December 10, 1984

Mr. Rick Statter Kerr-McGee Chemical Company P.O. Box 55 Henderson, Nevada 89015

Dear Mr. Statter:

On November 29, 1984, a hazardous waste investigation was conducted at your facility by the Nevada Division of Environmental Protection. The information was gathered in accordance with Section 444.764 of the Nevada Revised Statutes (NRS), and a copy of the investigation report is enclosed for your information.

If you have any questions concerning this matter, please contact me at (702) 885-4670.

Sincerely,

Alene Coulson Environmental Management Specialist Waste Management Section

de Enclosure

cc: Gary Lance, U.S. EPA, Region IX

NOV - 8 1984

November 7, 1984

ENVIRONMENTAL PROTECTION

Ms. Alene Coulson
Environmental Specialist
Waste Management Section
Division of Environmental Protection
Nevada Department of Conservation
and Natural Resources
Capitol Complex
Carson City, Nevada 89710

Dear Ms. Coulson:

This letter is to confirm a telephone conversation on November 5, 1984 between Mr. Doug Martin, NDEP, and Mr. R. Stater, Kerr-McGee Chemical Corporation, regarding the November 29, 1984 hazardous waste inspection scheduled for the Henderson facility of Kerr-McGee Chemical Corporation. As Mr. Stater mentioned on the telephone, there are no known conflicts at this time with the date selected.

The person representing the Kerr-McGee Chemical Corporation facility will be Mr. R. Stater, P. O. Box 55, Henderson, Nevada, 89015, telephone 702/565-8901.

Very truly yours,

R. B. Chase, Jr.

Morp Bluen, h.

Plant Manager

RBC/js

November 1, 1984

Mr. Rick Statter
Kerr-McGee Chemical Corporation
P.O. Box 55
Henderson, Nevada 89015

Dear Mr. Statter:

The Nevada Division of Environmental Protection (NDEP) has assumed responsibility from the U.S. Environmental Protection Agency (U.S. EPA) for enforcing the hazardous waste program as authorized in the Resource Conservation and Recovery Act of 1976 (RCRA), Section 3006.

The U.S. EPA provided NDEP with information which indicates that your facility is a treatment, storage, or disposal facility for hazardous waste. A hazardous waste investigation of your facility is scheduled for November 29, 1984, at 9:00 a.m.

Within fifteen (15) days of receipt of this letter, please provide NDEP, Waste Management Section, with the name, address, and telephone number of the individual who will be representing your facility during the investigation.

If you have any questions concerning this letter, please contact me at (702) 885-4670.

Sincerely,

Alene Coulson Environmental Management Specialist Waste Management Section

October 9, 1984

CERTIFIED MAIL #P22-1673131 RETURN RECKIPT REQUESTED

Rolfe B. Chase, Jr.
Plant Manager
Kerr-McGee Chemical Corporation
P.O. Box 55
Henderson, Nevada 89015

Dear Mr. Chase:

The Division has reviewed your submittal of June 13, 1984, which comprised the revision to the closure/post-closure plan for the hazard-ous waste landfill at the Henderson facility. The plan has been determined to be deficient with respect to the following items:

- (1) No description of the groundwater monitoring plan was included in the closure or post-closure plan;
- (2) No description of the types of analyses required during closure, i.e., from the date that final wastes were received until closure is certified by the professional engineer was provided;
- (3) No description of the maintenance program to ensure that the groundwater monitoring system remains functional during the post-closure care period was provided; and
- (4) No estimate of the number of inspections to be performed by the professional engineer for certification of closure was provided.

It should also be noted that the native soil from beneath Pond S-1 used for the upper fill is considered a hazardous waste, as chromium values ranged from 7.7 to 14.4 mg/kg. As was indicated in the Division's letter to Warr-Wagge of August 17, 1084, chromium values of 5 ppm or greater are an indication of a hazardous waste.

The Division hereby requests that Kerr-McGee respond to the aforementioned deficiencies on or before October 26, 1984, and submit the response in such a way as to be incorporated in the closure plan for the hazardous waste landfill.

Rolfe B. Chase, Jr. Kerr-McGee Chemical Corporation October 9, 1984 Page -2-

Should you have any questions regarding this matter, please contact me.

Sincerely,

TH

Thomas J. Fronapfel, P.E. Environmental Engineer Waste Management Section

de

cc: Gary Lance, U.S. EPA Region IX (T-2-1)

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RECEIPT FOR CERTIFIED MAIL

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(Limit each comment to 80 characters. Up to 99 comments are possible.)



RECEIVED

OCT 9 - 1984

PROTECTION

October 4, 1984

Certified Mail No. P 331 934 012

Mr. H. LaVerne Rosse State of Nevada Division of Environmental Protection Capitol Complex 201 South Fall Street Carson City, NV 89710

Re: RCRA Groundwater Monitoring

Dear Mr. Rosse:

Kerr-McGee Chemical Corporation's Henderson facility conducted semi-annual RCRA groundwater monitoring as required in 40 CFR 265.92(d)(1) in June, 1984. Analytical results were compared with baseline values as required under 40 CFR 265.93(c).

Statistically significant increases were observed for the follow- ing parameters in the indicated wells.

Surface Impoundments

M-1 (upgradient) - specific conductivity
M-2 - pH
M-9 - specific conductivity and TOC

Landfill

M-5 (upgradient) - pH M-7 - pH H-28 - pH

Additional groundwater samples were collected and analyzed as required under 40 CFR 265.93(c)(2). Statistical comparison performed on these analytical results indicated the following increases:

Surface Impoundments

M-1 (upgradient) - specific conductivity M-2 - pH

M-9 - specific conductivity

Mr. H. LaVerne Rosse Page 2 October 4, 1984

Landfill

M-5 (upgradient) - pH H-28 - pH

Analytical results, statisticals comparisons, resample results, and water levels are attached.

The surface impoundment downgradient well M-9 analyses indicated a statistically significant increase in specific conductivity when compared to the upgradient well M-1. It has been demonstrated that the specific conductivity of groundwater in this area varies considerably. Furthermore, the baseline values for well M-9 range from 15,000 to 40,000 $\mu\,mhos$. The values for M-9 for this sample period fall within its baseline range. The pH for downgradient well M-2 indicates a statistically significant increase when compared to well M-1. However, the pH value for M-2, taken at the site, would indicate no significant increase was present. Well M-9 TOC analysis showed a statistically significant increase, compared to well M-1, on initial sampling. However, on resampling the value was within statistical limits. The landfill downgradient well H-28 analyses indicate statistically significant increase in pH when compared to the upgradient well M-5 analyses. The initial pH value of 7.36 is within the 7.0 to 7.5 pH range of the H-28 baseline values. No other parameters indicate a statistically significant increase. As noted in the analytical table attached, there is no chromium present which is the element of concern, since that is the item most representative of the waste contained in the landfill. As mentioned in the previous semiannual monitoring report, the water levels have continued to drop, which is most likely the result of the Stauffer groundwater cleanup program in the area. Well M-6 was indeed found to be dry at the time of sampling.

Based on the above, it appears that the regulated units have not affected groundwater quality. KMCC will continue with RCRA groundwater monitoring, as specified in 40 CFR 265.92(d).

If there are any questions, please contact me or R. Stater at 565-8901.

Sincerely,

KERR-McGEE, CHEMICAL CORPORATION

K. B. Chase, Jr. Plant Manager

RBC: jc

cc: Bill Wilson, US EPA, Region IX Certified Mail No. P 331 934 011

KERR-McGEE CHEMICAL CORPORATION

HENDERSON FACILITY

GROUNDWATER QUALITY PARAMETERS*

Surface	Impoundments
---------	--------------

			Repli	.cates		<u>Mean</u>	t Value
M-1 Up	pH SpCd TOC TOH	7.34 16,400 9.3 5.27	7.21 16,400 4.9 5.50	7.26 16,400 10.5 5.00	7.48 16,400 10.7 5.20	7.32 16,400 8.9 5.24	0.896 22.825 0.650 3.626
M-2	pH SpCd TOC TOH	7.58 10,340 3.35 2.24	7.72 10,320 2.78 2.50	7.68 10,290 2.78 2.30	7.72 10,290 2.76 2.00	7.68 10,310 2.92 2.26	3.113 7.423 2.029 3.651
M-8	pH SpCd TOC TOH	7.42 7,850 12.2 0.51	7.56 7,830 13.7 0.44	13.9	7.49 7,800 7.7 0.40	7.49 7,825 11.9 0.47	1.940 19.765 0.043 3.666
M-9	pH SpCd TOC TOH	7.33 24,500 20.7 2.97	24.8	7.49 24,500 25.4 2.80	21.5		1.279 62.839 2.621 3.646
Backgroun	d M-1 pH SpCd TOC TOH		Values res replicates (4 Truesda	per quarter)		7.20 11,805 11.7 436	- - -
Landfill							
М-5 Up	pH SpCd TOC TOH	7.23 10,460 107.3 45.20	7.26 10,450 103.7 44.30	7.36 10,420 105.1 45.90	7.19 10,420 104.9 45.10		5.331 0.302 1.984 0.332
M-7	pH SPCd TOC TOH	6.76 9,570 40.1 9.59	7.05 9,550 36.1 9.35	6.83 9,540 40.2 9.40	6.77 9,530 39.9 10.00	6.85 9,550 39.1 9.59	2.938 8.912 1.074 4.919
н-28	pH SpCd TOC TOH	7.33 8,210 21.8 12.01	7.28 8,190 21.8 11.50	7.48 8,190 22.3 12.00	7.34 8,170 22.6 11.80	7.36 8,190 22.1 11.83	5.885 22.045 1.857 3.646
M-6			DI	RY WELL			
Backgroun	d M-5 pH SpCd TOC TOH					6.34 10,469 62.3 47.7	

Units - pH, units; SpCd $\mu mhos,$ TOC and TOH, mg/l

Sample dates: June 26, 27, 28, 1984

.030

WATER ANALYSIS LABORATORY REPORT DATE: 12-JUL-84 DESERT RESEARCH INSTITUTE FILE NAME: 8506KM. TBL * CL SAMPLE NA S04 FE MN CR PHEN DATE : POINT * MG/L MG/L MG/L MG/L MG/L MG/L MG/L 8506 : M-1 26-JUN-84: * 2130 1430 1200 .02 . 19 17 . 006 8507 :M-8 26-JUN-84: * 1010 744 1010 . 23 .02 5.4 4.003 8522 :M-2 27-JUN-84: * 1580 2030 819 <. ⊘1 .08 3.9 <.003 8523 :M-5 27-JUN-84: 2470 124切 2190 32 1.1 . 274 .624 8524 : M-7 27-JUN-84: 1980 1380 2360 128 2.9 <. ⊘2 .135 8525 :M-9 27-JUN-84: 4070 4730 <. ⊘1 1710 _ 1 34 <. ØØ3 8526 : 4-28 28-JUN-84: * 1880 1060 154回 उ.⊘ 1.7 く. ②己

KERR-McGEE CHEMICAL CORPORATION HENDERSON FACILITY GROUNDWATER QUALITY PARAMETERS (RESAMPLE DATA)

Surface Impoundments

			Repli		<u>Mean</u>	t value	
M-1 (up)	SpCd	17,200	17,200	17,300	17,200	17,200	26.88
M-2	рН	7.71	7.76	7.80	7.80	7.77	3.702
M-9	SpCd TOC	25,400 12.9	25,200 10.5	25,300 10.2	25,400 13.4	25,300 11.75	66.774 0.140
Landfill							
M-5 (up)	рН	7.13	7.25	7.49	7.41	7.32	5.517
M-7	рН	6.17	6.09	6.19	6.16	6.15	1.085
H-28	рН	7.61	7.55	7.73	7.75	7.66	7.622

Units - pH, units; SpCd, umhos; TOC, mg/l

Sample dates: August 20 and 24, 1984

KERR-McGEE CHEMICAL CORPORATION

HENDERSON FACILITY

WATER LEVELS - RCRA WELLS

Surface Impoundments

	6/84	12/83
M-1 (upgradient)	1,748.11	1,749.43
M-2	1,743.74	1,744.96
M-8	1,744.20	1,745.17
M-9	1,742.99	1,744.12
Landfill		
M-5 (upgradient)	1,714.08	1,715.04
M-6	1,693.69 (dry)	1,696.00
M-7	1,699.35	1,700.50
H-28	1,694.33	1,696.50

POST OFFICE BOX 55 . HENDERSON, NEVADA 89015

September 26, 1984

Thomas J. Fronapfel, P.E. Environmental Engineer Waste Management Section Division of Environmental Protection Nevada Department of Conservation and Natural Resources Capitol Complex Carson City, NV 89710

Kerr-McGee Chemical Corporation

Henderson, Nevada Facility

ID #NVD-008290330

August 17, 1984, Response on Impoundment

Closure/Post-Closure Plan

Dear Mr. Fronapfel:

Thank you for your letter of August 17, 1984, and for granting an extension to October 1 for our reply. Your comments in this letter were very constructive, and we are following your recommendations in modifying the closure plan for S-1 and P-1 impoundments.

Closure Plan

It was very helpful to receive NDEP's definition of "how clean is clean" and learn this procedure is applicable for the closure of KMCC surface impoundments S-1 and P-1. Compliance with this procedure will make it unnecessary to take background measurements or make statistical comparisons with affected areas.

We enclose a revised closure plan for S-1 and P-1 to replace the one originally submitted to NDEP on Applie 9 1984. KMCC has performed additional sampling and analysis for chromium in soils from potentially affected areas and has reanalyzed the samples previously collected from those areas. Analysis for chromium was performed by the laboratory at Desert Research Institute. Procedures used are specified in 40CFR 261.24. Levels of chromium detected were below the 5 mg/l standard. Therefore, KMCC concludes that the cleanup of S-1has been completed in compliance with NDEP standards.

Thomas J. Fronapfel, P.E. Page 2 September 26, 1984

We are also glad to know the portion of the closure plan which covers the P-1 impoundment appears adequate to the NDEP. We also will follow the foregoing procedures for sampling and analyzing soil beneath P-1 for chromium and will remove and dispose of offsite any contaminated material containing 5 mg/l total chromium or above, as determined in accordance with 40CFR 261.24 specifications.

We believe the above comments and the attached changes in the impoundment closure plan respond to comments (1), (2), (3), and (5) on pages 1 and 2 of your letter and items (1) and (2) on page 2.

Our revised closure plan also addresses the potential sources of contamination. As discussed later in this letter, KMCC/believes chromium contamination is the result of losses from processes and not from the impoundments.

Chromium Contamination

You suggested in item (4), page 1, of your letter that KMCC give some thought to routes it might take to address the issue of chromium contamination at the Henderson facility. We appreciate your concern, and in reply we have briefly summarized the present program and progress and our general plans for further work as follows:

- ° NDEP is aware of the Desert Research Institute (DRI) studies several years ago identifying chromium contamination in groundwater in the Muddy Creek formation. The Muddy Creek formation lies generally north-northwest at depths up to 40 feet or greater beneath the KMCC Henderson facility.
- Kerr-McGee installed monitoring wells around its HW surface impoundments and landfill in compliance with RCRA requirements. These wells penetrated down into the Muddy Creek, and groundwater samples indicated chromium contamination of the aquifer.
- o In March, 1983, ERTEC, Rocky Mountain, Inc., a ground-water consultant retained by US EPA, conducted a site review of KMCC's groundwater-monitoring program at Henderson.
- On December 5, 1983, representatives of KMCC met with NDEP's Mr. LaVerne Rosse and his staff in Carson City,



Thomas J. Fronapfel, P.E. Page 3
September 26, 1984

Nevada, and discussed our ongoing groundwater-monitoring program. This program was summarized in a letter to Mr. Rosse dated December 7, 1983 (Certified #P331934035) with attached maps showing locations of the existing monitor wells. At the meeting, both NDEP and KMCC agreed that groundwater-monitoring data did not indicate any hazardous waste constituents had migrated from the surface impoundments to the groundwater. The source of chromium was identified as seepage of process water from the basements of process cell house Units 4 and 5 considerably south and upgradient from impoundments 5-1 and P-1.

- On December 5 and confirmed by the letter of December 7, 1983, KMCC agreed to report appropriate groundwater-monitoring data to NDEP after the first series of annual sampling was completed in December, 1983.
- By letter dated February 1, 1984, KMCC reported results of its groundwater-assessment program which included installation of 15 monitoring wells in addition to the RCRA monitoring wells. These results confirmed that the chromium contamination was from process Units 4 and 5 rather than the surface impoundments. A map showing the well locations and analytical results was included in the report to NDEP.
- Sodium dichromate, used as a corrosion inhibitor and pH buffer in the electrolytic cells, is the source chemical for this chromium contamination.
- of Units 4 and 5 by (1) more intensive pumping of cell liquors back to the process and (2) sealing the existing concrete walls and bottom with a polymeric compound. Submersible pumps were ordered to recover contaminated water from two wells directly north of these basements for return to the process.
- « KMCC also began recovery pumping from other groundwatermonitoring wells.
- * KMCC agreed to further expand its monitoring program with additional wells and to periodically report analytical results to the NDEP.
- On February 23, 1984, Mr. Allen Biazzi, NDEP, met with representatives of KMCC in Henderson on pumping from

Thomas J. Fronapfel, P.E. Page 4 September 26, 1984

> monitor wells. KMCC identified the locations of monitor wells inserted into the Muddy Creek formation north of the Beta (surface) drainage ditch and provided well logs, construction details, and analytical data to Mr. Biazzi.

