contingency plan for the disposal system shall be submitted within 12 months after the execution of the Consent Order.

Appendix K - Safety Plan

The safety plan shall be submitted on completion of plant construction.

### **ADMINISTRATIVE ORDER ON CONSENT**

This Administrative Order on Consent ("2005 AOC") is made and entered into on this 12<sup>th</sup> day of April 2005, by and between the State of Nevada, Department of Conservation and Natural Resources, Division of Environmental Protection ("NDEP" or "Division") and Kerr-McGee Chemical LLC, a Delaware Limited Liability Company ("Kerr-McGee"). Kerr-McGee and the Division are referred to collectively herein as the "Parties."

**WHEREAS**, the Parties entered a Consent Agreement in July 1999, to govern implementation of an expedited removal action addressing perchlorate in surface water in a seep adjacent to the Las Vegas Wash;

**WHEREAS**, the Parties entered into an administrative order on consent on October 8, 2001 ("2001 AOC"), to govern conduct of longer-term perchlorate cleanup activities to reduce the amount of perchlorate in ground and surface water reaching the Las Vegas Wash and Lake Mead;

**WHEREAS**, NDEP issued Kerr-McGee a five-year permit on August 7, 2000, for discharge of effluent from the perchlorate removal system, and this permit must now be renewed and modified, as appropriate, to take account of certain new developments, and Kerr McGee submitted an application to renew and amend this permit in February of 2005;

**WHEREAS**, pursuant to the 2001 AOC and as agreed by the Parties, as well as the Clean Water Act permit as amended in 2004, Kerr-McGee presently operates a biological treatment plant capable of treating 1000 gallons per minute of perchlorate containing water;

**WHEREAS**, Kerr-McGee historically operated a series of surface impoundments or ponds to manage perchlorate containing manufacturing process fluids, and Kerr-McGee, as part of its efforts to reduce the threat of further perchlorate releases to ground and surface water has been decommissioning these ponds, and a single perchlorate process pond ("AP-5") remains;

**WHEREAS**, NDEP and Kerr-McGee have agreed that the best means for sound disposition of perchlorate containing materials in AP-5 will be the processing of these materials

DC: 1701752-3

along with perchlorate contaminated groundwater in the biological treatment system constructed and operated at the Kerr-McGee site to fulfill the requirements of the 2001 AOC, but use of the biological treatment system for this purpose will require its expansion, and provision in Kerr-McGee's renewed Clean Water Act permit to allow discharge of effluent from treating pond contents in addition to treated ground and surface water, subject to the discharge limits as apply in an applicable permit;

**NOW THEREFORE**, in consideration of and in exchange for the mutual undertakings and covenants herein, intending to be legally bound hereby, the Division and Kerr-McGee agree as follows:

#### **I. STATEMENT OF PURPOSE**

The Division and Kerr-McGee are entering into this 2005 AOC to continue to document their respective rights and responsibilities during the ongoing conduct of a perchlorate removal action designed to reduce the amount of perchlorate in ground and surface water reaching the Las Vegas Wash and Lake Mead in both the near and long-term. The Division and Kerr-McGee are entering into this 2005 AOC to establish a compliance schedule for treatment of the perchlorate residues in AP-5 to avert any further threat of a release of perchlorate to the environment; to update and clarify Kerr-McGee's groundwater cleanup obligations to reflect certain changes agreed to by the Parties since entering the 2001 AOC; and to provide for continued reimbursement to the Division of Kerr-McGee's fair share of oversight costs incurred by the Division.

#### **II. WORK TO BE PERFORMED**

1. The Parties intend that the work to be performed in accordance with this 2005 AOC shall be carried out in a manner consistent with applicable federal and Nevada statutes, implementing regulations and the National Contingency Plan, 40 C.F.R. § 300.1 *et. seq.*

2. The following schedule shall apply to Kerr-McGee's obligation to complete decommissioning of AP-5:

A. By August of 2005 Kerr-McGee will complete pilot testing and preliminary engineering for an additional bioreactor to enable its existing biological treatment system to treat the contents of AP-5, subject to the discharge limits applicable to ground and surface water treated in the biological treatment system.

B. By August 2006 Kerr-McGee shall complete final engineering, detailed design and construction of the additional bioreactor and begin treatment of contents of AP-5.

C. By August 2006 Kerr-McGee shall complete the final engineering, detailed design, and construction of an enhanced solids recovery and management portion of the existing biological treatment system to provide for improved effluent clarity.

D. Within five years of initiation of treatment, Kerr-McGee shall complete decommissioning of AP-5.

E. Until completion of decommissioning of AP-5, Kerr-McGee shall continue to maintain AP-5 and its liner system in a manner to prevent release of perchlorate to groundwater.

3. Kerr-McGee shall continue to fulfill all its obligations under the AOC of October 8, 2001, except to the extent modified by subsequent agreement of the Parties and by this new AOC.

4. This 2005 AOC may be modified further to incorporate the remediation and reporting requirements of an on-going chromium groundwater contaminant remediation project.

### **III. STIPULATED PENALTIES**

Unless there has been a written modification approved by NDEP, any failure by Kerr-McGee to meet a schedule deadline or otherwise carry out the work described in Section II may result in NDEP assessing stipulated penalties against Kerr-McGee. All penalty amounts are maximum amounts. Nothing in this 2005 AOC shall be construed to limit in any manner NDEP's discretion with respect to whether to take enforcement action or to assess less than the maximum penalty. Failure to commence, perform and/or complete work as described in Section

II in a manner acceptable to NDEP will result in the following penalties subject, however, to a cap of \$250,000.

<u>Period of Noncompliance</u>	<u>Maximum Penalty per Day</u>
1 <sup>st</sup> -7 <sup>th</sup> day	\$ 1,000
8 <sup>th</sup> -21 <sup>st</sup> day	\$ 2,500
22 <sup>nd</sup> day and thereafter	\$ 5,000

The assessment of stipulated penalties shall not alter Kerr-McGee's obligation to comply with the terms of this 2005 AOC.

#### IV. DISPUTE RESOLUTION

1. The Parties shall use their best efforts informally and in good faith to resolve any dispute or differences of opinion. The Parties agree that the procedures contained in this Section are the sole and exclusive procedures for resolving disputes arising under this 2005 AOC. If Kerr-McGee fails to follow any of the requirements contained in this Section, then it shall have waived its right to further consideration of the dispute in issue.