- On March 16, 1984, KMCC confirmed by letter to Mr. Biazzi) the joint discussions of February 23 and provided drawings and specifications, including all logs and details of groundwater monitoring well construction. agreed in this letter to confine cleanup operations to the area south of the Beta ditch. Further, each month, KMCC would measure water level in each well and analyze samples for chromium. At appropriate intervals, the results would be reported to NDEP.
- KMCC has continued its groundwater-monitoring-assessment program by routine sampling and analysis, together with installing more wells for a total of 26.

Future Program

We plan to submit a summary report to the State of this work by November 30, 1984. This report will also address our ongoing plans for monitoring and recovery wells as well as technical study of potential methods to treat and/or remove chromium from affected groundwater.

We request the opportunity to meet with you and your associates to discuss all these matters at a mutually convenient time in the near future. We suggest meeting in Henderson to allow you the opportunity to observe our onsite activities and discuss possible alternative programs.

If you are agreeable, please call me or R. Stater at 565-8901 to arrange the meeting.

Sincerely,

KERR-McGEE CHEMICAL CORPORATION

R. B. Chase, Jr. Plant Manager

Top Ocher, h

RBC:jc Attachment

cc: EPA, Region IX

KERR-McGEE CHEMICAL CORPORATION

HENDERSON, NEVADA FACILITY

HAZARDOUS WASTE CLOSURE/POST-CLOSURE PLAN

Revision 1 - September 28, 1984

I. Background

A revised Part A "Application for a Hazardous Waste Permit" for Kerr-McGee Chemical Corporation's (KMCC) Henderson, Nevada facility was submitted on July 14, 1982, to the U. S. Environmental Protection Agency (EPA), Region IX, with a copy to the Nevada Division of Environmental Protection (NDEP).

This application identified three hazardous wastes generated at the facility, together with the TSD Hazardous Waste Management facilities. These were reported as follows:

- Liquid waste containing chromium from manufacturing potassium perchlorate which was stored in two lined surface impoundments, designated P-1 and S-1.
- Filter cake mud containing chromium from the sodium chlorate production process which was disposed of in a hazardous waste landfill located onsite.
- 3. Waste solvents stored in one 55-gallon steel drum.

September of 1982, KMCC permanently terminated potassium perchlorate production. As described below in the closure plans for ponds S-1 and P-1, the potassium perchlorate operation was completely cleaned and the equipment transferred to other uses. All hazardous materials, including the liner, were removed from pond S-1 and placed in the onsite hazardous waste landfill prior to January 25, 1983. Neither the landfill nor pond P-1 received hazardous waste after January 25, 1983. - now 7/20/82

At this time, KMCC desires to close the two surface impoundments and the hazardous waste landfill under interim status standards. The generator identification number will be retained to allow offsite shipment of hazardous waste to permitted disposal facilities. The closure/post-closure plans for the two surface

impoundments are described below. The closure/post-closure plan for the landfill was submitted on June 13, 1984.

As a result of its review of the KMCC Plan dated April 5, 1984, NDEP advised KMCC by letter dated August 17, 1984, of certain deficiencies in the Plan and requested KMCC to make appropriate revisions to the closure portions.

This revision to the April 5 Plan addresses the concerns identified by the NDEP and, more accurately, reflects NDEP's closure requirements. The following revisions are made:

- A. Procedures are described for <u>cleaning up S-1</u>, <u>P-1</u>, and all affected areas to a level below that specified for total chromium in 40 CFR, Part 261.24, which is 5 ppm.
- B. KMCC will not establish background levels of chromium or use statistical comparisons, such as the students' t-test, to determine cleanup of contaminated areas.
- C. Chromium in soil samples from the impoundments and affected areas will be analyzed by Desert Research Institute (DRI) in accordance with the procedures given in 40 CFR 261.
- D. Procedures are given for verifying that all affected areas were properly cleaned.
- E. A new section is added to the Plan that identifies the source of chromium contamination.

II. Closure/Post-Closure Plan for Surface Impoundment S-1

1. History

Pond S-1 was constructed in October of 1974. It was excavated in the native soil and the liner was installed by Hydraulic Materials, a company which specialized in installing liners for surface impoundments. The excavation was smoothed and the bottom was sealed with $20-mil\ PVC$. The east berm was covered with $30-mil\ laminated-reinforced$ CPE, and the other three side berms were covered with 30-mil plain CPE. The sides were covered with CPE because of its greater resistance to sunlight. Pond S-1 had an approximate surface area of 47,500 ft.² and an approximate total volume of 270,000 ft.3. Cleanup and closure of S-1, described below, were completed danuary 25, 1983.

Junger Junger

2. Maximum Inventory

The maximum hazardous waste inventory that could have been stored in S-1, allowing 2' freeboard, was approximately 1,700,000 gallons. The liquid waste had a total chromium concentration above 5 ppm which made it hazardous by definition. Salts, such as potassium chloride, crystallized on the bottom and sides below the water level as the solution became saturated as the result of solar evaporation. These crystals contained less than 5 ppm chromium when subjected to the "EP Toxicity" test, as shown in the attached data regarding the solid phase of pond P-1. The chromium remained mostly in the liquid phase.

3. Removal of Contents from S-1

Soon after potassium perchlorate production was terminated in 1982, S-1 was removed from service. Some liquid was allowed to solar evaporate, but no additional equipment was used to increase evaporation. The remaining free liquid was transferred by pumps and heavy-duty hose lines to pond P-1. The dewatered solids (containing about 10 percent moisture) and the bottom and side liners were removed with a clamshell and paddle scraper. These bulk materials were handled as hazardous wastes and transported to the hazardous waste landfill onsite. Also, the two feet of soil under the liner, as well as any contaminated soil resulting from closure, was removed and placed in the landfill.

By letter dated August 17, 1984, the NDEP notified KMCC that for closure of a surface impoundment all areas affected by S-1 and P-1 must be cleaned to a level below that specified for chromium in 40 CFR 261.24, which is 5 ppm. Kerr-McGee has complied with this criteria in cleaning up S-1 and/or cleaning P-1 to the same level.

In the fall of 1982, KMCC cleaned pond S-1 by removing residual solids together with the bottom and side liners using a clamshell and paddle scraper. All these materials were buried in the hazardous waste landfill onsite before January 25, 1983 Two feet of soil from beneath the liner were also removed and placed in the landfill prior to January 25, 1983.

After the above work was completed, KMCC verified that all hazardous waste constituents were removed from the S-1 pond area by the following sampling and analysis procedures:

- A. Six soil corings to a depth of four feet were taken from the pond site at locations shown on the S-1 sketch map, Figure 1.
- B. Three soil corings to a depth of three feet were taken from outlying areas away from the pond to identify any possible contamination.
- C. A composite sample of each coring made up of equal portions of each foot was prepared for analysis.
- D. Four additional samples were taken in August, 1984, at four locations from the cleaned bottom of pond S-1 and analyzed by the procedures given in 40 CFR 261.24 by DRI.
- E. Samples of surface and core soil previously collected in March, 1984, were preserved by DRI and reanalyzed by proper procedures of 40 CFR 261.24.

Analytical results reported by DRI on the samples are given in Table I. These show that the chromium contamination in all the samples was less than 1/100 of the cleanup level of 5 ppm.

Therefore, KMCC concludes that cleanup has been completed to a level well below the criteria established by NDEP, and there is no contamination in the bottom of pond S-1 or affected areas.

There are no plans to fill the impoundment area. After certification of proper closure, it could be used for other purposes.

4. Decommissioning and Cleanup of Manufacturing Area

When production of potasssium perchlorate was terminated, all in-process product was finished and delivered to inventory for commercial sale. All process piping, pumps, and vessels were drained, and the liquors transferred to pond P-1. The entire operation (pipes, vessels, etc.) was flushed with copious amounts of water to remove the hazardous waste component (chromium) as well as any residual salt solution that might remain. All rinsate streams were pumped to pond P-1 for storage, evaporation, and recycle.

After decontamination, as described above, most of the equipment was put in service in other

areas of the plant. Unusable piping, tanks, etc., were sold as scrap. Complete cleaning was easily determined because any liquid residue crystallized on the equipment when the water evaporated. This was avoided by thorough flushing followed by inspection of the equipment after drying.

5. Decontamination of Cleanup Equipment

The clamshell, trucks, paddle scraper, transfer pipes, etc., used in the solids removal and cleanup operation were thoroughly flushed with fresh water. The rinsate was delivered to pond P-1.

6. Decontamination of Surrounding Area

Soil around pond S-1 that was contaminated during the cleanup was removed and placed in the hazardous waste landfill. This was monitored by visual and physical inspection. There is no runoff from S-1 since the tops of the berms are about one foot above ground level. In addition, there are no stormwater ditches or drainage systems which run into S-1 that could be contaminated. As discussed in No. 3, all hazardous waste constituents were removed from the pond site.

7. Pollutant Migration

Any migration of the applicable hazardous waste constituent chromium into the underlying soil would have been detected by the soil sampling and analyses described in No. 3. Also groundwater monitoring, described below, would indicate pollu-

Closure/post-closure groundwater monitoring not required for pond S-1 since all hazardo waste constituents have been removed. How groundwater monitoring in the How area is a separate program Nevada State Groundwater of S. not required for pond S-1 since all hazardous waste constituents have been removed. However, groundwater monitoring in the Henderson plant area is a separate program being conducted under Nevada State Groundwater Regulations. Monitoring in this program includes groundwater in the area of S-1. Data from this program demonstrate that no hazardous waste constituent (i.e., chromium) was traceable to S-1.

9. Closure/Cover Materials

As mentioned in No. 3 above, the pond S-1 site will not be filled, pending a decision to use

the area for other purposes. Cover is not required since all hazardous waste constituents have been removed.

10. Closure/Post-Closure Costs

Kerr-McGee has already expended funds in the amount of approximately \$30,000 to close pond S-1. Final certification by a Professional Engineer for the two surface impoundments and landfill will cost \$1,500.

11. Closure Schedule

As stated above, surface impoundment S-1 was closed prior to January 25, 1983. Sampling and analyses were conducted after the solids and liner had been removed. After approval of closure plans for pond P-1 and the landfill, all work will be completed within 180 days, and the work will be monitored by responsible K-M officials and a Registered PE. The NDEP will be properly notified and provided with a certified copy of the PE inspection report.

III. Closure/Post-Closure Plan for Surface Impoundment P-1

1. History

Pond P-1 was constructed in April of 1972 and relined in 1980. The new liner was installed by B. F. Goodrich and consisted of 30-mil Hypalon. Pond P-1 has an approximate surface area of 26,000 ft.² and approximate volume of 125,000 ft.³. Pond P-1 has not received any hazardous waste since January 25, 1983

2. Maximum Inventory

The maximum hazardous waste inventory that could have been stored in P-1, allowing 2' freeboard, is approximately 700,000 gallons. The liquid waste had a total chromium concentration above 5 ppm which made it hazardous by definition. Salts, such as potassium chloride, have crystallized on the bottom and sides below the water level as the solution became saturated as the result of solar evaporation. These crystals contain less than 5 ppm chromium when subjected to the "EP Toxicity" test, as shown in the attached data.

3. Removal of Contents from P-1

As described in the S-1 closure plan, pond P-1 received some hazardous waste from the closure

of S-1 and the decommissioning of the potassium perchlorate manufacturing process. Pond P-1 has not received any hazardous waste since January 25, 1983.

As stated above, the liquid phase of the potassium perchlorate waste contained chromium in excess of 5 ppm. All liquid has been solar evaporated or recycled back to the process to take advantage of chromium's corrosion inhibition characteristics. The pump and line used for recycle were flushed with fresh water and the rinsate placed in pond P-1 and allowed to solar evaporate. No other equipment was used to aid or promote evaporation.

To confirm the remaining solids in pond P-1 were nonhazardous, the solids were sampled and analyzed by Desert Research Institute as specified below:

- A. Solid samples were taken from the bottom of the pond at locations shown on the attached map to a depth of one foot.
- B. These solids were subjected to the EP Toxicity Extractions and analyzed for the "EP Toxic" metals.

The attached analyses indicate the remaining Solids in pond P-1 are not hazardous. KMCC proposes to remove these solids and liner and place in the onsite nonhazardous waste landfill. After this has been completed, KMCC proposes to demonstrate that no hazardous constituents have migrated from the P-1 pond area as described below in Section 7, "Pollutant Migration."

4. Decommissioning of Manufacturing Area

Pond P-1 received wastes from the potassium perchlorate operation as did pond S-1. The decommissioning of the potassium perchlorate production area is described in detail in Section II.4., which is part of the pond S-1 closure plan.

5. Decontamination of Surrounding Area

Since the solids remaining in pond P-1 are not hazardous, special care in decontaminating the cleanup equipment will not be necessary.

6. Decontamination of Surrounding Area

Any surrounding soil affected by the removal of the nonhazardous solids in P-1 will be removed

and placed in the nonhazardous waste landfill. This will be monitored by visual and physical inspection. Again, it should be noted that the waste remaining in P-1 is not hazardous.

7. Pollutant Migration

Any pollutant migration of chromium, the applicable hazardous waste constituent from pond P-1, during its operational life, will be determined by the following sampling and analysis procedures:

- A. After the remaining nonhazardous solids and liner are removed, six soil corings to a depth of four feet will be taken from the pond site area at locations shown in attached sketch P-1, Figure 2.
- B. A composite sample of each foot of core will be made and analyzed for chromium by DRI following procedures in 40 CFR 261.24.
- C. Surface samples to a depth of three to four inches will be taken near each core location and separately analyzed for chromium by the same procedures.
- D. Evidence of chromium concentration of 5 ppm or above will constitute reason to remove soil from the area to a depth where the chromium concentration is less than 5 ppm. All excavated soil will be transported to Beatty, Nevada for disposal at the U.S. Ecology's landfill.
- E. Surface samples and core samples to a depth of four feet will be collected from adjacent potentially affected areas and analyzed for chromium migration if chromium is detected below one foot depth in the P-1 bottom. Based on the experience with pond S-1, KMCC does not anticipate any migration of chromium from P-1.

Currently, there are no plans to fill the pond area. After certification of proper closure, it potentially could be relined and used for a nonhazardous waste impoundment.

8. Groundwater Monitoring

Closure/post-closure groundwater monitoring will not be required for pond P-1 since all hazardous waste constituents will be removed. However,

groundwater monitoring in the Henderson plant area is a separate program being conducted under Nevada State Groundwater Regulations. Monitoring in this program includes groundwater in the area of P-1. Data from this program demonstrate that no hazardous waste constituent (i.e., chromium) was traceable to P-1.

Closure/Cover Materials

As mentioned in No. 7 above, the pond P-1 site will not be filled, pending a decision to use the area for other purposes. Cover is not required since all hazardous waste constituents have been removed.

10. Closure/Post-Closure Costs

Kerr-McGee has already expended funds in the amount of approximately \$5,000 to recycle liquid from pond P-1 and conduct sampling and analyses. Future closure costs are estimated below:

Removal/Disposal of S	Solids -	\$10,000
Sampling and Analyses	s -	2,000
Administrative	_	2,500
PE Certification	_	500*
Total	1	\$20,000

*Based on one-third total certification - \$1,500

11. Closure Schedule

After approval of the closure plan, the schedule below will be followed:

Removal/Disposal of Solids - within 60 days Sampling and Analyses - within 90 days
PE Certification - within 120 days

Acmoval/Disposal of Sampling and Analys PE Certification

Closure will officials
The Closure will be monitored by responsible K-M officials and a Registered Professional Engineer. The NDEP will be properly notified and provided with a certified copy of the PE inspection report.

Sources of Chromium Contamination

1. Impact of Surface Impoundments S-1 and P-1

Sampling and analysis of surface soil and corings beneath S-1 and in potentially affected areas showed no chromium migration had occurred. Cleanup of the areas of concern was completed to chromium concentration less than 1/100 of the 5 ppm upper

limit as specified in 40 CFR 261.24. This was done with minimum removal of soil from the bottom berm and adjacent areas.

The operational life of pond P-1 was essentially the same as S-1. There is no evidence of chromium contamination from P-1 unless analyses of soil from the bottom and affected areas indicate that chromium migration occurred.

2. <u>Impact of Process Sources</u>

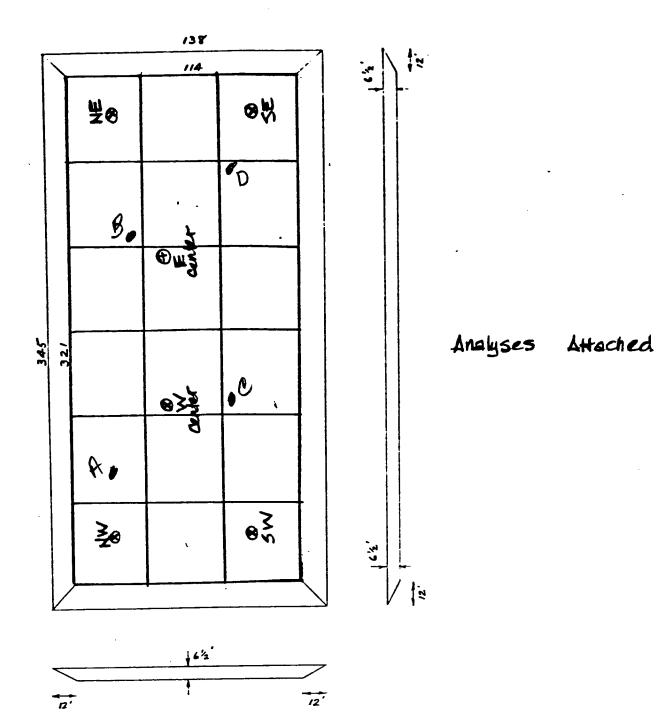
KMCC has constructed 26 wells to monitor ground-water beneath its facility for chromium. The highest chromium levels were found in M-11 and M-12 that are just north and downgradient from the sodium chlorate process buildings, Units 4 and 5.

These buildings were constructed as part of the original World War II government installation. For many years, liquids from the electrolytic cells in these buildings were collected in the old concrete basements and pumped back through the process for reuse in the cells. These liquids contained sodium dichromate as a corrosion inhibitor and buffer. The concrete basements slowly deteriorated, allowing seepage and subsequent chromium contamination of the groundwater.

KMCC has done several things to prevent this seepage and reduce the groundwater contamination as follows:

- A. <u>Installed two wells M-11 and M-1</u>2, on the north side of Units 4 and 5, to pump contaminated water back to the process and recapture the chromium values.
- B. Reduced seepage by minimizing the accumulation of liquid in the basements by regular pumping back to the process.
- C. Sealing the floor and walls of the basements with a special plastic coating to further reduce seepage.
- D. Committing to Clark County Health Department to replace all these cells (over 1 300 units) with new ones by August 1 1988. The new cells will be of the most modern design and will eliminate leaks, spills, and other escape of cell liquors.

Evidence, therefore, is preparatement that the process units were the source of chromium contamination and the surface impoundments were not.



EVAPORATION POND S-1

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RESULTS ON EP-TOX EXTRACTS REPORTED IN MG/L.

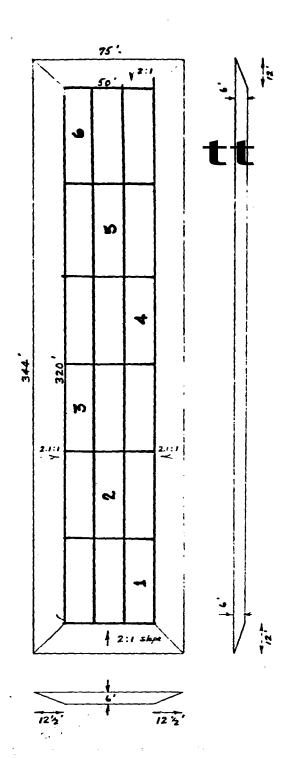
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Analyses Attached

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Figure 2

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OST OFFICE BOX 55 • HENDERSON, NEVADA 89015

September 24, 1984



Mr. H. LaVerne Rosse, P.E. Program Director, Waste Management Section Nevada Division of Environmental Protection Capitol Complex Carson City, NV 89710

Dear Mr. Rosse:

Earlier this year, KMCC discussed with your office the disposal of nonhazardous waste onsite at the Henderson facility. Ms. Brothers of KMCC indicated that there was no objection to such a plan by NDEP. This verbal approval has been questioned by KMCC corporate personnel. Therefore, I am requesting written approval by NDEP of this disposal plan.

The main waste that would be disposed of onsite at the Henderson facility is manganese tails from the manganese dioxide manufacturing process. In addition, there would be waste that could result from chemical spills onsite. This disposal would be after approval by NDEP. Concrete debris from demolition is normally transported offsite but could be disposed of in this area if needed. The location of this site is directly north of the plant cooling tower (see the attached sketch).

The manganese tails have been analyzed to insure they are non-hazardous in accordance with the "EP Toxicity" test. The attached printout from Desert Research Institute shows the results of this test.

If you have any questions regarding this request, please contact R. Stater at 565-8901.

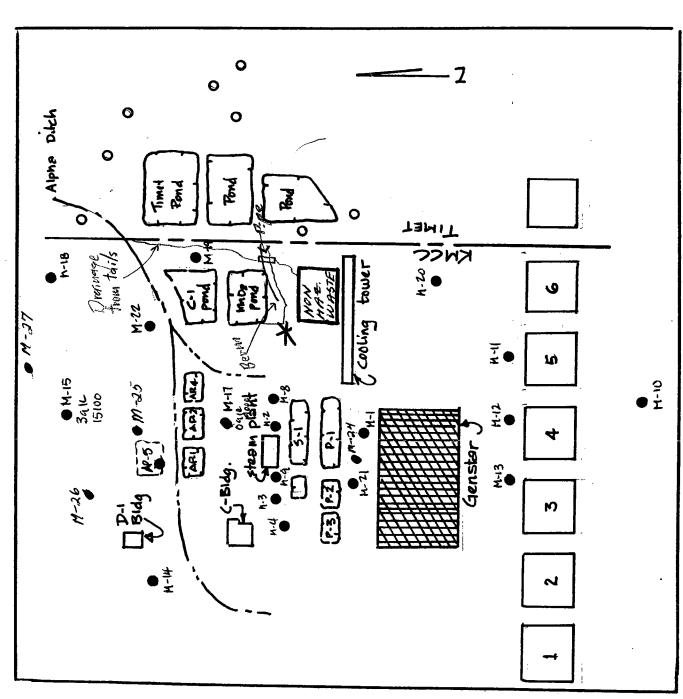
Sincerely,

R. B. Bartholomew
Manager - Operations

13/3 autholones

RBB:jc
Attachments

NON-HAZARDOUS WASTE DISPOSAL SITE.



€ H-23

WATER ANALYSIS LABORATORY REPORT DATE: 21-MAR-84 DESERT RESEARCH INSTITUTE FILE NAME: 7723KG. TBL ****************** LAB # : SAMPLE * AG AS BA CD CR HG DATE : POINT * MG/L MG/L MG/L MG/L MG/L MG/L ************************* 7723 :EP-EX 2-MAR-84 : TAILS * (Ø. 1 · (Ø.5 (Ø.5 ⟨Ø. 1 (0.02 <.002 WATER ANALYSIS LABORATORY DESERT RESEARCH INSTITUTE REPORT DATE: 21-MAR-84

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September 18, 1984

CERTIFIED MAIL #P25-0874638 RETURN RECEIPT REQUESTED

Mr. Gary Lance
RCRA State Programs Section
Toxics & Waste Management Division
U.S. EPA, Region IX (T-2-1)
215 Fremont Street
San Francisco, California 94105

Bear Gary:

On August 27, 1984, the Division granted Kerr-NcGee Chemical Corporation an extension to October 1, 1984, for submittal of their Closure/ Post-Closure Plan response to the Division's letter of August 17, 1984. The response was originally to be submitted on September 3, 1984.

The extension was granted for various reasons. Sased on a telephone conversation with Rolfz Chase on August 24, 1984, it was determined that Kerr-McGee could not adequately respond to all of the issues by September 3, 1984. Rolfe indicated that it was their intention to provide us with a "proper" response which would specifically address the items in our letter of August 17, 1984. Kerr-McGee also indicated that the CERCLA issue would have to be discussed with the Oklahoma office, as no decision could be prepared solely by the Henderson facility. Kerr-McGee also felt that more time was needed to determine the various sources of contamination at the facility, whether from process upsets, spills, etc.

It is Kerr-McGee's intention to provide the Bivision with an adequate and complete response to the Division's August 17, 1984, letter. As such, the Division felt it appropriate to grant the extension.

Should you have any questions regarding this matter, please contact me.

Sincerely,

JA.

Thomas J. Fromapfel, P.E. Environmental Engineer Waste Management Section

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August 27, 1984

Rolfe B. Chase, Jr. Plant Manager Kerr-McGee Chemical Corporation P.O. Box 55 Henderson, Nevada 89015

Dear Mr. Chase:

Pursuant to our telephone conversation and your letter of August 24, 1984, the Division hereby grants an extension to the deadline for submittal of your response on the closure/post-closure plan comments. Your response is now to be submitted on or before October 1, 1984.

Should you have any questions concerning this matter, please contact me.

Sincerely,

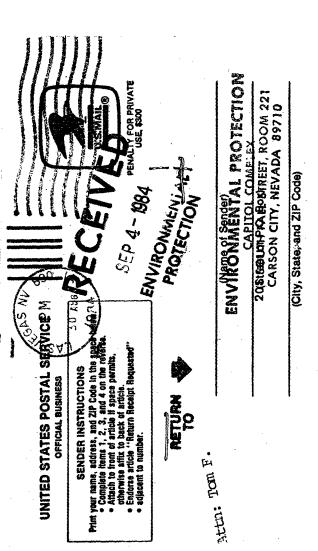
Thomas J. Fronapfel, P.E.

Environmental Engineer
Waste Management Section

TJF:kh

cc: Gary Lance

Certified Mail #1673796 Return Receipt Requested



P22 1673796 RECEIPT FOR CERTIFIED MAIL ECEIPT FOR CERTIFIED MAIL

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ENVIRONMENTAL **PROTECTION**

August 24, 1984

Certified Mail No. P 331 933 996

Mr. Thomas J. Fronapfel, P.E. Environmental Engineer Waste Management Section State of Nevada Department of Conservation and Natural Resources Division of Environmental Protection Capitol Complex Carson City, NV 89710

Dear Mr. Fronapfel:

As discussed with you today, I would like to ask for additional time to respond to your August 17, 1984 letter which commented on our closure/postclosure plans for the S-1 and P-1 surface impoundments. The workload is such that we feel we cannot adequately respond until on or about October 1, 1984.

Would you please let me know if this revised date is satisfactory.

Sincerely,

R. B. Chase, Jr.

Plant Manager

Top B Chase, h

RBC:jc

Response states

August 17, 1984

CERTIFIED MAIL #P22-1673102
RETURN RECEIPT REQUESTED

Rolfe B. Chase, Jr. Plant Manager Kerr-McGee Chemical Corporation P.O. Box 55 Henderson, Nevada 89015

Dear Mr. Chase:

The Division has reviewed your submittal of April 5, 1984, which contained the closure/post-closure plans for the S-1 and P-1 surface impoundments. Based on this review, the Division has several concerns and comments which must be satisfactorily addressed before the plans can be approved. These concerns were also discussed via telephone with Rick Stater on August 17, 1984. Our concerns are as follows:

- (1) Background samples M-1, M-4, and M-21 are not appropriate for use in comparing samples taken from beneath pond S-1, as they do not represent background in an area which has been unaffected by the facility;
- (2) The use of the Student's t-test for statistical comparison is a good approach. However, its main drawback is that the use of contaminated background samples can bias the results in such a way as to show no contamination has resulted from operating practices. This is exemplified in the calculations done for the S-1 impoundment;
- (3) The Division has previously set a precedent for "how clean is clean?", in terms of closure of a surface impoundment. The precedent is that cleanup must be to a level below that specified for chromium in 40 CFR Part 261.24, which is 5 ppm. This level has no bearing on what the actual background values may be;
- (4) Due to the extensive chromium contamination problem at the Kerr-McGee facility, the Division feels that EPA may be looking at the site from a CERCLA standpoint. As such, it is suggested that some thinking be done as to the routes Kerr-McGee may wish to take to address this issue. CERCLA makes no distinction as to whether contamination is from operational practices or from waste handling practices; and

Rolfe B. Chase, Jr. August 17, 1984 Page -2-

(5) As submitted, the portion of the plan for the P-1 impoundment appears adequate. It is possible that the same concerns could arise after the soil beneath P-1 has been sampled.

In response to these concerns, the Division hereby requests that, on or before September 3, 1984, Kerr-McGee revise the closure plan for the S-1 impoundment to include the following:

- (1) The procedures which will be utilized by Kerr-McGee to clean the areas affected by the S-1 and P-1 impoundments to a level below 5 ppm chromium;
- (2) The procedures to be used to verify that the affected areas have been properly cleaned;
- (3) A summary identifying the sources which have contaminated the areas surrounding impoundments S-1 and P-1; and
- (4) A summary specifying how Kerr-McGee will determine if chromium contamination is a result of losses from the process or from the impoundments.

The Division will be glad to meet with Kerr-McGee to discuss these issues, either in Henderson or in Carson City. Please contact us if you wish to arrange such a meeting, or if you have any questions regarding the above.

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PS Form 3800, Apr. 1976

Mr. Rolfe B. Chase, Jr.
Plant Manager
Kerr-McGee Chemical Corporation
P.O. Box 55
Henderson, Nevada 89015

Dear Mr. Chase:

The Division has reviewed your submittals of April 30, June 8, June 21, and July 13, 1984, which are in response to our Order issued on March 21, 1984,

It appears that the requirements of the March 21, 1984, Order have been satisfied, and that the "basement" area used for the waste pile storage has been adequately cleaned. It also appears that no migration from the "basement" area has occurred as a result of the waste pile operation.

Should you have any questions concerning this matter, please contact me.

Sincerely,

Thomas & Fronagle

Thomas J. Fronapfel, P.E. Environmental Engineer Waste Management Section

de

cc: Gary Lance, EPA (T-2-1)

July 23, 1984

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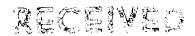
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July 13, 1984



JUL 1 6 1984

ENVIRONMENTAL PROTECTION

Mr. Thomas J. Fronapfel, P.E.
Environmental Engineer
Waste Management Section
State of Nevada
Division of Environmental Protection
Capitol Complex
Carson City, NV 89710

Dear Mr. Fronapfel:

In your letter of 29 June, 1984, regarding our cleanup of the chlorate storage site, you requested that additional samples be taken to determine chromium background levels for that area. The sampling was done in an area 20 feet south of the storage site and at an equivalent level to the previous site samples. The results of these samples were:

Location Concentration

East Sample .28 ppm

West Sample .40 ppm

A statistical analysis of the above data, in correlation to the site samples, shows that no significant difference exists and therefore no migration has occurred.

Sincerely,

R. B. Chase, Jr. Plant Manager

RBC:jc

June 21, 1984

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ENVIRONMENTAL

Mr. Thomas J. Fronapfel, P.E. Environmental Engineer Waste Management Section State of Nevada Division of Environmental Protection Capitol Complex Carson City, NV 89710

Dear Mr. Fronapfel:

In response to your letter of June 12, 1984, regarding further information on the cleanup of the chlorate storage site, the following is provided:

- 1. The equipment used for cleanup of the site was decontaminated at the site when removal would cause dispersement of the hazardous substance. This involved the tractor used to scrape the surface and the sandblasting vehicle. The manual tools, shovels, brooms, etc., were cleaned at the Chlorate Recovery area where all washdown liquids are returned to the process.
- 2. The soil was sampled at three locations within the chlorate mud storage area shown in the attached map. The soil corings were taken to a depth of 6 feet. Samples were taken at the two-, four-, and six-foot levels. The samples were subjected to a total nitric acid extraction and the leachate analyzed for total chromium. The results were:

SW - 0.1 ppm SE - 2.1 ppm NC - 0.8 ppm

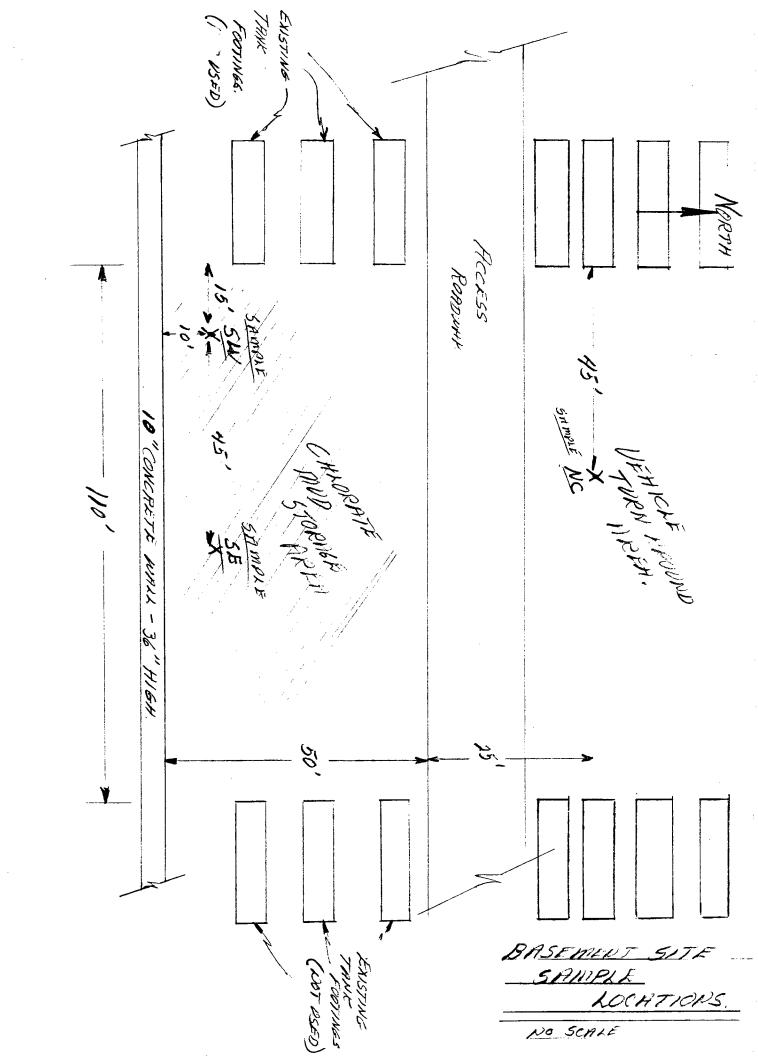
These values were compared to the background values for the Kerr-McGee area as reported to NDEP in the Closure Plan for Surface Impoundment S-1, dated April 5, 1984. This comparison demonstrates that no migration occurred at this site.