2. If Kerr-McGee disagrees, in whole or in part, with any written determination by the Division pursuant to this 2005 AOC, Kerr-McGee shall notify the Division in writing of the dispute ("Notice of Dispute").

3. Any dispute that arises under or with respect to this 2005 AOC shall in the first instance be the subject of informal negotiations between the Parties. The period for informal negotiations shall not exceed ten (10) days following the date the dispute arises, unless such period is extended by written agreement of the Parties. The dispute shall be considered to have arisen when the Division receives a written Notice of Dispute.

4. In the event that the Parties cannot resolve a dispute by informal negotiations under the preceding paragraph, then the position advanced by the Division shall be considered binding unless, within ten (10) days after the conclusion of the informal negotiation period, Kerr-

McGee invokes the formal dispute resolution procedures of this Section by serving on the Division Administrator a written Statement of Position which shall set forth the specific points of the dispute, the position Kerr-McGee claims should be adopted as consistent with the requirements of this 2005 AOC, the basis for Kerr-McGee's position, any factual data, analysis or opinion supporting that position, any supporting documentation relied upon by Kerr-McGee, and any matters which it considers necessary for the Administrator's determination. The Statement of Position also may include a request for an opportunity to make an oral presentation of factual data, supporting documentation and expert testimony to the Administrator and to answer questions that the Administrator may pose. It is within the sole discretion of the Administrator to grant or deny a request for oral presentation.

5. Within fifteen (15) days following receipt of a Statement of Position, or after any oral presentation by Kerr-McGee, the Administrator shall issue his/her decision. The Administrator's written decision shall include a response to Kerr-McGee's arguments and evidence. The written decision of the Administrator shall be incorporated into and become an enforceable element of this 2005 AOC, and shall be considered the Division's final decision as provided in paragraph 6 of this Section.

6. As to any final Division decision, Kerr-McGee may, as appropriate, pursue the dispute before the State Environmental Commission ("SEC") as a "contested case" pursuant to NRS §§ 233B.010 *et seq.* and NAC §§ 445.988 – 445.995, and shall be entitled to both administrative and judicial review as provided therein.

#### V. FORCE MAJEURE

1. Kerr-McGee shall perform the requirements of this 2005 AOC within the time limits prescribed, unless the performance is prevented or delayed by events which constitute a *force majeure*. Kerr-McGee shall have the burden of proving such a *force majeure*. A *force*

---

*majeure*, for purposes of this 2005 AOC, is defined as any event arising from causes not reasonably foreseeable and beyond the reasonable control of Kerr-McGee, or of any person or

entity controlled by Kerr-McGee, which delays or prevents the timely performance of any obligation under this Consent Agreement despite Kerr-McGee's best efforts to fulfill such obligation. A *force majeure* may include: extraordinary weather events, natural disasters, strikes and lockouts [by other than Kerr-McGee employees], national emergencies, delays in obtaining access or use of property not owned or controlled by Kerr-McGee despite timely best efforts to obtain such access or use approval, and delays in obtaining any required approval or permit from the Division or any other public agency that occur despite Kerr-McGee's complete, timely and appropriate submission of all information and documentation required for approval or applications for permits within a timeframe that would allow the work to proceed in a manner contemplated by the schedule of the 2005 AOC. A *force majeure* does not include (i) increased costs of the work to be performed under the 2005 AOC, (ii) financial inability to complete the work or (iii) normal precipitation events.

2. If any event occurs or has occurred that may delay the performance of Kerr-McGee's obligations under this 2005 AOC, whether or not caused by a *force majeure* event, Kerr-McGee shall notify the Division orally within two (2) business days of when Kerr-McGee first knew that the event might cause a delay. If Kerr-McGee wishes to claim a *force majeure* event, then within five (5) business days thereafter, Kerr-McGee shall provide to the Division a written explanation and description of the obligation(s) delayed or affected by the *force majeure* event; the reasons for the delay; the anticipated duration of the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Kerr-McGee's rationale for attributing such delay to a *force majeure* event; and a statement as to whether, in the opinion of Kerr-McGee, such event may cause or contribute to an imminent and substantial hazard to human health, welfare, or the environment. Kerr-McGee shall include with any notice all available documentation supporting its claim that the delay was attributable to a *force majeure*. Failure to comply with the above requirements shall preclude Kerr-McGee from asserting any claim of *force majeure* for that event.

3. The Division shall notify Kerr-McGee in writing of its *force majeure* determination within ten (10) days after receipt of the written notice from Kerr-McGee. If the Division determines that the delay has been or will be caused by circumstances constituting a *force majeure* event, the time for performance of the obligations under this 2005 AOC that are affected by the *force majeure* event will be extended by the Division in writing for such time as the Division determines is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the *force majeure* event shall not, of itself, extend the time for performance of any other obligation, unless Kerr-McGee can demonstrate to the Division's satisfaction that more than one obligation was affected by the *force majeure* event.

4. In the event that the Division and Kerr-McGee cannot agree that any delay or failure has been or will be caused by circumstances constituting a *force majeure*, or if there is no agreement on the length of the extension, the dispute shall be resolved in accordance with the dispute resolution provisions set forth in Section IV of this 2005 AOC.

## **VI. REPORTING REQUIREMENTS**

1. Monthly Progress Reports – Until Kerr McGee begins operation of the proposed expanded biological treatment system to treat contents of AP-5, Kerr-McGee shall prepare and provide to NDEP written monthly Progress Reports which: (1) describe the actions which have been taken toward achieving compliance with Section II. 2. A. & B. of this 2005 AOC during the previous months, and (2) include information regarding percentage of completion, unresolved delays encountered, or anticipated delays that may affect the future schedule for implementation of the measures described in Section II. 2. A. & B., including a description of efforts made to mitigate these delays or anticipated delays. Such Progress Reports are to be submitted to NDEP by the 5th day of each month following the month for which the report covers.

2. Quarterly Progress Reports – Once Kerr-McGee begins operation of the expanded biological treatment plant, in lieu of the monthly reports described in Section VI.1., Kerr-McGee shall include a description of the operations of its AP-5 decommissioning operations in the



quarterly reports required by Section VI of the 2001 AOC. Such quarterly reports are due on the 28th day following each three month period of operation, but at its discretion NDEP may change the reporting interval to require only semi-annual reporting.

## **VII. REIMBURSEMENT OF OVERSIGHT COSTS**

1. Kerr-McGee shall continue to reimburse the Division for costs reasonably incurred for the oversight of its perchlorate removal efforts.