Sincerely, Joseph Chass, h.

R. B. Chase, Jr.

Plant Manager

RBC:jc Attachment



CERTIFIED - RETURN RECEIPT REQUESTED

RECEIVED

June 8, 1984

JUN 1 1 1984

ENVIRONMENTAL PROTECTION

Mr. Thomas J. Fronapfel Environmental Engineer Waste Management Section State of Nevada Division of Environmental Protection Capitol Complex Carson City, Nevada 89710

Dear Mr. Fronapfel:

The Finding of Violation and Order issued to Kerr-McGee on March 29, 1984, required that the site being used to store chlorate process waste be closed, and that action be taken to cleanup the site. Kerr-McGee stated in a letter to you on April 30, 1984, that the use of this site for storage had been terminated and cleanup would be initiated.

The following methods were used to clean the storage site.

- 1. A small tractor with scraper was used to break loose the waste that had adhered to the flooring of the site.
- 2. The waste piles were shoveled into drums which were removed daily to the trailer being used to transport this waste to the Beatty hazardous waste site.
- 3. Manual hand scrapers were used to remove waste material where the tractor could not maneuver. Material was disposed as in Step 2 above.
- 4. The entire site was swept to remove the fine dust remaining. A water mist was used during the sweeping process to hold down the dust and prevent airborne dispersion.
- 5. After the above four steps had removed all the visible waste material, the location was sandblasted and swept to remove any latent film present.

Page 2 Mr. Thomas J. Fronapfel June 8, 1984

6. Three soil corings were taken to determine if any migration of chronium had occurred through the asphalt surface.

The above actions have been successful in removing the chlorate process waste material, and the samples show that the hazardous constituent in the waste has not migrated into the soil.

Based on the above actions and your approval, Kerr-McGee Chemical Corporation requests this site be considered closed and clean.

Sincerely yours,

Rolfe B. Chase, Jr.

Plant Manager

Kerr-McGee Chemical Corporation

RBC/m.id



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June 29, 1984

Mr. Rolfe B. Chase, Jr. Plant Manager Kerr-McGee Chemical Corporation P.O. Box 55 Henderson, NV 89015

Dear Mr. Chase:

The Division has reviewed your submittals of June 8 and June 21, 1984 which were in response to our Order dated March 21, 1984 and has identified the following deficiencies:

- 1) Your letter of June 21, 1984, stated that the analytical results for the soil corings from the waste pile area had been compared to background area values, specifically those values obtained from soil samples M-1, M-4 and M-21, as identified in the closure plan for the S-1 impoundment. Based on the information submitted and that in our files, samples M-1, M-4 and M-21 are not hydraulically downgradient from those taken from the waste pile area. The Division therefore feels that no direct correlation can be made in order to identify if migration has or has not occurred.
- 2) Historically, samples obtained to identify or establish background values are done so in areas unaffected by the facility. This is not the case for samples M-1, M-4 and M-21, which range in chromium content from 7.5 to 19ppm. In addition, background generally infers upgradient rather than downgradient.

In order to better ascertain whether migration has occurred from the waste pile area, the Division hereby requests that Kerr-McGee complete the following by the date specified:

June 29, 1964

ir. Bolt Ba Chase, Jr. Plant Panayar Kerr-Rober Chestoal Corporation 23 XXII .0.9 denderson, DV 69018

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Your letter of June 21, 1984, start that the for the soil corings from the was background area values, specifical B also box had almost the 3-1 impoundment. Based d our files, samples 1-1, 1 ient from those taken fru therefore feels that no-

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Mr. Rolfe S. Chase, Jr. June 29, 1984 Page -2-

By July 13, 1984, provide the Division with analytical results and documentation showing background values for the soil upgradient (south) of the waste pile area. Samples should be taken at equivalent depths to those taken from the waste pile area, and in an area unaffected by the facility.

Should you have any questions regarding this matter, please call me.

Sincerely,

Thomas J. Fronapfel, P.E. Environmental Engineer Waste Management Section

TJF/sjp

cc: Gary Lance

Certified Mail #1673784

Return Receipt Requested

June 12, 1984

Mr. Rolfe B. Chase, Jr. Plant Manager Kerr-McGee Chemical Corporation P.O. Box 55 Henderson, Nevada 89015

Dear Mr. Chase:

The Division has reviewed your submittal of June 8, 1984, and hereby requests that you submit the following additional information within ten (10) days of receipt of this letter in accordance with 40 CFR Part 265 and Nevada Administrative Code 444.8850:

The procedures used to decontaminate any equipment used during the cleanup of the obligate wasts pile; and

The analytical results from the three soil corings which were taken.

Should you have any questions regarding this matter, please contact me.

Sincerely,

Thomas of Fronzago

Thomas J. Fronapfel, P.E. Environmental Engineer Waste Management Section

TJF/sjp

Certified Mail #1673777 Return Receipt Requested June 12, 1986

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The Division has merieural your sub litted of June 8, 1984, and hereby requests for jou submit the fullowing additional information within ten (10) days of receipt of this letter in accordance anth 40 CFR Part 266 and Noveca 10000.815 shall wrantan first

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P22 1573777

RECEIPT FOR CERTIFIED MAIL

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RECEIVE

JUN - 8 1984

ENVIRONMENTAL PROTECTION

Mr. H. LaVerne Rosse, P.E. Program Director, Waste Management Section Nevada Division of Environmental Protection Capitol Complex Carson City, Nevada 89710

Dear Mr. Rosse:

June 7, 1984

In the April 30, 1984 letter to Mr. Fronapfel, Kerr-McGee stated that procedures for decontaminating the site used for storage of chlorate process waste would be submitted to Nevada Department of Environmental Protection by June 1, 1984. However, due to personnel changeover and work loads, the June 1 date could not be met. I am requesting that an extension be given to June 11, 1984, for submission of this information.

The site cleanup and sampling was completed on June 6, 1984. The results of the laboratory tests will not be available until June 8, 1984. The completed report will be submitted subsequent to the receipt of these results.

I regret not being able to meet this stated response date, but will ensure this does not happen again.

Sincerely yours, Who Mines

R. B. Chase, Jr.

Plant Manager

Kerr-McGee Chemical Corporation

RBC/m.id

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LM 25

June 5, 1984

Certified Mail #
Return Receipt Requested

Mr. Rolfe B. Chase, Jr. Plant Manager Kerr-McGee Chemical Corporation P.O. Box 55 Henderson, Nevada 89015

Dear Mr. Chase:

Enclosed is a Finding of Violation and Proposed Stipulated Civil Penalty issued to Kerr-McGee Chemical Corporation.

The offer for the proposed stipulated civil penalty expires on July 10, 1984. With the payment of this penalty, Kerr-McGee will be released from further liability for the enumerated violation.

If you wish to discuss this proposed offer, please contact Verne Rosse, Division of Environmental Protection, 201 South Fall Street, Carson City, Nevada 89710, (702)885-4670.

Sincerely,

H. LaVerne Rosse, P.E.

Program Director

Waste Management Section

HLR:1dz

cc: Gary Lance, EPA, Region IX

march 8 184

L.H. Dodgion

Lm26-27

INTRODUCTION

This finding of violation is made and a stipulated civil penalty is proposed by the Nevada Division of Environmental Protection (NDEP) to Kerr-McGee Chemical Corporation (Kerr-McGee), whose principal place of business is located on Lake Mead Driver, Henderson, Nevada 89015.

NDEP bases its finding on all information available as a result of an inspection of the Kerr-McGee facility on March 8, 1984, an Administrative Order issued by NDEP on March 21, 1984, a Show Cause Hearing with Kerr-McGee representative on April 3, 1984, and on a compliance schedule submitted to NDEP by Kerr-McGee on April 30, 1984.

The factual findings and probably violations enumerated below will serve as the basis for legal action to impose a civil penalty pursuant to Nevada Revised Statutes (NRS) 444.774.

In lieu of instituting civil action, NDEP hereby offers Kerr-McGee an opportunity to stipulate to the payment of a civil penalty as specified below. The penalty proposed is based on the seriousness of the violation and the threat of harm to public health or the environment. The factual findings and probably violations which would serve as the basis for a civil action are as follows:

- Kerr-McGee operates a facility located on Lake Mead Drive in Henderson, Nevada.
- 2. An inspection by NDEP on March 8, 1984 revealed that Kerr-McGee was in violation of 40 CFR §270.13, 40 CFR §262.34(a)(1), (a)(2), and (a)(3), 40 CFR §265.14, 265.15, 265.31 and Subparts D, G and L

of 40 (RF) Part 265, for operation of a waste pile for storage of hazardous waste.

- 3. On March 21, 1984, NDEP issued an Administrative Order to Kerr-McGee as a result of the aforementioned violations. This Order required that:
 - (a) Kerr-McGee cease and desise use of the waste pile (basement area);
 - (b) Kerr-McGee provide NDEP with a compliance schedule which detailed the actions to be taken to bring the facility into compliance; and
 - (c) Kerr-McGee appear in the offices of NDEP for a Show Cause Hearing.
- 4. On April 3, 1984, Kerr-McGee representatives appeared in the offices of NDEP for the required Show Cause Hearing.
- On April 30, 1984, Kerr-McGee submitted a compliance schedule to NDEP which sepcified that procedure for decontaminating the "basement" area would be prespared and submitted to NDEP by June 1, 1984, for approval. As of June 5, 1984, no submittal has bewen received.
- 6. Kerr-McGee is in violation of the terms of the Administrative
 Order is sued on March 32, 1984, as the June 1, 1984 date specified in the compliance schedule of April 30, 1984 was not adhered
 to, in violation of NRS 444.774.





NRS 444.774 authorized a civil penalty of up to \$10,000.00 per day for each violation of NRS 444.700 through 444.764, inclusive. NDEP policy is to seek the maximum penalty available for each violation if civil action must be instituted. NDEP proposes the following stipulated civil penalty in the interest of pre-litigation settlement:

- In the event of Kerr-McGee's agreement, the total amount of \$5,200 shall be made by certified or cashier's check payable to the Treasurer of the State of Nevada and remitted to the Division of Environmental Protection, 201 South Fall Street, Carson City, Nevada 89710.
- 2. This offer expires by limitation on July 10, 1984.

Upon Kerr-McGee's agreement to and payment of the stipulated civil penalty, NDEP shall execute a release of Kerr-McGee from any liability for civil and criminal penalties attributable to the enumerated violation.

If you wish to discuss this proposed offer during the period that remains outstanding, please contact Verne Rosse, Division of Environmental Protection, 201 South Fall Street, Carson City, Nevada 89710, (702)885-4670.

Date

H. LaVerne Rosse, P.E.

Program Director

Waste Management Section



STATE OF NEVADA

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES DIVISION OF ENVIRONMENTAL PROTECTION

CAPITOL COMPLEX
CARSON CITY, NEVADA 89710

TELEPHONE (702) 885-4670

May 7, 1984

Kerr-McGee Chemical Corp. Mr. Rolfe B. Chase Jr. Plant Manager P.O. Box 55 Henderson, Nevada 89015

Dear Mr. Chase:

This letter is to confirm approval of your proposal, dated November 4, 1982, to replace ponds no. 1 and no. P-2 and your proposal, dated March 9, 1984, to reline the existing ponds and amend the leakage-detection program to incorporate double liners with a leachate collection, detection and removal system. It is our understanding that all of your ponds will be double-lined in accordance with the drawings and specifications which you submitted on the above cited dates, with the possible exception of the P-2 Pond which may be relined. Since the proposed changes to the ponds and the leak-detection system are consistent with the existing terms and conditions of the permit, these will not require any amendments to the permit. The new specifications will simply be appended.

The proposals dated November 23, 1983 to add an additional outfall (002) and to relocate the sampling point have also been reviewed. Discharges of zinc and phosphorous are not authorized by the present permit so any discharge of these elements would be a violation of Nevada Revised Statute (NRS) 445.221-- unlawful discharge of a pollutant without a permit. The present phosphorous limit on permitted point source effluent discharges into Lake Mead or its tributaries is 1.0 mg/l. This translates to an allowable discharge limit of 3 mg/l of PO₄. Since zinc and phosphorous are "New, different pollutants", any discharge of these elements must be reported and accompanied by an application in accordance with Part II.A.1 of the permit.

In addition to these considerations, we would like to draw your attention to Part II.A.7 of the permit-- "Safeguards to Electric Power Failure"-- which may apply to the cooling water recirculation pumps insofar as they are necessary to maintain compliance with the effluent conditions of the permit.

Mr. Chase May 7, 1984 Page -2-

Your proposal to relocate the sample collection point for the TDS and NACl parameters to a point directly after the process equipment is approved as long as it is consistent with condition I.C.1 of the permit. This requires that the sample shall be representative of the volume and nature of the monitored discharge. In other words, the sampling must reflect what is being discharged by the company.

I hope this letter has answered some of your questions. If there is a further need for discussion or clarification of these issues, please give me a call.

Sincerely,

Joe Livak

Water Quality

Enforcement Officer

JL/sjp cc: H. LaVerne Rosse John Merkel April 30, 1984

Mr. H. LaVerne Rosse, P.E.
Program Director
Waste Management Section
State of Nevada
Division of Environmental Protection
Capitol Complex
Carson City, NV 89710

REPURPMENTAL MAY 1. HOW ENVROPECTION

Re: Hazardous Waste Activity - Annual Report

Dear Mr. Rosse:

Attached are the completed annual reports for Kerr-McGee Chemical Corporation's (KMCC) Henderson facility. Both the "Hazardous Waste Generator Report" and the "Hazardous Waste Treatment, Storage, and Disposal Report" were completed. As you know, KMCC did operate a hazardous waste landfill during the first part of January; however, the landfill has not received any waste since January 25, 1983.

As we have discussed, the closure/post-closure plan for the landfill is currently under revision. This revision includes the cost estimate for the closure/post-closure plan. This will be submitted to the Nevada Division of Environmental Protection (NDEP) upon completion, which is anticipated to be the end of May.

If there are any questions regarding the attached, please contact me at 565-8901, Ext. 234.

Sincerely,

K. Brothers

Staff Process Engineer

KB:jc Attachments

cc: R. B. Chase, Jr.

T. L. Hurst

J. R. Kelley

E. T. Still

April 30, 1984

RECEIVED

MAY 1 - 1984

ENVIRONMENTAL PROTECTION

Mr. Thomas J. Fronapfel
Environmental Engineer
Waste Management Section
State of Nevada
Division of Environmental Protection
Capitol Complex
Carson City, NV 89710

Dear Mr. Fronapfel:

On the basis of the <u>Finding of Violation</u> and <u>Order received</u> by Kerr-McGee Chemical Corporation (KMCC) on <u>March 29, 1984</u> we hereby report the actions taken and provide a compliance schedule for those actions which will be taken by KMCC to comply with that Order.