2. The Division shall account for oversight costs associated with implementing this 2005 AOC and related work and shall submit to Kerr-McGee copies of all invoices on a quarterly basis, commencing with the first full calendar quarter after the effective date of this 2005 AOC. Submittals shall be made promptly after the Division's internal review. Such invoices shall contain sufficient detail to identify individual daily time entries and all invoices or costs details for administrative and vendor expenses (such as travel, training, equipment, photocopying expense and similar items). These invoices shall be prepared consistent with standard State billing practices and shall not require the creation of new billing practices. Amounts due hereunder shall be paid within thirty (30) days after receipt by Kerr-McGee of the invoices. Kerr-McGee may dispute particular invoiced costs if it determines that the Division has made an accounting error or if it alleges that the particular cost is not reimbursable pursuant to paragraph 3. In the event of such dispute, Kerr-McGee shall pay in a timely fashion undisputed costs. With respect to the disputed cost, Kerr-McGee may pay such amount under protest and without prejudice to recovery of all or any portion thereof at the conclusion of any dispute resolution timely commenced pursuant to Section IV.

3. All payments due by Kerr-McGee shall be by checks payable to the State of Nevada for the full amount due and owing to:

Nevada Division of Environmental Protection  
333 W. Nye Lane  
Carson City, Nevada 89710  
ATTENTION: Chief, Bureau of Corrective Actions  
All checks shall reference the Site and Kerr-McGee's name and address.

## **VIII. RESERVATION OF RIGHTS**

1. The Division reserves all of its statutory and regulatory powers, authorities, rights, and remedies, both legal and equitable, which may pertain to Kerr-McGee's failure to comply with any of the requirements of this 2005 AOC or of any requirement of federal or state laws, regulations, or permit conditions. Except as provided in Section IX (Other Claims: Covenant Not to Sue), this 2005 AOC shall not be construed as a covenant not to sue, release, waiver, or limitation of any rights, remedies, powers, and/or authorities, civil or criminal, which the Division has under any applicable statutory or common law authority of the State. This 2005 AOC in no way relieves Kerr-McGee of its responsibility to comply with any federal, state or local law or regulation.

2. The Division reserves the right to disapprove work performed by Kerr-McGee pursuant to this 2005AOC subject to Dispute Resolution under Section IV.

3. The Division reserves any and all legal rights and equitable remedies available to enforce (1) the provisions of this 2005 AOC, or (2) any applicable provision of state or federal law.

4. Kerr-McGee reserves all rights, claims and/or defenses it may have in any action brought or taken by the Division, the U.S. EPA or any third party pursuant to applicable law, with respect to the specific claims that can be asserted and further reserves the right to pursue potentially responsible parties to recover all costs incurred in the performance of this 2005 AOC.

5. Nothing in this 2005 AOC shall be construed as an admission of liability by Kerr-McGee.

## **IX. OTHER CLAIMS: COVENANT NOT TO SUE**

Nothing in this 2005 AOC shall constitute or be construed as a release from, or covenant not to sue with respect to, any claim, cause of action, demand or defense in law or equity, against any person, firm, partnership, or corporation for, or in respect of any liability it may have arising

out of or relating to in any way to the generation, storage, treatment, handling, management, transportation, release, threatened release, or disposal of any perchlorate at or otherwise associated with the Site, except that the Division covenants not to sue Kerr-McGee with respect to perchlorate contamination at Henderson, Nevada so long as Kerr-McGee is in compliance with the terms of this 2005 AOC and the 2001 AOC.

#### **X. APPLICABLE LAW**

This 2005 AOC shall be construed in accordance with and governed by the law of the State of Nevada.

#### **XI. EFFECTIVE DATE**

This 2005 AOC shall become effective when it is fully executed by the parties. The effective date will be the date of last signature.

#### **XII. MODIFICATION**

This 2005 AOC may be modified or amended only upon the mutual agreement of the Parties. Any modification or amendment shall be in writing, shall be signed by the Parties and shall have an effective date commencing on the date it is signed by the Division, unless otherwise stated.

#### **XIII. TERMINATION**

This 2005 AOC shall terminate upon the occurrence of any of the following events:

1. Any agency or department of the United States government asserts and undertakes lead responsibility for addressing perchlorate contamination at Henderson.
2. The Division, Kerr-McGee and any other Party(ies) enter a new order or agreement to govern long-term remedial action with respect to perchlorate contamination and/or other contamination in groundwater at Henderson, and this later agreement expressly supersedes the 2001 AOC and the 2005 AOC.
3. Upon application by Kerr-McGee for termination of this 2005 AOC, Kerr-McGee demonstrates to the satisfaction of the Division that response activities have reduced perchlorate

concentrations in the Henderson groundwater to a point that continued operation of the treatment system is unlikely to result in further measurable benefit to water quality in the Las Vegas Wash or Lake Mead.

#### **XIV. SIGNATORIES**

Each undersigned individual represents and warrants that he or she is fully authorized by the party he or she represents to enter into this 2005 AOC and to legally bind such party to the terms and conditions of this 2005 AOC.

**IN WITNESS WHEREOF**, the Division and Kerr-McGee execute this 2005 AOC by their duly authorized representatives on this 12<sup>th</sup> day of April, 2005.

THE STATE OF NEVADA DIVISION OF  
ENVIRONMENTAL PROTECTION

By: Leo Drozdoff

Name: Leo Drozdoff

Title: Administrator

KERR-McGEE CHEMICAL LLC

By: George D. Christiansen

Name: George D. Christiansen

Title: Vice President

APPROVED AS TO FORM this 12<sup>th</sup> day of April, 2005.

BRIAN SANDOVAL  
Attorney General

By: William Frey

WILLIAM FREY  
Senior Deputy Attorney General  
Nevada Bar No. 4266  
100 N. Carson St.  
Carson City, NV 89701  
775-684-1229

**Attachment B**

**Signature Pages  
For Executing Changes in the  
1986 Consent Order and the  
2005 Administrative Order on Consent**

## Modification of 1986 Consent Order

This document modifies the Consent Order, dated September 9, 1986, between the Nevada Division of Environmental Protection (Division) and Tronox LLC, (Tronox), formerly Kerr-McGee Chemical LLC. It extends the performance report due date. The modification is needed to include analytical from the last month of the reporting period as well as to harmonize and wed the formats of several performance reports, so that reports for several remedial project can be combined.

The following language will be added as a separate paragraph at the end of Paragraph 12 of the Consent Order:

"Performance reports will be submitted to NDEP on a semi-annual basis within 60 days of June 30<sup>th</sup> and December 31<sup>st</sup> each year."

All terms and conditions of the Consent Order shall remain in full force and effect.

In witness whereof, the Division and Tronox execute this modification by their duly authorized representatives on this \_\_\_\_\_ day of January, 2007.

THE STATE OF NEVADA DIVISION OF  
ENVIRONMENTAL PROTECTION

TRONOX LLC

By: \_\_\_\_\_  
Name: Leo Drozdoff  
Title: Administrator  
Date: \_\_\_\_\_

By: \_\_\_\_\_  
Name: Patrick S. Corbett  
Title: Vice President  
Date: \_\_\_\_\_

## Modification of 2005 Administrative Order on Consent

This document modifies the Administrative Order on Consent, dated April 12, 2005, between the Nevada Division of Environmental Protection (Division) and Tronox LLC (Tronox LLC (Tronox), formerly known as Kerr-McGee Chemical LLC. It extends the performance report due date. The modification is needed to include analytical from the last month of the reporting period as well as to harmonize and wed the formats of several performance report, so that reports for several remedial project can be combined.

The modified AOC language is as follows:

Page 7 and 8: Section VI – 2. Quarterly Progress Reports – once Kerr-McGee begins operation of the expanded biological treatment plant, in lieu of the monthly described in Section VI.1., Kerr-McGee shall include a description of the operations of it's AP-5 decommissioning operations in the quarterly reports required by Section VI of the 2001 AOC. Such reports are due 60 days following each three month period of operation, but at it's discretion NDEP may change the reporting interval to require only semi-annual reporting.

All other terms and conditions of the AOC shall remain in full force and effect.

In witness whereof, the Division and Tronox execute this modification by their duly authorized representatives on this \_\_\_\_\_ day of January, 2007.

THE STATE OF NEVADA DIVISION OF  
ENVIRONMENTAL PROTECTION

TRONOX LLC

By: \_\_\_\_\_  
Name: Leo Drozdoff  
Title: Administrator  
Date: \_\_\_\_\_

By: \_\_\_\_\_  
Name: Patrick S. Corbett  
Title: Vice President  
Date: \_\_\_\_\_

**Brian Rakvica**

---

**From:** Crowley, Susan [Susan.Crowley@tronox.com]  
**Sent:** Thursday, February 22, 2007 2:53 PM  
**To:** William Frey  
**Cc:** Todd Croft; Bailey, Keith; Brian Rakvica  
**Subject:** Modification Pages for 1986 CO and 2005 AOC  
**Attachments:** 20070222144113118.pdf

Bill,

Please find attached an electronic version of a document that should be delivered to your office tomorrow morning, by FedEx. In it you will find the two fully executed copies of the 1986 chromium Consent Order modification pages ... as well as two partially executed copies of the 2005 perchlorate Administrative Order on Consent. We'll need one copy of each back as the signatory process is complete. Thank you very much for your consideration of our request.

<<20070222144113118.pdf>>

Susan Crowley  
[susan.crowley@tronox.com](mailto:susan.crowley@tronox.com)

**Tronox LLC**

PO Box 55  
Henderson, NV 89009  
(702) 651-2234 office  
(702) 592-7727 cell  
(405) 302-4607 fax (note new fax number)

*If you are not the intended recipient of this e-mail message, any use, distribution or copying of the message is prohibited. Please let me know by return e-mail if you received this message by mistake, then delete the e-mail message. Thank you.*

**Tronox Confidentiality Notice!**

If you are not the intended recipient of this e-mail message, any use, distribution or copying of the message is prohibited.

Please let me know immediately by return e-mail if you have received this message by mistake, then delete the e-mail message.

Thank you.

2/22/2007



# TRONOX

Susan Crowley  
Staff Environmental Specialist

(702) 651-2234  
Fax (405) 302-4607  
susan.crowley@tronox.com

February 22, 2007

William Frey  
Senior Deputy Attorney General  
Nevada Department of Justice  
100 N. Carson Street  
Carson City, NV 89701-4717

Dear Mr. <sup>Bill</sup>Frey:

Subject: Request for Time Extension on Combined Tronox Remedial Project Reports

Earlier this year, Tronox LLC (Tronox) requested revision of two documents; the 1986 chromium remediation Consent Order between Tronox (formerly Kerr- McGee Chemical LLC) and Nevada Division of Environmental Protection (NDEP), and the April 2005 perchlorate remediation Administrative Order on Consent (AOC). The requested revision of each would reset the date for remedial performance report submittal to 60 days following a covered period.

Attached are the fully executed copies (2) of the 1986 Consent Order modification page and the partially executed copies (2) of the 2005 AOC modification page.

Please forward one fully executed modification page for each document to us, once the signatory process is complete. Thank you very much for your consideration of our request. Please feel free to contact me at (702) 651-2234 if you have any questions. Thank you.

Sincerely,



Susan Crowley, CEM 1428 exp 3-8-07  
Staff Environmental Specialist

Overnight Mail

Cc: Keith Bailey  
Todd Croft  
Elizabeth Hurst

Tronox LLC

8000 West Lake Mead Parkway, Henderson, Nevada 89015 • P.O. Box 55, Henderson, Nevada 89009

William Frey  
February 22, 2007  
Page 2

Ed Krish  
Brian Rakvica  
Tom Reed  
Rick Stater

**Attachment A**

**Signature Pages  
For Executing Modifications in:**

**1986 Chromium Consent Order (2each)**

**2005 Perchlorate Administrative Order on Consent (2 each)**

## Modification of 1986 Consent Order

This document modifies the consent Order, dated September 9, 1986, between the Nevada Division of Environmental Protection (Division) and Tronox LLC, (Tronox), formerly Kerr-McGee Chemical LLC. It extends the performance report due date. The modification is needed to include analytical from the last month of the reporting period as well as to harmonize and wed the formats of several performance reports, so that reports for several remedial project can be combined.

The following language will be added as a separate paragraph at the end of paragraph 12 of Consent Order:

"Performance reports will be submitted to NDEP on a semi-annual basis within 60 days of June 30<sup>th</sup> and December 31<sup>st</sup> each year."

All terms and conditions of the Consent Order shall remain in full force and effect.

In witness whereof, the Division and Tronox execute this modification by their duly authorized representatives on this 28<sup>th</sup> day of January, 2007.