- Chlorate process waste has been removed from the "basement" (tank) and the basement will no longer be used for waste storage. Procedures for decontaminating this area are being prepared and will be submitted to the Nevada Department of Environmental Protection (NDEP) by June 1, 1984, for approval. This action corrected the several violations listed in paragraphs C, D, E, F, G, and H of the Findings of Violation.
- 2. The chlorate process waste is now being placed directly into the DOT-approved transport container. This container has been properly marked "Hazardous Waste" (40CFR 262.34 [a][3] and NAC 444.8665 [4]), and the date upon which each period of accumulation begins is clearly marked (40CFR 262.34 [a][2] and NAC 444.8665 [3]).
- KMCC submitted revised closure/post-closure plans for two hazardous waste surface impoundments to the NDEP on April 5, 1984. An amended closure/post-closure plan for our hazardous waste landfill will be submitted in May. Earlier closure/post-closure plans, submitted on June 9, 1983, stated it was KMCC's intent to close all hazardous waste management facilities and retain our EPA hazardous waste generator ID number to ship such wastes offsite. That submittal also stated a request to withdraw the Part A application would be submitted after final closure of all hazardous waste management units.

Permisea Note 1984 Mr. Thomas J. Fronapfel Page 2 April 30, 1984

On April 3, 1984, KMCC representatives, K. Brothers, R. Chase, and T. Hurst, met with the NDEP in Carson City. At that time, we discussed and agreed upon appropriate procedures to comply with the <u>Finding of Violation</u> and <u>Order</u>. This meeting fulfills the requirement of Item 3 of that Order.

We believe we have properly responded to the requirements listed in the $\underline{\text{Finding of Violation}}$ and $\underline{\text{Order.}}$ If there are any questions please contact me or K. Brothers at 565-8901.

Sincerely,

KERRMcGEE CHEMICAL CORPORATION

R. B. Chase, Jr.

Plant Manager

RBC:jc



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STATE OF NEVADA

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES DIVISION OF ENVIRONMENTAL PROTECTION

Capitol Complex
CARSON CITY, NEVADA 89710

April 11, 1984

Telephone (702) 885-4670

MEMORANDUM

T0:

L.H. Dodgion, P.E., Administrator

FROM:

Thomas J. Fronapfel, P.E., Environmental Engineer

Waste Management Section

SUBJECT: SUMMARY OF MEETING WITH KERR-McGEE ON 04/03/84.

On April 3, 1984, a Show Cause meeting was held with Kerr-McGee Chemical Corporation to discuss the violations as specified in our Administrative Order of March 21, 1984. Present at the meeting from Kerr-McGee were:

Kay Brothers, Environmental Engineer Rolf Chase, Jr., Plant Manager Tom Hurst, Consultant

Present from DEP were:

Tom Fronapfel, Environmental Engineer
Doug Martin, Environmental Management Specialist
Verne Rosse, Program Director
Lew Dodgion, Administrator

DEP contends that Kerr-McGee is operating a waste-pile for storage of hazardous waste. This contention is based upon the discovery that storage is taking place in an old foundation that was designed to support a building; it is in what was once used to support a redwood storage building. Kerr-McGee contends that this foundation meets the criteria for a tank. The RCRA definition of a tank specifies that it must be designed to handle an accumulation of hazardous waste. Tom Hurst's reply to this was "Design comprehends use."

MEMORANDUM L.H. Dodgion April 11, 1984 Page 2

In addition, the process as used is considered "treatment" because one of the three hazardous waste streams has free liquids which are dried by solar evaporation. The amount of material requiring drying in this manner is approximately 20% of the total waste stream. The remaining 75-80% can be placed directly into a DOT approved container for shipment.

We suggested that the "wet" waste stream (cell-washings) be placed in containers with absorbent material as a possible solution. Kerr-McGee felt that this would be a plausible solution.

The possibility of determining if any subsurface contamination had occurred was also discussed, as were ways in which the storage area could be sealed for continued use.

Rolf Chase decided that the ideal situation would be to get away from current practices as quickly as possible and to reevaluate the process to find other ways to handle the "wet" waste to avoid having to obtain a RCRA permit. He emphasized that Kerr-McGee wishes only to maintain their status as a generator, not as a treatment, storage, or disposal facility. The possible solution of adding the wet waste to a container with absorbent material in it will be addressed by Kerr-McGee.

Kerr-McGee will address the items outlined in the Order within the specified 30-day period. This submittal will include the steps to be taken to remedy the current practice, and a schedule which outlines when compliance will be achieved.

A separate submittal will be made addressing the question of contamination of soils underlying the waste-pile. Kerr-McGee represented that they will drill through the pad at a location near the stem wall where wastes were piled and take a one-foot deep soil sample and analyze for chromium. This should be completed and submitted by May 30, 1984.

Kerr-McGee was also concerned about verbal communication with DEP and the lack of written approvals from this office. They would like to have all approvals, verifications, etc., in writing. These concerns related specifically to their NPDES permit.

Kerr-McGee will also be submitting revised RCRA closure plans for their landfill and surface impoundment.

Thomas J. Fromapfel, P.E. Environmental Engineer

de

April 3, 1984

Ms. Kay Brothers Kerr-McGee Chemical Corporation P.O. Box 55 Henderson, Nevada 89015

Dear Ms. Brothers:

On March 8, 1984, a hazardous waste investigation was conducted at the Kerr-McGee Chemical Corporation facility by the Nevada Division of Environmental Protection. The information was gathered in accordance with Section 444.764 of the Nevada Revised Statutes (NRS), and copies of the investigation reports are enclosed for your information.

If you have any questions concerning this letter, please contact me at (702) 885-4670 or toll free 1-800-992-0900, extension 4670.

Sincerely,

Alene Coulson Environmental Management Specialist Waste Management Section

de Enclosures

cc: Gary Lance, EPA, Region IX

March 21, 1984

Certified Mail #P22-1672990 Return Receipt Requested

Mr. R.B. Chase, Jr. Plant Manager Kerr-McGee Chemical Corporation P.O. Box 55 Henderson, Nevada 89015

Dear Mr. Chase:

The enclosed <u>Finding of Violation</u> and <u>Order</u> are issued by the Administrator of the Division of <u>Environmental Protection</u> pursuant to Nevada Revised Statutes (NRS) 444.766 and 444.768.

The <u>Finding of Violation</u> and <u>Order</u> relate to the violation of interim status requirements regarding storage of hazardous waste in a waste pile.

Any violation of the terms of this Order could subject Kerr-McGee to an action for appropriate relief pursuant to NRS 444.772, 444.774, or 444.778.

This Order is final and not subject to review unless within thirty (30) days after the date such Order is served, a request by written petition for a hearing is received by the State Environmental Commission, 201 South Fall Street, Room 221, Capital Complex, Carson City, Nevada 89710.

If you have any questions concerning this matter, please contact me at (702) 885-4670 or toll free 1-800-992-0900, extension 4670.

Sincerely,

3/3

Thomas J. Fronapfel, P.E. Environmental Engineer Waste Management Section

de Enclosures

ac sent to

March Cd., 1984

Certified Mail #P22-1672990 Return Receipt Requested

Mr. P.S. Chaso, Jr. Plant Manager Kerr-Tofee Chemical Corporation P.C. Bex 55 Henderson, Nevada 19015

Dear Mr. Chase:

The enclosed Finding of Violetian and Order are issued by the Administrator of the Office of Environmental Protection pursuant to Nevada Revised Statutes (RES) 446.766 and 444.763.

P22 1672990

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Sincerely,

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Thomas J. Fronapfa Environmental Engl Waste Management !

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FINDING OF VIOLATION

- I. This Finding is made on the basis of the following facts, to wit:
 - A. The State of Nevada, Division of Environmental Protection, under the authority of Nevada Revised Statutes (NRS) 444.764, conducted a hazard-ous waste inspection of the Kerr-McGee Henderson facility on March 8, 1984.
 - B. Based on the information gathered during the aforementioned inspection, the Division of Environmental Protection finds Kerr-McGee to be in violation of various State and Federal requirements governing the management of hazardous waste.
- C. Kerr-McGee is currently operating a waste pile for storage of chlorate process waste in an open basement.
 - D. Kerr-McGee did not indicate on their RCRA Part A Application that a waste pile would be operated, which is a violation of 40 CFR Part 270.13 and Nevada Administrative Code (NAC) 444.8745.
 - E. During the March 8, 1984, inspection, Kerr-McGee indicated that their "waste pile" is considered a tank. The Division has determined that the open basement does not meet the requirements for a tank and, therefore, Kerr-McGee is in violation of 40 CFR Part 262.34(a)(1) and NAC 444.9115.
 - F. There is no accumulation date marked on the "tank", which is in violation of the generator requirements of 40 CFR Part 262.34(a)(2) and NAC 444.8665(3).
 - G. The "tank" is not marked "Hazardous Waste", which is in violation of 40 CFR 265.34(a)(3) and NAC 444.8665(4).

Finding of Violation

Page -2-

- H. In addition, Kerr-McGee is in violation of the following requirements regarding storage of hazardous waste in a waste pile:
 - The security requirements of 40 CFR Part 265.14; 1.
 - 2. The inspection requirements of 40 CFR Part 265.15;
 - 3. The preparedness and prevention requirements of 40 CFR Part 265.31;
 - 4. The requirements of Subpart D of 40 CFR Part 265 - Contingency Plan and Emergency Procedures;
 - The requirements for Closure and Post-Closure specified in Subpart 5. G of 40 CFR Part 265; and
 - The requirements for waste piles specified in Subpart L of 40 CFR 6. Part 265.

March 21, 1984

Illomas 9 Fronzyfel Thomas J. Fronzyfel, P.E.

Environmental Engineer

TJF/de

ORDER

The following Order is issued this date pursuant to the duties vested in the Director by Nevada Revised Statutes (NRS) Chapter 444.730, and in accordance with NRS 444.760, 444.766, Subsection 1, and NRS 444.768.

On the basis of the <u>Finding of Violation</u> attached hereto and made part of this Order, the Administrator of the Division of Environmental Protection, pursuant to the authority delegated to him by the Director of the Department of Conservation and Natural Resources, has determined that Kerr-McGee Chemical Corporation is in violation of 40 CFR Parts 270.13, 262.34(a)(1), 262.34(a)(2), 262.34(a)(3), 265.14, 265.15, 265.31, and Subparts D. G. and L of 40 CFR Part 265 governing management of hazardous waste as outlined in the <u>Finding of Violation</u>.

IT IS HEREBY ORDERED:

That Kerr-McGee Chemical Corporation complete the following acts by the dates specified:

- 1. Immediately cease and desist the use of the "basement" area (tank) for storage of the chlorate process waste:
- Within thirty (30) days of receipt of this Order, provide the Division with a schedule for compliance which details the actions to be taken by Kerr-McGee to bring the facility into compliance with the requirements specified in the <u>Finding of Violation</u>; and
- 3. Within fifteen (15) days of receipt of this Order, representatives of Kerr-McGee Chemical Corporation shall appear in the offices of the Division of Environmental Protection to show cause why the Administrator should not proceed with civil actions against Kerr-McGee Chemical Corporation as provided in Nevada Revised Statutes for the aforementioned violations. With due regard and in a timely manner, these representatives shall contact Thomas J. Fronapfel, P.E., Environmental Engineer, at (702) 885-4670, to schedule this meeting. These representatives should be prepared to provide all relevant information with supportive documentation pertaining to the regulation violations.

Date

LAH. Dodgion, P.E.

Administrator

Division of Environmental Protection

March 21, 1984

Certified Mail #P22-1672990 Return Receipt Requested

Mr. R.B. Chase, Jr. Plant Manager Kerr-McGee Chemical Corporation P.O. Box 55 Henderson, Nevada 89015

Dear Mr. Chase:

The enclosed <u>Finding of Violation</u> and <u>Order</u> are issued by the Administrator of the Division of Environmental Protection pursuant to Nevada Revised Statutes (NRS) 444.766 and 444.768.

The <u>Finding of Violation</u> and <u>Order</u> relate to the violation of interim status requirements regarding storage of hazardous waste in a waste pile.

Any violation of the terms of this Order could subject Kerr-McGee to an action for appropriate relief pursuant to NRS 444.772, 444.774, or 444.778.

This Order is final and not subject to review unless within thirty (30) days after the date such Order is served, a request by written petition for a hearing is received by the State Environmental Commission, 201 South Fall Studet, Room 221, Capital Complex, Carson City, Nevada 89710.

If you have any questions concerning this matter, please contact me at (702) 885-4670 or toll free 1-800-992-0900, extension 4670.

Sincerely,

395

Thomas J. Fronapfel, P.E. Environmental Engineer Waste Management Section

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March 21, 1984

Certified Mail #P22-1672990 Return Receipt Requested

Mr. R.B. Chase, Jr. Plant Manager Kerr-McGee Chemical Corporation P.O. Box 55 Henderson, Nevada 29015

Dear Mr. Chase:

The enclosed <u>Finding of Violation</u> and <u>Order</u> are issued by the Administrator of the Division of Environmental Protection pursuant to Nevada Revised Statutes (NRS) 444.766 and 444.768.

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Sincerely,

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Thomas J. Fronapfi Environmental Eng Waste Management !

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-11

FINDING OF VIOLATION

- I. This Finding is made on the basis of the following facts, to wit:
 - A. The State of Nevada, Division of Environmental Protection, under the authority of Nevada Revised Statutes (NRS) 444.764, conducted a hazardous waste inspection of the Kerr-McGee Henderson facility on March 8, 1984.
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 - F. There is no accumulation date marked on the "tank", which is in violation of the generator requirements of 40 CFR Part 262.34(a)(2) and NAC 444.8665(3).
 - G. The "tank" is not marked "Hazardous Waste", which is in violation of 40 CFR 265.34(a)(3) and NAC 444.8665(4).

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Finding of Violation

Page -2-

- Н. In addition, Kerr-McGee is in violation of the following requirements regarding storage of hazardous waste in a waste pile:
 - 1. The security requirements of 40 CFR Part 265.14;
 - 2. The inspection requirements of 40 CFR Part 265.15;
 - 3. The preparedness and prevention requirements of 40 CFR Part 265.31;
 - The requirements of Subpart D of 40 CFR Part 265 Contingency Plan 4. and Emergency Procedures;
 - The requirements for Closure and Post-Closure specified in Subpart 5. G of 40 CFR Part 265; and
 - The requirements for waste piles specified in Subpart L of 40 CFR 6. Part 265.

Environmental Engineer

TJF/de

ORDER

The following Order is issued this date pursuant to the duties vested in the Director by Nevada Revised Statutes (NRS) Chapter 444.730, and in accordance with NRS 444.760, 444.766, Subsection 1, and NRS 444.768.

On the basis of the <u>Finding of Violation</u> attached hereto and made part of this Order, the Administrator of the Division of Environmental Protection, pursuant to the authority delegated to him by the Director of the Department of Conservation and Natural Resources, has determined that Kerr-McGee Chemical Corporation is in violation of 40 CFR Parts 270.13, 262.34(a)(1), 262.34(a)(2), 262.34(a)(3), 265.14, 265.15, 265.31, and Subparts D. G. and L of 40 CFR Part 265 governing management of hazardous waste as outlined in the <u>Finding of Violation</u>.

IT IS HEREBY ORDERED:

That Kerr-McGee Chemical Corporation complete the following acts by the dates specified:

- 1. Immediately cease and desist the use of the "basement" area (tank) for storage of the chlorate process waste;
- Within thirty (30) days of receipt of this Order, provide the Division with a schedule for compliance which details the actions to be taken by Kerr-McGee to bring the facility into compliance with the requirements specified in the <u>Finding of Violation</u>; and
- 3. Within fifteen (15) days of receipt of this Order, representatives of Kerr-McGee Chemical Corporation shall appear in the offices of the Division of Environmental Protection to show cause why the Administrator should not proceed with civil actions against Kerr-McGee Chemical Corporation as provided in Nevada Revised Statutes for the aforementioned violations. With due regard and in a timely manner, these representatives shall contact Thomas J. Fronapfel, P.E., Environmental Engineer, at (702) 885-4670, to schedule this meeting. These representatives should be prepared to provide all relevant information with supportive documentation pertaining to the regulation violations.

Date

LAH. Dodgion, P.E.

Administrator

Division of Environmental Protection

February 17, 1984

Ms. Kay Brothers
Kerr-McGee Chemical Corporation
P.O. Box 55
Henderson, Nevada 89015

Dear Ms. Brothers:

Pursuant to our telephone conversation of February 13, 1984, I have scheduled an Interim Status Inspection of your facility for March 7, 1984, at 1:00 p.m. Enclosed is a copy of the inspection form. Please have all requisite reports and records available at the time of inspection.

Upon completion of the report, I would like to visually inspect and photograph the waste handling facilities.

Please call me if you have any questions regarding this inspection.

Sincerely,

Douglas J. Martin Environmental Management Specialist

Waste Management Section

de Enclosure March 7, 1984

Mr. Verne Rosse State of Nevada Division of Environmental Protection Capitol Complex 201 South Fall Street Carson City, NV 89710

Re: RCRA Groundwater Monitoring

Dear Mr. Rosse:

Kerr-McGee Chemical Corporation's Henderson facility conducted semi-annual RCRA groundwater monitoring as required in 40 CFR 265.92(d)(1) in December, 1983. Analytical results were statistically compared with baseline values as required under 40 CFR 265.93(c).