THE STATE OF NEVADA DIVISION OF  
ENVIRONMENTAL PROTECTION

By: Leo Drozdoff  
Name: Leo Drozdoff  
Title: Administrator  
Date: 1/19/07

TRONOX LLC

By: Patrick S. Corbett  
Name: Patrick S. Corbett  
Title: Vice President  
Date: 2/5/07

Approved as to form

By: William J. Frey  
Name: William J. Frey  
Title: Senior Deputy Attorney General  
Date: 1-19-07

## Modification of 1986 Consent Order

This document modifies the consent Order, dated September 9, 1986, between the Nevada Division of Environmental Protection (Division) and Tronox LLC, (Tronox), formerly Kerr-McGee Chemical LLC. It extends the performance report due date. The modification is needed to include analytical from the last month of the reporting period as well as to harmonize and wed the formats of several performance reports, so that reports for several remedial project can be combined.

The following language will be added as a separate paragraph at the end of paragraph 12 of Consent Order:

"Performance reports will be submitted to NDEP on a semi-annual basis within 60 days of June 30<sup>th</sup> and December 31<sup>st</sup> each year."

All terms and conditions of the Consent Order shall remain in full force and effect.

In witness whereof, the Division and Tronox execute this modification by their duly authorized representatives on this 28<sup>th</sup> day of January, 2007.

THE STATE OF NEVADA DIVISION OF  
ENVIRONMENTAL PROTECTION

TRONOX LLC

By: Leo A. Drozdoff  
Name: Leo Drozdoff  
Title: Administrator  
Date: 1/19/07

By: Patrick S. Corbett  
Name: Patrick S. Corbett  
Title: Vice President  
Date: 2/5/07

Approved as to form

By: William J. Frey  
Name: William J. Frey  
Title: Senior Deputy Attorney General  
Date: 1-19-07

## Modification of 2005 Administrative Order on Consent

This document modifies the Administrative Order on Consent, dated April 12, 2005, between the Nevada Division of Environmental Protection (Division) and Tronox LLC (Tronox LLC (Tronox), formerly known as Kerr-McGee Chemical LLC. It extends the performance report due date. The modification is needed to include analytical from the last month of the reporting period as well as to harmonize and wed the formats of several performance report, so that reports for several remedial project can be combined.

The modified AOC language is as follows:

Page 7 and 8: Section VI – 2. Quarterly Progress Reports – once Kerr-McGee begins operation of the expanded biological treatment plant, in lieu of the monthly described in Section VI.1., Kerr-McGee shall include a description of the operations of it's AP-5 decommissioning operations in the quarterly reports required by Section VI of the 2001 AOC. Such reports are due 60 days following each three month period of operation, but at it's discretion NDEP may change the reporting interval to require only semi-annual reporting.

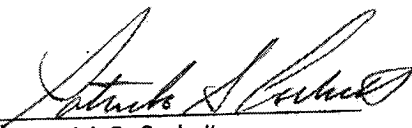
All other terms and conditions of the AOC shall remain in full force and effect.

In witness whereof, the Division and Tronox execute this modification by their duly authorized representatives on this 28<sup>th</sup> day of January, 2007.

THE STATE OF NEVADA DIVISION OF  
ENVIRONMENTAL PROTECTION

TRONOX LLC

By: \_\_\_\_\_  
Name: Leo Drozdoff  
Title: Administrator  
Date: \_\_\_\_\_

By:   
Name: Patrick S. Corbett  
Title: Vice President  
Date: 2/15/07

Approved as to form

By: \_\_\_\_\_  
Name: William Frey  
Title: Senior Deputy Attorney General  
Date: \_\_\_\_\_

## Modification of 2005 Administrative Order on Consent

This document modifies the Administrative Order on Consent, dated April 12, 2005, between the Nevada Division of Environmental Protection (Division) and Tronox LLC (Tronox LLC (Tronox), formerly known as Kerr-McGee Chemical LLC. It extends the performance report due date. The modification is needed to include analytical from the last month of the reporting period as well as to harmonize and wed the formats of several performance report, so that reports for several remedial project can be combined.

The modified AOC language is as follows:

Page 7 and 8: Section VI – 2. Quarterly Progress Reports – once Kerr-McGee begins operation of the expanded biological treatment plant, in lieu of the monthly described in Section VI.1., Kerr-McGee shall include a description of the operations of it's AP-5 decommissioning operations in the quarterly reports required by Section VI of the 2001 AOC. Such reports are due 60 days following each three month period of operation, but at it's discretion NDEP may change the reporting interval to require only semi-annual reporting.


All other terms and conditions of the AOC shall remain in full force and effect.

In witness whereof, the Division and Tronox execute this modification by their duly authorized representatives on this 28<sup>th</sup> day of January, 2007.

THE STATE OF NEVADA DIVISION OF  
ENVIRONMENTAL PROTECTION

TRONOX LLC

By: \_\_\_\_\_  
Name: Leo Drozdoff  
Title: Administrator  
Date: \_\_\_\_\_

By:   
Name: Patrick S. Corbett  
Title: Vice President  
Date: 2/15/07

Approved as to form

By: \_\_\_\_\_  
Name: William Frey  
Title: Senior Deputy Attorney General  
Date: \_\_\_\_\_



**KERR-McGEE CHEMICAL LLC**

POST OFFICE BOX 55 - HENDERSON, NEVADA 89009

RECEIVED  
ENVIRONMENTAL  
PROTECTION

SEP 24 98

September 22, 1998

Mr. Tom Whalen  
Nevada Division of Environmental Protection  
333 West Nye Lane  
Carson City, NV 89706-0851

Dear Mr. Whalen:

Subject: Consent Order

Attached is a copy of the Kerr-McGee Consent Order for hexavalent chromium remediation, signed in 1986. This Consent Order has been supplemented by a UIC permit issued by Nevada Division of Environmental Protection. The UIC Permit and the body of the Consent Order were previously faxed to you.

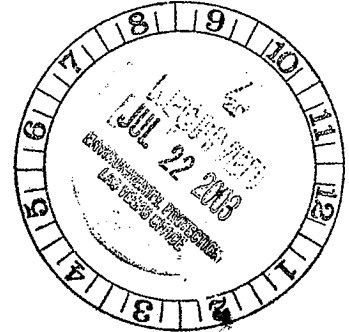
Please call me at (702) 651-2234 if you have any questions?