Statistically significant increases were observed for the following parameters in the following wells:

Surface Impoundments

M-1	(upgradient)	_			specific	conductivity
M-2		-	рН	and	specific	conductivity
M-8		_	рН		_	_
M-9		_	_		specific	conductivity

Landfill

Additional groundwater samples were colleted as required under 40 CFR 265.93(c)(2). Statistical comparisons performed on these analytical results indicated the following increases:

Surfact Impoundments

M-1	(upgradient)	_	specific	conductivity
M-9		_	specific	conductivity

Landfill

M-5 (upgradient) - pH H-28 - pH I.AR - 9 1984

ENVIRONMENTAL

PROTECTION

Mr. Verne Rosse Page 2 March 7, 1984

Analytical results, statistical comparisons, resample results, and water levels are attached.

As you know, specific conductivity of groundwater in this area varies significantly. The surface impoundments downgradient well (M-9) analyses indicate a statistically significant increase in specific conductivity when compared to the upgradient well (M-1) analyses. However, baseline values for the downgradient well (M-9) range from 15,000-40,000 µmhos. The attached specific conductivity values for M-9 fall within baseline range. No other parameters indicate a statistically significant increase.

Even though the landfill downgradient monitor well (H-28) analyses indicate a statistically significant increase when compared to the upgradient well (M-5) analyses, the individual values are within the 7.0-7.5 pH range of the H-28 baseline values. No other parameters indicate a statistically significant increase. Of particular note is the fact that chromium is not detected in the landfill monitoring wells. As you know, chromium is the parameter most representative of the waste contained in the landfill. The absence of chromium in the downgradient wells indicates there has been no migration. Water levels in the landfill wells have decreased significantly, which is most likely a result of the Stauffer groundwater cleanup program in the area.

Based on the above, it appears the regulated units have not affected groundwater quality. KMCC will continue with RCRA groundwater monitoring, as specified under 40 CFR 265.92(d).

If there are any questions, please contact me or K. Brothers at 565-8901

Sincerely,

KERR-McGEE CHEMICAL CORPORATION

R. B. Chase, Jr.

Plant Manager

I bely O Chase, I

RBC: jc Attachment

Bill Wilson, EPA, Region IX

KERR-MCGEE CHEMICAL CORPORATION HENDERSON FACILITY GROUNDWATER QUALITY PARAMETERS*

SURFACE 1	empoundm <u>e</u> nts		REPLICAT	RS		MEAN	VARIANC	B t
M-T (Ob)	Hq	3 50			,		·,	· -
- -	SpCd	7.53 15400	7.56 15500	7.56	7.59	7.56	0.0006	2.401
and the second	TÒC	1.55	1.39	15500 1.38	15500	15475	2500	18.203
	TOH	0.195	0.200	0.210	1.37 0.215	1.42 0.205	0.007	2 376
H-2			•		• • • • • • • • • • • • • • • • • • • •	01.203	0.00008	
	pH	7.72	7.73	7.71	7.72	2 10	* ***	
1	ŠpCd TOC	13400 1.99	13500	13500	13600	7.72 13500	0.00007 66 67	3.409
*	TOH	0.250	2.09 0.240	2.11 0.200	2.01	2.05	0.003	8.385 2.230
H-8			0.240	0.200	0.210	0.225	0.0006	4.230
· ·	Жa	7.69	7.70		_			
<u>,</u>	pH SpCd	8310	8370	7.69 8370	7.74	7.71	0.0006	3.313
	TÒC	1.70	1.66	1.71	8360 1.69	8353	825	17.142
	TOR	0.220	0.230	0.220	0.250	1.69 0.23	0.0005 0.0002	2.314
M-9						7120	0.0002	_
	pH SpCd	7.00	7.00	7.07	7.00	7 01		_
	TOC	27700 4.32	28000 4.14	28000	28000	7.01 27925	0.001 22500	1.009
	TOH	0.620	0.590	4.28 0.620	4.17	4.23	0.007	78.946 1.726
Background	1 M_1		**	0,020	0.600	0.61	0.0002	
	pH	v	aluar wasu	14 -6 44 .		ł		
	ŠpCd		alues resu 4 per quar	TAPI	eplicates	7.2	0.097	
	TÕC TOH	Ť	ruesdail L	aboratory		11805 11.7	155600	
	LON			_		436	71.7 54.200	
LANDFILL							341200	
M-5 (UP)					* * *			
	рĦ	7.50	7.39	7.43	7.40			
	ŠpCd TOC	10200	10200	10200	10200	7.43 10200	0.002	6.331
No.	TOH	68.78 0.135	68.29 0.130	68.82	69.47	68.84	0 0.234	2.601
M-6		0.133	0.130	0.133	0.138	0.134	0.00001	0.302
M-0	рH	7 25	5 0-	_				
\mathcal{J}	ŠpCd	7.35 9450	7.22 9460	7.27	7.29	7.28	0.003	5 479
Sec.	TÒC	17.65	18.14	9470 18.28	9460	9460	66.7	5.473 9.762
	TOH	0.186	0.190	0.183	18.32 0.189	18.10 0 .187	0.095	2.043
M-7					-7107	V.10/	0.00001	
	pH_	6.84	6.70	6.87	6 07			
	ŠpCd TOC	9670	9660	9680	6.87 9670	6.82 9670	0.007	2.780
	TOH	19.70 1.230	19.33 1.250	19.12	19.26 .	19.35	66.7 0.061	7.730 1.985
H-28			1.230	1.210	1.220	1.23	0.0003	
11-20	рН	7.68	*					
	SpCd	8380	7.49 8390	7.66	7.38	7.55	0.020	6.934
	TOC	11.34	11.55	8390 11.50	8390 11.61	838 8	2 5	20.144
"	ТОН	0.132	0.134	0.135	0.138	11.50 0.135	0.013	2.348
Background						-, <u>1</u> , 2	0.000006	•
	pH .					14 44		
	ŠpCd TOC					6.34 10469	0.113	
	TOH					62.3	40958 47.7	
	•					1798	229.3	

* Units - pH, units; SpCd, umhos, TOC and TOH, mg/l SAMPLE DATE: December 13, 1983

KERR-MCGEE CHEMICAL CORPORATION HENDERSON FACILITY GROUNDWATER QUALITY PARAMETERS*

SURFACE IMPOUNDMENTS	Na	Pe	Ma	Ct**	Phenol	Cl	804
M-1 (UP)	1380	0.11	0.32	9.5	<0.003	2060	1060
M-2	2720	0.03	0.07	5.6	0.003	2400	2050
M-8	881	0.10	0.05	6.7	<0.003	1080	1090
M-9	3960	0.07	0.17	29.7	<0.003	5240	2610
LANDFILL							
M-5 (UP)	1280	14.4	1.2	<0.02	0.210	2450	2230
M-6	1390	19.1	1.8	<0.02	0.035	1980	2490
M-7	1500	20.2	1.5	<0.02	0.090	1980	2580
H-28	1130	74.6	2.0	<0.02	0.020	1880	1810

^{* =} Analysis results in mg/l.

^{** =} Cr added since it is indicative of waste stored or disposed at the facility.

SAMPLING DATE: December 13, 1983

KERR-MCGEE CHEMICAL CORPORATION
HENDERSON FACILITY
GROUNDWATER QUALITY PARAMETERS
(RESAMPLING*)

SURFACE IMPOUNDMENTS	OUNDMENTS	REPLICATES	MEAN	VARIANCE	비
M-1 (UP)	Sp.cd.	13600; 13500; 13500; 13600	13550	3333	8.650
M-2	ph Sp.Cd.	7.23; 7.21; 7.20; 7.23 11800; 11700; 11900; 11800	7.22	0.0002	0.248
M-8	Ħđ	7.20: 7.22: 7.24: 7.25	7.23	0.0005	0.311
₩-9	Sp.Cd.	26300; 25900; 26000; 26200	26100	33333	69.54
LANDFILL					
K-5 (up)	Hď	6.88; 6.89; 6.86; 6.88	6.88 88	0.003	3.130
M-6	Hď	6.44; 6.49; 6.51; 6.51	6,49	0.001	0.861
H~28	Hd	7.20: 7.24: 7.24: 7.25	7.23	9000.0	5.194

Units - pH. units; Sp.Cd., umhos SAMPLE DATE: February , 1984

KMCC HENDERSON FACILITY

WATER LEVELS

RCRA WELLS 12/83 Surface Impoundments M-1 (upgradient) 1749.43 M-21744.96 8-M 1745.17 M-91744.12 <u>Landfill</u> M-5 (upgradient) 1716.00 (6/83) 1715.04 M-61696.00 1697.07 (3/83) M-71700.50 1701.23 (3/83)

1696.50

1698.08 (1/83)

H-28

February 27, 1984

Ms. Kay Brothers
Kerr-McGee Chemical Corporation
P.O. Box 55
Henderson, Nevada 89015

Re: Hazardous Waste Activity - Annual Report

Dear Ms. Brothers:

Under Nevada hazardous waste management regulations, those persons which notified the U.S. Environmental Protection Agency of hazardous waste activity as defined by the Resource Conservation and Recovery Act (RCRA) are required to complete an annual report. The enclosed instructions and forms are provided to aid you with the completion of your 1983 annual report. Your report is to be completed and returned by May 1, 1984, to the following address:

Department of Conservation and Natural Resources Division of Environmental Protection Waste Management Section 201 South Fall Street, Room 221 Capitol Complex Carson City, Nevada 89710

If your firm did not generate, treat, store, or dispose of regulated quantities of hazardous waste during 1983, you are required to only complete and return the appropriate one-page status sheet for nonregulated generators or facilities (enclosed).

If you have any questions about the procedures or your obligations, please contact the Nevada Division of Environmental Protection, Waste Management Section, at (702) 885-4670.

Sincerely,

H. LaVerne Rosse, P.E. Program Director Waste Management Section

de Enclosures

February 17, 1984

Ms. Kay Brothers
Kerr-McGee Chemical Corporation
P.O. Box 55
Henderson, Nevada 89015

Dear Ms. Brothers:

Pursuant to our telephone conversation of February 13, 1984, I have scheduled an Interim Status Inspection of your facility for March 7, 1984, at 1:00 p.m. Enclosed is a copy of the inspection form. Please have all requisite reports and records available at the time of inspection.

Upon completion of the report, I would like to visually inspect and photograph the waste handling facilities.

please call me if you have any questions regarding this inspection.

Sincerely,

Douglas J. Martin
Environmental Management
Specialist
Waste Management Section

de Enclosure



February 1, 1984

FEB - 0 1984
ENVIRONMENTAL
PROTECTION

Mr. Verne Rosse State of Nevada Division of Environmental Protection Capitol Complex 201 South Fall Street Carson City, NV 89710

Re: Groundwater Monitoring

KMCC, Henderson, NV Facility

Dear Mr. Rosse:

As we discussed at our December 5 meeting with you, elevated chromium concentrations were found in upgradient and downgradient monitor wells that were installed around surface impoundments S-1 and P-1. We initiated a groundwater assessment program to determine possible sources of this chromium contamination, since it was apparent, from upgradient well data, the source was not from the regulated units. During the months May to October, 1983, we installed a total of 15 additional groundwater monitoring wells. These wells are shown on the attached map. Wells previously installed around the landfill for compliance with RCRA are not shown. Well completion data and chromium analyses are attached.

Sources of Contamination

The source of chrome contamination has been traced to the basements of Units 4 and 5. These basements have been used for many years as sumps to collect sodium chlorate process liquor, spillage, wash water, and storm water runoff. These comingled liquids are pumped back to the process. These concrete basements were constructed as part of the original buildings in the early 1940's. As one would expect, over the years, deterioration and cracking has occurred.

Sodium dichromate is added in concentrations up to 4-5 grams per liter to the sodium chlorate process cell liquor as a pH buffer and a corrosion inhibitor. This is the only source of chromium at the KMCC Henderson facility.

Mr. Verne Rosse Page 2 February 1, 1984

As we also explained to you, a new sodium chlorate plant, now in the early design phase, will eliminate the use of these basements. The new plant will be operational August 1, 1988.

In the interim, areas of structural deterioration and cracking in the basements have been or are being repaired with sealants to alleviate leakage. In addition, we have instituted the following procedures:

- a. Pumping liquid back to the process from the basement sumps as soon as possible rather than allowing it to accumulate.
- b. Pumping the two monitor wells directly north of the basements back to the process as continuously as practicable.

Plume Movement

Groundwater under the KMCC Henderson facility moves to the north, northwest (see attached map). The eastern extent of the chromium plume has been located on KMCC property just west of the KMCC-Timet property line. The western boundary extends north from Unit 3 and west of the steam plant between wells M-3 and M-4. The chromium concentration decreases to the north with increasing distance from Units 4 and 5.

Chromium Concentrations

As the attached data indicate, chromium concentrations in a number of our groundwater monitoring wells have dropped significantly over the past months. This reduction in chromium is thought to have resulted from our efforts to:

- Repair cracks and structural deterioration in the Unit 4 and Unit 5 basements,
- b. Pump various groundwater monitoring wells back to the process as practicable, and
- c. Implement procedures to return liquid which accumulates in the basement sumps back to the process as soon as possible.

Mr. Verne Rosse Page 3 February 1, 1984

Summary

KMCC has an active program to identify and control the chromium plume that appears in groundwater under our Henderson facility. It appears that our efforts have been successful in reducing chromium values in a number of wells. These efforts will continue and we will keep the NDEP informed of our progress by periodic reports to your office.

If there are any questions regarding the above, please contact me or Kay Brothers.

Sincerely,

KERR-McGEE CHEMICAL CORPORATION

R. B. Chase, Jr.

PB Chust, h.

Plant Manager

RBC:jc
Attachments

WELL DATA

Well M-1

Total Depth	Depth - 45'		Chromium Concentrations	
I.D.	- 5"	Date	ppm	
Casing	- Steel	1/14/82 6/1/82	12.2 12.9	
Casing Elevation	- 1,792.68'	10/5/82 1/28/83 12/14/83	12.7 9.9 9.5	

The 25% reduction in chromium may reflect revised procedures for handling basement liquors (i.e., returning liquor from the basements to the process as soon as possible).

Well M-2

Total Depth - 40'		Chromium Concentrations	
I.D.	- 5"	Date	ppm
Casing	- Steel	1/14/82 6/1/82	9.0 10.0
Casing Elevation	n - 1,780.02'	10/5/82 1/7/83 12/15/83	9.15 10.7 5.6

This approximate 50% reduction in chromium content may be due to extended pumping of M-3, a well near M-2.

Well M-3

Total Depth - 40'		Chromium Concentrations		
I.D.	- 5"	Date	ppm	
Casing	- Steel	1/14/82 6/1/82	31.1 46.7	
Casing Elevation	- 1,780.46'	9/12/83 10/83 Avg. 11/83 Avg. 12/83 Avg.	37.5 30.0 25.0 20.0	

This approximate 40% reduction in chromium is thought to be a result of pumping M-3 (rate approximately 15 gpm) for an extended period of time.

Well M-4

Total Depth - 40'	Chromium Conc	Chromium Concentrations		
I.D 5"	Date	ppm		
Casing - Stee	1/14/82 6/1/82	0.18 0.01		
Casing Elevation - 1,78	1.45 8/24/82	<0.02		

Well M-4 indicates the western extent of the chromium plume.

Total Depth - 40'		Chromium Concentrations	
I.D.	- 5"	Date	ppm
Casing	- Steel	10/5/82 1/7/83	5.1 6.0
Casing Elevation	- 1,780.00'	3/10/83 6/22/83 12/14/83	0.67 2.96 6.7

Additional samples will be collected and analyzed during the month of February.

Well M-9

Total Depth - 40'		Chromium Concentrations	
I.D.	- 5"	Date	ppm
Casing	- Steel	10/5/82 1/7/83	16.3 18.5
Casing Elevation	- 1,778.92'	3/10/83 6/22/83 12/14/83	24.5 26.0 29.7

M-9 is located approximately 75' east of M-3; however, it only makes approximately 1-2 gpm. Between the two wells there appears to be a "sink" as indicated on the attached map. It is thought that the extended pumping of M-3 has essentially equalized the chromium concentration in this "sink" area.

Well M-10

Total Depth - 63'		Chromium Concentrations		
I.D.	- 5"	Date	ppm	
Casing	- Steel	6/20/83 8/24/83	<0.02 <0.02	
Casing Elevation	on - 1.834.76'			

As shown on the attached map, this well is located upgradient of the Unit 4 and Unit 5 basements.

Well M-11

Total Depth	- 53	Chromium Conce	entrations
I.D.	- 5 "	Date	ppm_
Casing	- Steel	6/14/83 8/24/83	72 92
Casing Elevati	on - 1,814.45'	10/83	44

The approximate 50% drop in chromium concentration in this well, located north of Unit 5, is a result of pumping M-11 and repairing cracks in the Unit 5 basement.

Total Depth	- 52'	Chromium Conc	entrations
I.D.	~ 5"	Date	ppm
Casing	- Steel	6/14/83 8/24/83	44 42
Casing Elevati	on - 1,814.90'		

Additional samples will be collected and analyzed during the month of February.