Sincerely,

Susan M. Crowley  
Staff Environmental Specialist

Attachment

cc: PSCorbett - w/o attachment  
RANapier - w/o attachment





This Consent Order is made and entered into the 9th day of September, 1986, by and between the State of Nevada, Department of Conservation and Natural Resources, Division of Environmental Protection (hereinafter "Department"), and Kerr McGee Chemical Corporation, a corporation headquartered in the State of Oklahoma (hereinafter "KMCC").

WHEREAS, since December, 1983, the Department has directed KMCC to investigate and to remove chromium contaminants from the groundwater at KMCC's Henderson, Nevada plant facilities; the contaminants which are the subject of this Consent Order are at the Henderson facilities shown on the map attached as Appendix "A" and hereinafter described as the "Site"; and

WHEREAS, KMCC and the Department have agreed to enter into this Consent Order in order to effectuate a mutually satisfactory and prompt cleanup of the chromium contaminants at the Site, pursuant to the timetable set forth in Appendix B, without admitting or denying any liability or factual allegation with respect to any matters arising out of or relating to the Site, and without any part of the Order constituting an admission of liability or fault with respect to any allegation or matter which could be used against KMCC in any legal, equitable, or administrative proceeding.

NOW, THEREFORE, in consideration of, and in exchange for mutual undertakings and covenants herein, and intending to be legally bound hereby, the Department and KMCC agree as follows:

1. This Consent Order shall apply to and be binding upon the parties named herein, their successors and assigns in interest and all persons, firms, subsidiaries, corporations, and government entities acting for or on behalf

of the parties named herein. Any transfer of property or corporate interests does not operate to terminate KMCC responsibilities under this Order, except to the extent that the Department agrees to such termination in writing.

2. The undersigned representative of the parties named herein certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Order and to execute and to legally bind such party to this Consent Order.
3. The corrective action program required by this Order is limited to the treatment of chromium contaminants.
4. KMCC has undertaken and completed a hydrogeologic investigation to determine the location and design of a groundwater intercept system. Hydrogeologic investigative reports for the design and construction of the intercept system shall be submitted to the Department 30 days after the execution of this Order. These reports will include information on any rework of existing wells, sampling and analysis of specific wells, geologic data, hydrologic data, water quality data and results. These reports will also include a description of the intercept system alternatives which were considered, and the technical basis on which the recommended intercept system was selected and the other alternatives rejected.
5. KMCC shall design, construct and operate a groundwater intercept system consistent with the process design set forth in Appendix C which is hereby incorporated into this Order. The final design shall be approved by the Department prior to construction. The intercept system contained in Appendix C is described as a line of pumping wells, and the location of the intercept system is set forth in Appendix A which is hereby incorporated

into this Order. The intercept system project shall be initiated and completed no later than 30 days after execution of this Order pursuant to the timetable set forth in Appendix B which is hereby incorporated into this Order. Written progress reports on the design and construction shall be submitted at the end of the first calendar quarter after execution of this Order, and quarterly thereafter.

6. To monitor the effectiveness of the intercept system, KMCC shall install approximately ten water level wells within the area of the trough of depression created by operation of the intercept system. Locations of these water level wells are subject to approval by the Department and shall be as shown on the map attached as Appendix D which is hereby incorporated into this Order. Monthly manual readings will be taken from the water level wells beginning two months prior to startup of the intercept system. After one year KMCC may submit data which supports any reduction in frequency of monitoring to the Department for review and approval. Based on this review, the Department may approve a reduction in the required frequency of monitoring. Based upon the water level readings, a graphical representation will be prepared monthly showing the overlapping cones of depression, which will be proof of the effectiveness of the intercept system. One of the water level monitoring wells in the intercept area will be equipped with a level recorder which will be operated continuously. A second, continuously monitoring water level recorder will be placed in one monitoring well, down-gradient from the recharge trenches. The manual monthly monitoring, when compared to the continuous recording, will demonstrate the dependability of the continuous recorders for water level monitoring. After one year KMCC may submit data supporting the discontinuance of the manual monitoring. Notwithstanding the above, and upon approval by the

Department, KMCC shall select and monitor, semi-annually, certain wells in order to keep the area groundwater level map up-to-date. The wells described in subparagraph 17 must be sampled and analyzed quarterly for chromium to monitor groundwater quality.

7. If the monitoring results required in paragraph 6, occurring six (6) months after initial operation of the intercept system, demonstrate that the system is not effectively collecting the intended groundwater plume, the Department may require KMCC to implement the Contingency Plan set forth in paragraph 8.
8. KMCC shall prepare and submit to the Department for review and approval, an Intercept System Contingency Plan, pursuant to the schedule set forth in Appendix B. This Plan will set forth additional measures to be implemented to improve and update the installed Intercept System to correct, to the extent possible, the deficiencies identified. The Plan will be set forth as Appendix E and will be incorporated into this Order.
9. KMCC has undertaken a program to study various treatment alternatives. A report discussing the treatment alternatives which were considered and the basis on which the selection was made will be submitted to the Department no later than 30 days after execution of this Order.
10. KMCC shall install a chromium treatment system consistent with the process design set forth in Appendix F which is hereby incorporated into this Order. Such system shall be capable of achieving the Discharge Limit set forth in paragraph 11, below, pursuant to the timetable set forth in Appendix B. The final design of the treatment system shall be approved by the Department prior to construction. Written progress reports on the design and construction shall be submitted at the end of the first calendar quarter following execution of the Order and quarterly thereafter.

11. The Discharge Limit to be achieved is: Total Chromium  $\leq 1.7$  mg/l, Hexivalent Chromium  $\leq 0.05$  mg/l as a monthly average; Total Chromium  $\leq 3.4$  mg/l, Hexivalent Chromium  $\leq 0.1$  mg/l as a maximum single value on composite samples.
12. KMCC shall sample and analyze the end-of-pipe effluent from the treatment system, for the compound set forth in paragraph 11, in accordance with the procedures and protocols set forth in Appendix G which is hereby incorporated into this Order and are subject to the approval of the Department. Representative samples shall be taken three (3) times per week, but no more frequently than every other day. These samples shall be composited and analyzed once per week. Upon a satisfactory showing to the Department, KMCC may reduce the frequency of sampling and analysis.
13. The Discharge Limit established above in subparagraph 11 will be applicable no later than two (2) months after startup and initial operation of the treatment system. A violation of the Discharge Limit occurs when the value for chromium exceeds the established Discharge Limit.
14. KMCC shall prepare and submit a Treatment System Contingency Plan, pursuant to the schedule set forth in Appendix B. This Plan will set forth additional measures to be implemented to improve and upgrade the installed Treatment System to correct, to the extent possible, any failure of the Treatment System to meet the Discharge Limit. The Plan will be set forth in Appendix H which will be incorporated into this Order. Within 10 days after two consecutive monthly violations, KMCC shall submit for Department review and approval, the specific contingency plan and schedule of implementation for that plan. Upon approval, the plan shall be implemented. The Department agrees to waive the imposition of stipulated penalties as provided for in paragraph 24 during the review period and implementation of the

contingency plan so long as KMCC shows that the failure to meet the Discharge Limit was not due to its negligence.