Well M-13

Total Depth - 48'		Chromium Concentrations		
I.D.	- 5"	Date	ppm	
Casing	- Steel	6/20/83 8/24/83	0.14 1.1	
Casing Elevati	on - 1,814.23'			

Well M-13 indicates the western extent of the chromium plume.

Well M-14

Total Depth - 38'		Chromium Concentrations		
I.D.	- 2"	Date	ppm	
Casing	- PVC	6/20/83 8/24/83	0.34 0.41	
Casing Elevation	on - 1,759.43'			

Well M-14 indicates the western extent of the chromium plume.

Well M-15

Total Depth	- 41'	Chromium Conc	Chromium Concentrations	
I.D.	- 2"	Date	ppm	
Casing	- PVC	6/20/83 8/24/83	6.5 6.3	
Casing Elevation	on - 1 750.31'	•		

Additional samples will be collected and analyzed for chromium during the month of February.

Total Depth	- 38'	Chromium Conce	entrations
I.D.	– 2 ⁿ	Date	ppm
Casing	- PVC	6/20/83 8/24/83	9.0 7.0
Coging Flowsti	on - 1 762 20		

Casing Elevation - 1,762.20

Additional samples will be collected and analyzed for chromium during the month of February.

Well M-17

Total Depth	- 42'	Chromium Concentrations	
I.D.	- 2 "	Date	ppm
Casing	- PVC	6/20/83 8/24/83	7.0 6.7

Casing Elevation - 1,770.22'

Additional samples will be collected and analyzed for chromium during the month of February.

Well M-18

Total Depth - 28'		Chromium Concentrations	
I.D.	- 2"	Date	ppm
Casing	- PVC	8/24/83	0.73
Casing Elevatio	on - 1.738.93'		

Well M-18 indicates the eastern extent of the chromium plume.

Well M-19

Total Depth	- 40'	Chromium Conce	ntrations
I.D.	- 2"	Date	ppm
Casing	- PVC	8/24/83	0.03
Casing Elevation	n - 1,766.93'		

Well M-19 indicates the eastern extent of the chromium plume.

 Total Depth
 - 44'
 Chromium Concentrations

 I.D.
 - 2"
 Date
 ppm

 Casing
 - PVC
 8/24/83
 0.02

Casing Elevation - 1,798.21

Well M-20 indicates the eastern extent of the chromium plume.

Well M-21

Total Depth - 43' Silted In

I.D. - 2"

Casing - PVC

Casing Elevation - 1,790.50'

Well M-22

Total Depth - 35'

I.D. - 2"

Casing - PVC

Chromium Concentrations

Date ppm

8/24/83 1.5

Casing Elevation - 1,758.91

Well M-22 indicates the eastern edge of the chromium plume.

<u>Well M-23</u>

Total Depth - 43'

I.D. - 2"

Casing - PVC

Chromium Concentrations

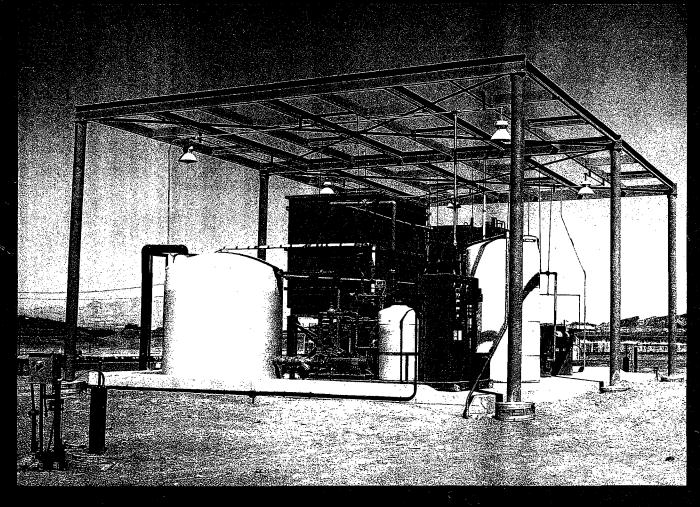
Date ppm

8/24/83 3.5

Casing Elevation - 1,717.61'

Additional samples will be collected and analyzed for chromium during the month of February.

An Economical Solution to Heavy Metal Removal From Groundwater





Removal of heavy metals from contaminated groundwater at remote desert site.

Andco Electrochemical System treating hexavalent chrome contaminated groundwater for down gradient reinjection of treated effluent. The system operating at 125 gpm reduces hexavalent chromium from 3.5 ppm to <.005 ppm before reinjection.

GROUNDWATER SAMPLING AND ANALYSIS PLAN

Groundwater System

The groundwater monitoring system consists of eight wells. Four wells each are located around the pond (P-1) and landfill with one well hydraulically upgradient and three wells downgradient of each operational unit. The following sampling and analysis plan is based on the attached corporate outline by T. Bentley, et al, April 1, 1981.

Sample Collection

Groundwater samples shall be collected of all wells on a quarterly basis for one year and analyzed for parameters listed below. After the first year, wells around active and closed waste management units shall be sampled semi-annually and analyzed for groundwater quality or indicator parameters as is appropriate. When possible, samples shall be collected by pumping. At least one case volume shall be removed if samples are collected by bailing. At the time of sampling, water elevations shall be determined.

Sample Preservation and Shipment

Samples for pesticides, herbicides, and phenol shall be collected at the well and preserved in glass bottles. Preservation for pesticides and herbicides is cooling to $4^{\circ}C$ and for phenols 1 g CuSO₄ and adjusting pH to below 2 with phosphoric acid using methyl red as an indicator and storage at $4^{\circ}C$.

Samples for the remaining parameters listed in 40 CFR 265.92, b-1, -3, shall be taken from a five-gallon sample collected from each well. The following parameter shall be preserved as indicated below:

Parameter	Sample Container	Preservation	
Metals, As Radiological	Plastic (P) or Glass (G)	Acidify to pH <2 with HNO_3	
F, Cl, SO ₄ , NO ₃ (N), Coliform, Specific Conductance	11	Cool to 4°C	
Total Organic Carbon, Total Organic Halogen	*11	Acidify to pH <2 with H_2SO_4 or HCl	

Chain of custody shall be indicated by a form specifically to accompany samples and/or some other equivalent documents which indicate that samples arrived at laboratory undisturbed and in good condition, e.g., shipping documents or statements in laboratory report. Samples shall be packed for shipment in suitable containers (e.g., in chests to preserve temperature) and sent to a commercial laboratory for analysis.

Sample Analysis

The laboratory shall indicate that all analyses were performed using methods in the EPA publication, Methods for Chemical Analysis of Water and Wastes, a recognized equivalent, or shall produce such evidence upon request. Analysis of pH and specific conductance shall be done on site using suitable standards to calibrate instruments. For specific conductance, measurement shall be taken at 25°C.

Several parameters listed in 40 CFR 265.92 must be determined in quadruplicate on upgradient well(s). They are specific conductance, pH, total organic carbon, and total organic halogen.

The results of analyses shall be summarized in a report to the Region IX Administrator with a copy sent to the Nevada State Department of Environmental Protection, not later than 15 days after receipt of complete laboratory report.

EXPLANATION OF GEOLOGICAL AND WELL CONSTRUCTION DATA

KERR-McGEE HENDERSON FACILITY

RCRA INTERIM STATUS GROUNDWATER MONITORING PROGRAM

Enclosed are: 1) Map showing RCRA Interim Status Monitor Well location.

- 2) Well construction diagrams for RCRA Interim Status Groundwater Monitoring Wells M-1, M-2, M-5, M-6, M-7, M-8, and M-9. (Note: No construction diagram is shown for Well: H-28; however, well construction details are enclosed.)
- 3) Tables showing detailed lithological description of Wells M-5, M-6, M-7, M-8, M-9, and H-28. (Note: The detailed lithological descriptions for Wells M-1 and M-2 are shown on the well construction diagrams.)
- 4) Well construction and completion tables for Wells M-5, M-6, M-7, M-8, and M-9. (Note: The detailed well construction and completion tables for Wells M-1 and M-2 were not made. Details of construction are shown on the well construction diagrams.)

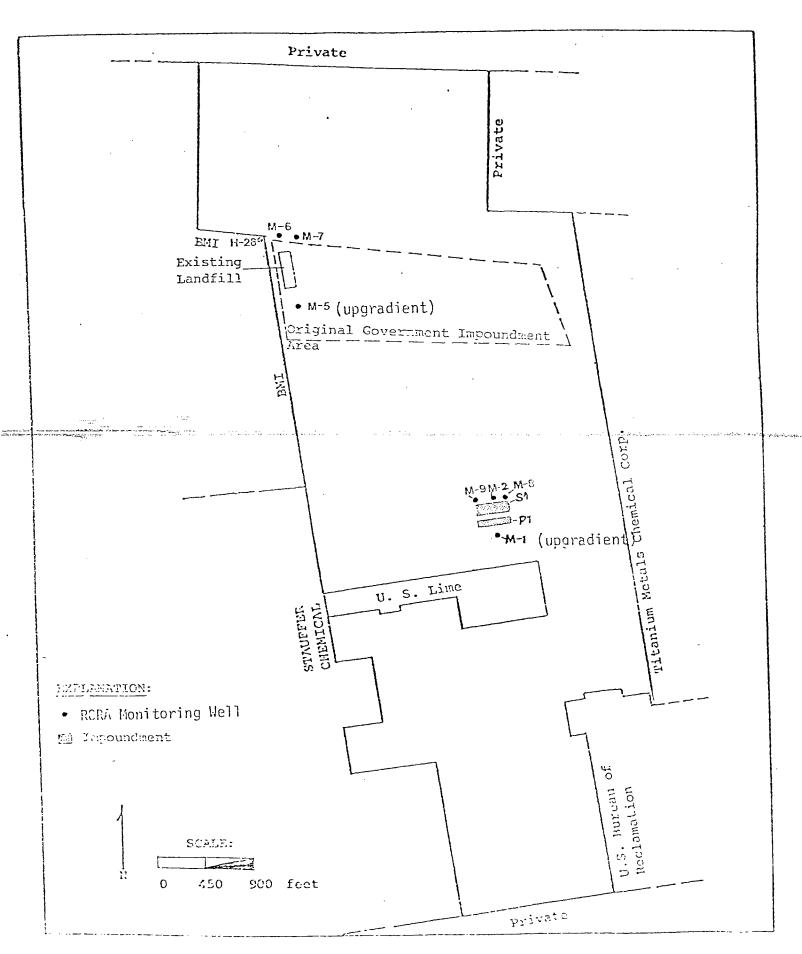
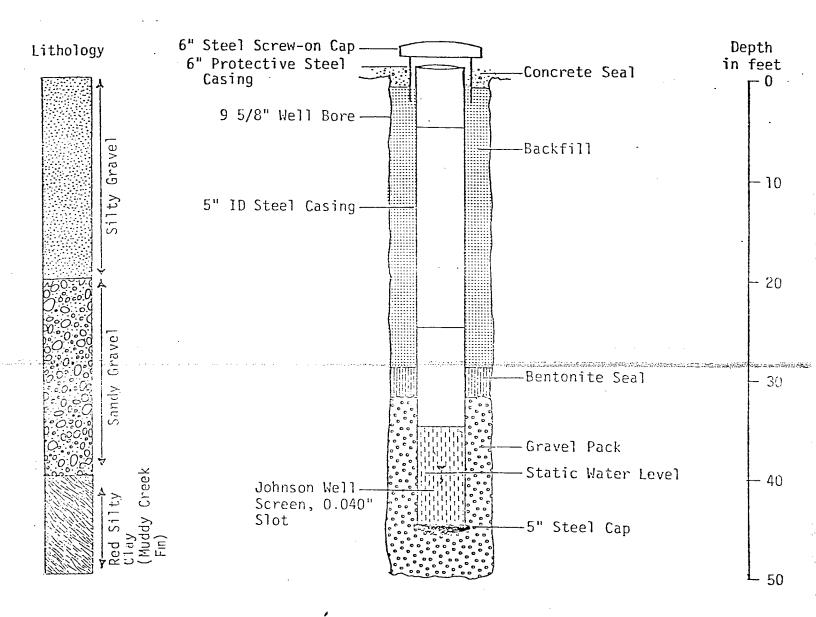


Figure 1.

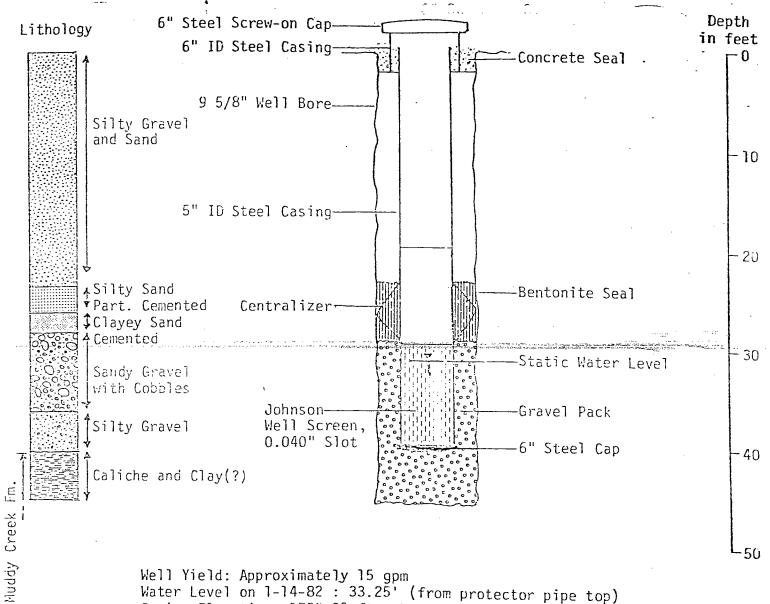
K-M CHEMICAL CORPORATION Henderson, Nevada Facility Well No. M-1



Well Yield: Approximately 1/2 gpm Water Level on 1-14-82: 41.05' (from protector pipe top) Casing Elevation: 1792.68' above MSL

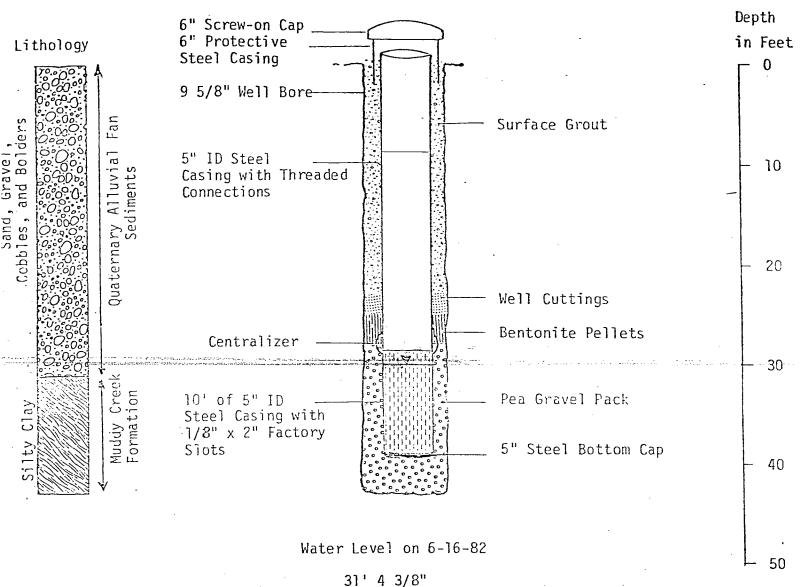
Geological and Well Construction Data from Converse Consultants 81-3258, 11-13-81.