15. KMCC has undertaken a program to study various treated solution disposal system alternatives. Within 45 days following execution of this Order, KMCC shall submit to the Department a report which will include a description of the disposal system alternatives which were considered, and the technical basis on which the selected disposal system was selected and the other alternatives rejected.
16. KMCC shall design, construct and operate an underground disposal system for treated groundwater consistent with the process design set forth in Appendix I which is hereby incorporated into this Order. The final design of the disposal system shall be approved by the Department prior to construction. The location of the underground disposal is set forth in Appendix A. This project shall be completed pursuant to the timetable set forth in Appendix B. Written progress reports on the design and construction shall be submitted at the end of the first calendar quarter following execution of the Order and quarterly thereafter.
17. KMCC shall provide monitoring wells at locations set forth in Appendix J which will be incorporated into this Order to measure quarterly the impact of the underground disposal system on groundwater levels. The Department and KMCC agree that any increase in the groundwater level, attributable to underground disposal of KMCC-treated water, that causes surfacing, wet spots, or degrades soil characteristics to threaten man-made improvements, shall require KMCC to implement the Disposal System Contingency Plan set forth in paragraph 18, below.

18. KMCC shall develop and submit to the Department a Disposal System Contingency Plan, pursuant to the schedule set forth in Appendix B. This Plan will set forth additional measures to be implemented to improve and upgrade the installed Disposal System, to correct the deficiencies identified in paragraph 17, above. The Plan will be set forth in Appendix J.
19. The chromium removed at the treatment facility shall be properly managed in accordance with applicable State or Federal regulations. The Treatment System and the Underground Disposal System may require Resource Conservation and Recovery Act (RCRA) permits. The Underground Disposal System may also require an Underground Injection Control (UIC) and/or a State groundwater discharge permit. If such permits are required, applications shall be filed by KMCC in sufficient time so as not to unreasonably delay the time for commencement of corrective action. The Department will cooperate with KMCC in obtaining any necessary permits for the Treatment or Underground Disposal Systems.
20. KMCC shall implement the safety plan set forth in Appendix K which is hereby incorporated into this Order.
21. The Department reserves the right to sample at its discretion, specific wells, influent, effluent, etc., for the purpose of oversight, quality assurance, and coordination with other investigations at the BMI Complex.
22. Subject to paragraph 27, below, KMCC may cease intercept, treatment and disposal activities when the concentration in the influent to the treatment system, of the compound having the Discharge Limit, does not exceed its Discharge Limit for a continuous period of three (3) months, based upon samples collected and analyzed pursuant to their respective sampling and analytical requirements. KMCC shall give notice to the Department when this

this Order is not met; \$1,000 per day for each day that any of the construction, treatment or disposal deadlines in Appendix B are not met; \$1,000 for each week the Discharge Limit is violated. Before invoking this provision, the Department shall issue an Order to Show Cause why KMCC is not liable for any stipulated penalty. Upon such issuance, KMCC shall have fifteen (15) days to show that failure was due to circumstances beyond KMCC's reasonable control. The Department and KMCC agree that these stipulated penalties are the sole and exclusive civil monetary penalty remedy of the Department for the violations covered by this paragraph 24.

25. The Department has determined that KMCC's compliance with the terms and conditions of this Consent Order constitutes full satisfaction of any and all claims the Department has against KMCC with respect to the chromium constituents identified in paragraph 11 pursuant to the Nevada Water Pollution Control Act and regulations, and the Nevada Hazardous Waste Disposal Act and regulations. Subject to KMCC compliance, the Department and its delegate agencies release KMCC from liability under the aforementioned statutes for chromium constituents and covenants not to sue or take any action against KMCC as to any civil liabilities or claims under these State statutes arising out of the presence of the inorganic identified in paragraph 11. This release specifically does not apply to any compound not identified in paragraph 11 and does not apply to the element identified in paragraph 11 when (a) the migration off-site occurs through a different channel than that being addressed by the intercept system provided for in this Order or (b) migration off-site occurred prior to the operation of the treatment system provided for in the Order.

26. No provision of this Order restricts KMCC's rights to administrative and judicial review pursuant to the Nevada Administrative Procedures Act, NRS



cessation will occur.

23. Any failure by KMCC to comply with the terms and conditions set forth in the Consent Order which is demonstrated by KMCC to be beyond KMCC's reasonable control, including obtaining of necessary local, State and Federal permits, obtaining access to property belonging to others, acts of God, fire, flood, windstorm, explosion, riot, war, sabotage and cause or causes beyond the reasonable control of KMCC, shall not be grounds for a finding of violation of this Consent Order and the time for performance herein shall be extended for the time period of such delay. If such circumstances prevent performance, such performance shall be excused unless and until circumstances so change that the performance is no longer prevented. Prompt notice of any delay shall be given by KMCC to the Department. As soon as possible after giving such notice, but in no event later than fifteen (15) days after becoming aware of such delay or prevention or anticipated delay or prevention, KMCC shall submit a written statement to the Department which fully describes the anticipated length and cause of such delay or prevention, the actions KMCC has taken and/or proposes to take to avoid or mitigate the impact of such a prevention and the proposed schedules for such action. KMCC shall use their best efforts to anticipate and minimize or avoid any delay or prevention of timely and complete performance of their obligations pursuant to this Consent Order. Increased costs or expenses associated with the implementation of actions called for by this Consent Order shall not, in any event, be a basis for changes in this Consent Order or extensions of time under this paragraph.

24. Upon failure by KMCC, except as provided in paragraph 23 above, to perform as set forth in this Order, KMCC shall pay a stipulated civil penalty of \$100 per day for each day that a progress reporting deadline as listed in

233B.121 et. seq., of any Departmental final action or determination under this Order.

27. KMCC shall monitor wells within the zone of the intercept system, acceptable to the Department, for at least three (3) years after completion of intercept, treatment and disposal, to ensure that the cleanup has been completed as agreed and that the level in the wells remain below the level set forth in paragraph 11 above. Samples shall be taken and analyzed, quarterly, for the element having the Discharge Limit. If during the three-year monitoring period the limit is exceeded, KMCC shall again begin treatment. Treatment will continue until the limit is again achieved, and the wells will be monitored for the three-year period as specified above.
28. By agreeing to this Order, KMCC hereby unconditionally guarantees performance of its obligations under this Order. Consistent with Federal regulations, KMCC will affirm their financial capability to fulfill their obligation under this Order on an annual basis, if requested by the Department, using the most recent certified financial statements. If KMCC is no longer able to demonstrate financial capability by use of the Financial Test, KMCC agrees to demonstrate financial capability by use of one of the alternative mechanisms specified in the Federal regulations adopted pursuant to the Resource Conservation and Recovery Act (RCRA), such as a surety bond, letter of credit or trust fund, no later than sixty (60) days after a demand by the Department to so demonstrate.
29. Within thirty (30) days after the issuance of this Order, KMCC agrees to pay into the Nevada Fund for the Management of Hazardous Waste created by NRS 459.530, \$10,000 for the future monitoring and other management activities associated with the site by the Department.

30. On or before the effective date of this Order, the Department and KMCC shall each designate a coordinator to administer this Order on behalf of the designator. KMCC shall record a copy of this Order with the Recorder of Clark County, Nevada.
31. This Consent Order supercedes and nullifies all other State Orders issued to KMCC regarding chromium contamination of the groundwater.
32. The Department shall not be liable for any injury or damages to persons or property resulting from KMCC's acts or omissions under this Order. Nor shall KMCC hold the Department out as a party to any contract entered into by KMCC to carry out this Order.

IN WITNESS WHEREOF, the Department and KMCC execute this Consent Order by their duly authorized representatives on this 9th day of September, 1986.

THE STATE OF NEVADA  
DEPARTMENT OF CONSERVATION AND  
NATURAL RESOURCES  
DIVISION OF ENVIRONMENTAL  
PROTECTION

By

L.H. Dodgion  
Name: L.H. Dodgion

Title: Administrator

KERR-MCGEE CHEMICAL CORPORATION

By

Rolfe B. Chase, Jr.  
Name: Rolfe B. Chase, Jr.

Title: Plant Manager

## APPENDIX B

### SCHEDULE OF IMPLEMENTATION

The following presents a schedule of implementation for the proposed groundwater mitigation program at the Henderson Facility with time for completion after approval by the Nevada DEP:

<u>Action Taken</u>	<u>Plan Approval</u>
1. Install four 6" interceptor wells along the intercept line and conduct pumping tests.	1 mo.
2. Construct a test recharge trench and conduct a short-term reinjection/infiltration test.	3 mo.
3. Complete further treatability studies on removal of chromium from the groundwater.	4 mo.
4. Drill additional geological borings along the intercept line to define the subsurface features of the Muddy Creek Formation.	4 mo.
5. Install other interceptor wells along the intercept line (the number of additional wells determined by 1 above).	7 mo.
6. Submit to NDEP - Appendix E, Intercept System Contingency Plan	7 mo.
7. Install upgradient and downgradient monitoring wells and collect initial or background samples.	7 mo.
8. Complete construction of treatment facility.	10 mo.
9. Submit to NDEP - Appendix H, Treatment System Contingency Plan.	11 mo.
10. Complete construction of recharge trenches.	11 mo.
11. Submit to NDEP - Appendix J, Disposal System Contingency Plan.	12 mo.
12. Install permanent pump in interceptor wells and install all necessary piping.	12 mo.
13. Start recovery program.*	12 mo.
14. Interim Report on recovery program to Nevada Department of Environmental Protection.	13 mo.

\*This assumes no RCRA or UIC permit is required. If a permit is required, the recovery program start will be delayed until such permit is received.

## Appendix List

### Appendix A - Map of Site

Plate 2: "Map Showing Chromium Distribution in the Near-Surface Aquifer in June/July, 1985, at the Henderson Facility," from Groundwater Mitigation Program, KMCC, Henderson, Nevada Facility Report dated October, 1985.

### Appendix B - Schedule

### Appendix C - Intercept System

Intercept System design described in Groundwater Mitigation Program, KMCC, Henderson Facility Report dated, 1985.

System design and additional data to be submitted 30 days after execution of the Consent Order.

### Appendix D - Map of Water Level Monitoring Wells

To be submitted 30 days after execution of the Consent Order.

### Appendix E - Intercept System Contingency Plan

To be submitted 7 months after execution of the Consent Order.

### Appendix F - Chromium Treatment System Process Design

The chromium treatment system process design shall be submitted for review and approval prior to construction of the treatment system.

### Appendix G - Sampling and Analysis Procedures and Protocols

The sampling and analysis procedures and protocols shall be submitted for review and approval by 45 days after execution of the Consent Order.

Appendix List  
Page -2-

Appendix H - Treatment System Contingency Plan

The treatment system contingency plan shall be submitted within 11 months of the execution of the Consent Order.

Appendix I - Underground Disposal System

Final design of the underground system shall be submitted for review and approval within 45 days after the execution of the Consent Order.

Appendix J - Monitoring Wells and Contingency Plan for Disposal System

The contingency plan for the disposal system shall be submitted within 12 months after the execution of the Consent Order.

Appendix K - Safety Plan

The safety plan shall be submitted on completion of plant construction.

APPENDIX A

HENDERSON FACILITY SITE:

MAP SHOWING THE CHROMIUM DISTRIBUTION  
IN THE NEAR-SURFACE AQUIFER (JUNE/JULY, 1985)

### Chromium Distribution in Groundwater

The enclosed map (Plate 1) shows the chromium distribution in the near-surface water-bearing strata for June/July, 1985, at the Kerr-McGee Chemical Corporation's Henderson Facility. Also shown on this map is the area of the interceptor well field and the four interceptor wells and seven water-level monitoring wells installed in September, 1986. These eleven wells were installed in order to evaluate the hydraulic properties of the near-surface water-bearing strata in the groundwater intercept location. Additional water-quality, water-level, and interceptor wells are planned in the groundwater interceptor and recharge areas.