K-M CHEMICAL CORPORATION Henderson, Nevada Facility Well No. M-2

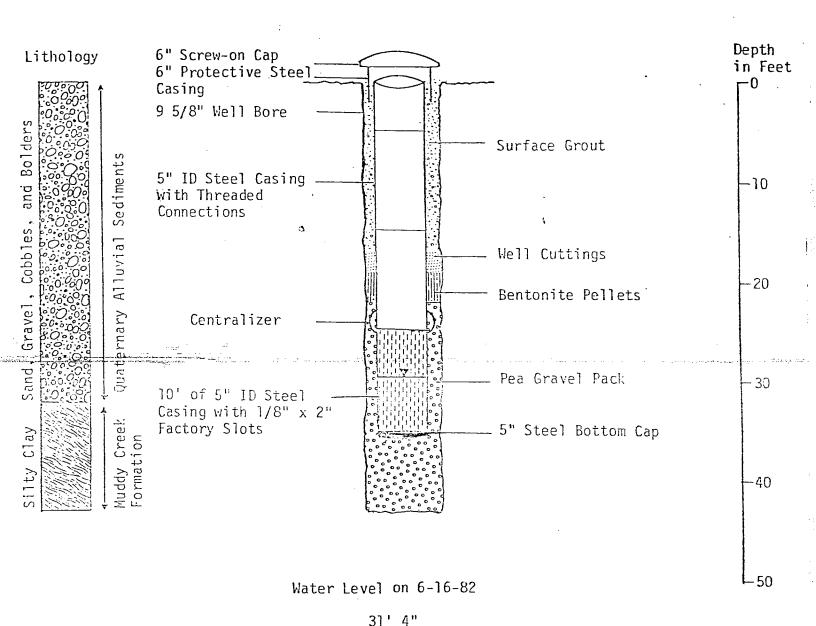


Well Yield: Approximately 15 gpm Water Level on 1-14-82 : 33.25' (from protector pipe top) Casing Elevation: 1780.02 ft. above MSL

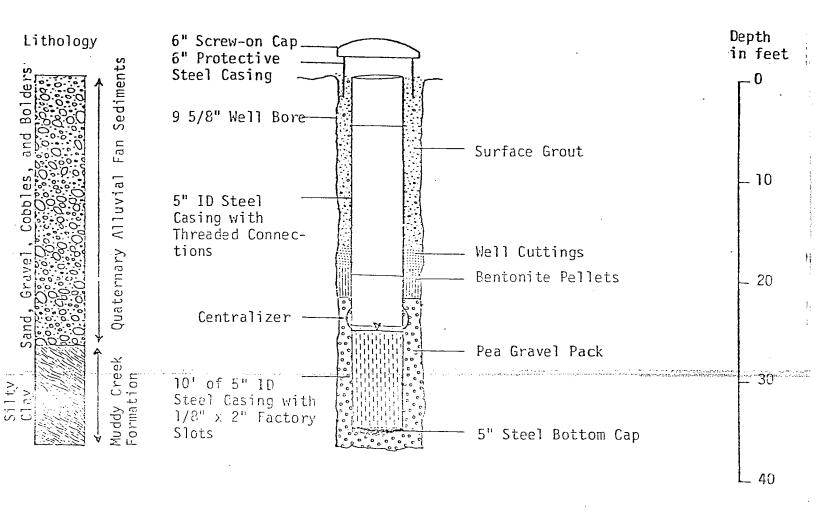
Geological and Well Construction Data from Converse Consultants 81-3258, 11-13-81.



Measured from Top of Protective Casing



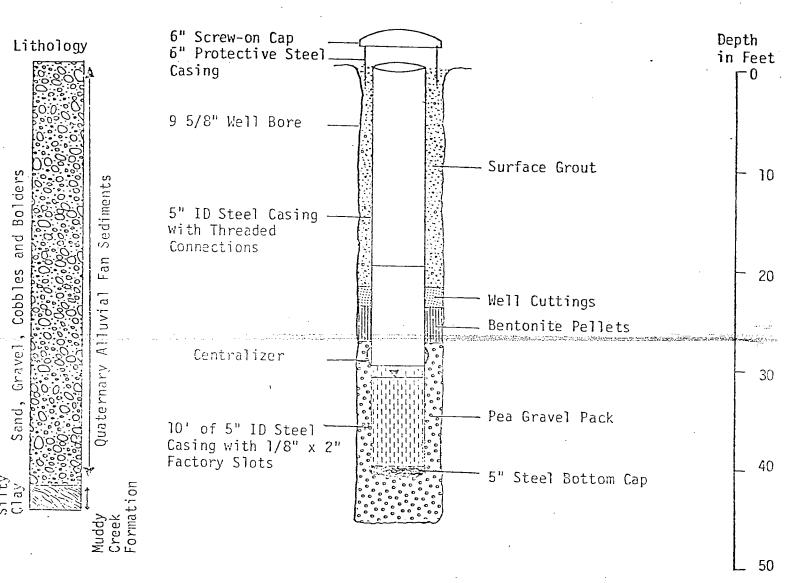
Measured from Top of Protective Casing



Water Level on 6-16-82

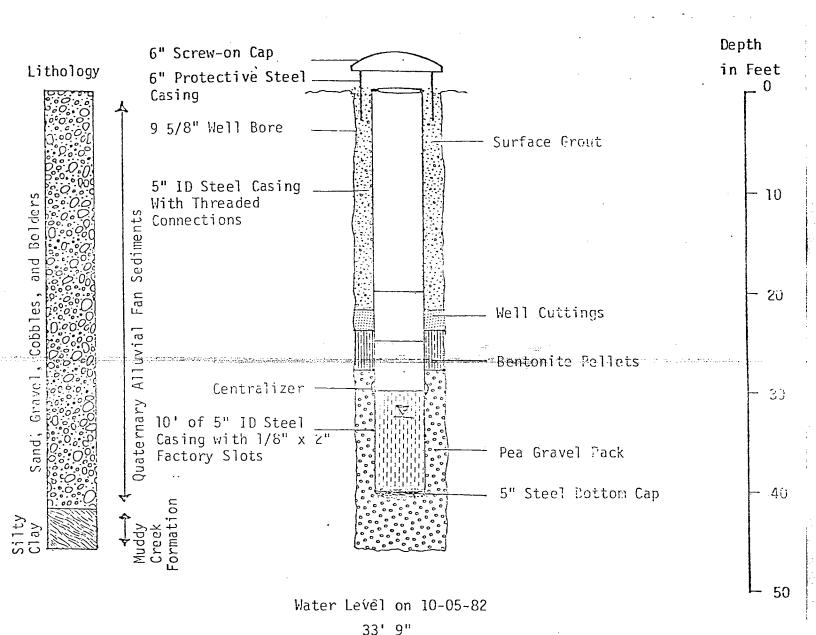
27' 11 3/4"

Measured from Top of Protective Casing



Water Level on 6-16-82 33' 8"

Measured from Top of Protective Casing



Measured from Top of Protective Casing

	Depth in Feet	Lithology Description
	0-12.0	Silty sandy gravel
	12.0-15.0	Partially cemented sand and gravel
	15.0-20.0	Cobbles
	20.0-23.0	Silty sand and gravel
	23.0-24.5	Gravel and sand with cobbles
	24.5-25.5	White clay and gravel with gypsum and cobbles
	25.5-28.0	Brown clayey silt with about 50% gypsum
	28.0-31.0	Brown clayey silt with sand and gravel and white streaks
n-: a	31.0-43.0	Brown clay with occasional thin caliche lenses

Top of Muddy Creek at 31 feet

Depth in Feet	Lithology Description
0-29.0	Silty gravel and sand; slightly cemented from 12' - 13'
29.0-32.0	Silty sand and gravel with gypsum
32.0-32.5	Brown silty clay
32.5-34.0	Silty sand and gravel
34.0-38.0	Brown silty clay
38.0-43.0	Brown clay with sand and gravel

Top of Muddy Creek at 32 feet

Depth in Feet	Lithology Description
0-15.0	Silty gravel and sand
15.0-18.0	Silty gravel and sand with gypsum
18.0-22.5	Silty gravel and sand with abundant gypsum; approximately 40% gypsum
22.5-28.0	Light brown silty clay with thin beds of caliche. Cemented from 27' - 27.5'
28.0-29.5	Clayey gravel (Not cemented)
29.5-37.0	Brown silty clay.

Top of Muddy Creek at 29.5'

Depth in Feet	Lithology Description
0-25.0	Silty sandy gravel
25.0-25.5	White dry clayey sand
25.5-33.0	Silty sandy gravel with cobbles; gypsum stringer at 27'
33.0-40.5	Caliche-cemented sand and gravel
40.5-42.5	Sandy gravel slightly cemented
42.5-45.C	Silty clay

Top of Muddy Creek at 42.5'

Depth in Feet	Lithology Description
0-19.0	Sand and gravel; unconsolidated
19.0-20.0	Harder sand and gravel with some caliche cementation
20.0-35.0	Sand and gravel; not as hard. Some cementation
35.0-42.0	Gravel, sand, clay, and silt; clay reddish brown; some gypsum at 37'
42.0-45.0	Silty clay and sand

Top of Muddy Creek @ 42.0

LITHOLOGY LOG

FOR HENDERSON

WELL NO. H-28

Description

Sand, silty to clayey, grayish-brown very fine to very coarse (poorly sorted), and gravel, pebbles, cobbles and boulders, rounded to subangular; also with layers of caliche and caliche-cemented sand and gravel

Depth Below Land Surface (feet)

 $0 - 44\frac{1}{2}$

Clay, silty, to silt, clayey, light brown with traces of sand and gravel in matrix; also, with occasional thin layers of sand, reworked caliche, and caliche (Muddy Creek Formation)

 $44\frac{1}{2} - 51$

Data from Geraghty and Miller, Inc., October, 1980.



December 7, 1983

RECEIVED

DEC 12 1303

ENVIRONMENTAL PROTECTION

H. LaVerne Rosse, P.E.
Program Director
Waste Management Section
State of Nevada
Division of Environmental Protection
Capitol Complex
Carson City, NV 89710

Dear Mr. Rosse:

We appreciate meeting with you, Tom Fronapfel, and Marvin Tebeau on December 5, 1983 to discuss your November 8, 1983 letter regarding the RCRA hazardous waste management program for Kerr-McGee Chemical Corporation's Henderson facility.

The following summarizes the major points of our discussion and outlines future KMCC actions regarding our hazardous waste management program:

- 1. EPA's consultant, Ertec Rocky Mountain, Inc., conducted their review of the Henderson facility's groundwater monitoring program in March of 1983. Since March, our baseline data have been completed for all groundwater monitoring wells around the landfill and pond P-1. A map showing these wells is attached. The first semi-annual sampling will be completed this month. Statistical comparisons, as required in 40 CFR 265.93 (b), will be calculated upon receipt of the analyses and reported to you, if appropriate.
- 2. As we agreed, groundwater monitoring data do not indicate that any hazardous waste constituents have migrated from the regulated units to the groundwater. Therefore, we will be in compliance with the requirements of 40 CFR 265.111 at closure
- 3. Closure and post-closure plans previously submitted for the hazardous waste landfill and pond P-1 will be amended to address the items outlined in the review transmitted with your November 8, 1983 letter. The extensive data required in items 4, 5, and 6 of page 4 of the review will be prepared by a soils engineering consultant. Because of the time required to collect all

H. LaVerne Rosse, P.E. Page 2
December 7, 1983

these data, we anticipate completing the necessary revisions and submitting our response to you by the end of January, 1984.

We understand this letter, together with our meeting on December 5, meets the 30-day reply condition imposed by your November 8 letter.

If there are any questions regarding our meeting or future plans, please contact me or K. Brothers at 565-8901.

Sincerely,

KERR-McGEE CHEMICAL CORPORATION

R. B. Chase, Jr.

Joep B. Church.

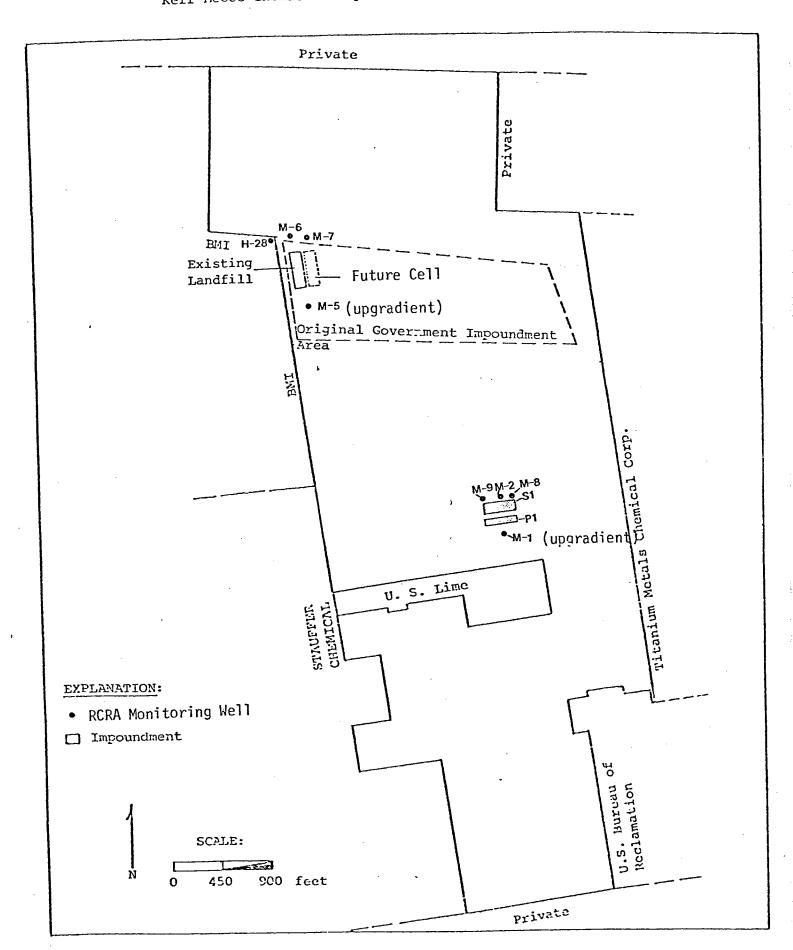
Plant Manager

RBC:jc Attachment

CERTIFIED MAIL NO. P 331 934 035

LUCATION OF RCRA GROUND-WATER MON. UR S

Kerr-McGee Chemical Corporation's Henderson Facility



Ms. Karen Schwinn
Regional Project Officer
U. S. Environmental Protection Agency
215 Fremont Street
San Francisco, California 94103

Dear Ms. Schwinn:

Enclosed you will find the materials which we have prepared under Work Assignment R-09-011 relative to the Kerr McGee Facility in Henderson, Nevada.

We have enclosed four copies each of the Groundwater Inspection report, the 265 Subpart F Groundwater Monitoring Evaluation and the 264 Subpart F Groundwater Monitoring Evaluation.

It is our feeling that the most critical deficiency with the data gathered by Kerr McGee is the failure to have gathered a sufficient number of samples since the regulations took effect. It is fairly obvious that some contamination is taking place, originating from the RCRA units at Kerr McGee. We believe that if they had taken a sufficient number of samples to run a student's t-test, it is likely that significant differences between upgradient and downgradient groundwater quality would be demonstrated.

In addition, depending upon the background standard and the hazardous constituents chosen by the Region IX Regional Administrator, it seems likely that Kerr McGee will function in a compliance monitoring - corrective action made under 264 Subpart F.

Please do not hesitate to contact us if you have any guestions regarding these reports.

Sincerely,

ERTEC ROCKY MOUNTAIN, INC.

Kyla Smill Juvonen

Kyla Smith-Juvonen Hydrogeologist

David W. Stoner Manager of Hydrology

Enclosures

November 15, 1983

Ms. Kay Brothers Kerr-McGee Chemical Corporation P.O. Box 55 Henderson, Nevada 89015

Dear Ms. Brothers:

On September 27, 1983, a Hazardous Waste Investigation was conducted at your Henderson, Nevada, facility by the Nevada Division of Environmental Protection. The information was gathered in accordance with Section 444.764 of the Nevada Revised Statutes and a copy of the inspection report is enclosed for your information.

If you have any questions concerning this letter, please contact me at (702) 885-4670 or toll free 1-800-992-0900, extension 4670.

Sincerely,

Alene Coulson
Environmental Management
Specialist
Waste Management Section

de Enclosure

CC: Mr. Gary Lance U.S. EPA, Region IX

September 8, 1983

Mr. Rolf Chase Plant Manager Kerr-McGee Chemical Corporation P.O. Box 55 Henderson, Nevada 89015

Dear Mr. Chase:

Inspectors from the Nevada Division of Environmental Protection will be in the Las Vegas area to conduct Hazardous Waste Generator/Transporter Investigations in accordance with Section 3007 of the Resource Conservation and Recovery Act of 1976 (RCRA).

Your firm has notified the U.S. Environmental Protection Agency (EPA) that the facility listed below is a generator, transporter, and treatment, storage, or disposal facility for hazardous waste. The investigation of the facility is scheduled for September 27, 1983, at 1:30 p.m.

Kerr-McGee Chemical Corporation Lake Mead Drive Henderson, Nevada

As soon as possible, please provide this office with the name, address, and telephone number of the individual who will be representing your firm during the investigation.

If you have any questions concerning this letter, please contact me at (702) 885-4670, or toll free 1-800-992-0900, extension 4670.

Sincerely.

Alene Coulson Environmental Management Specialist Waste Management Section

November 8, 1983

Certified Mail #P22-1672957

Mr. R.B. Chase, Jr.
Plant Manager
Kerr-McGee Chemical Corporation
P.O. Box 55
Henderson, Nevada 89015

Re: Ground Water Monitoring Data, Closure/Post-Closure Plans

Dear Mr. Chase:

The Division of Environmental Protection has reviewed your closure and post-closure plans for your landfill and P-1 impoundment in conjunction with the review done by the EPA, a copy of which is attached. It is imperative that the deficiencies identified in this review be corrected before closure is completed, and that the closure performance standard of 40 CFR Part 265.111(b) be met in order for closure to be acceptable.

In addition, several deficiencies in Kerr-McGee's ground water monitoring program were noted based on a review by Ertec Rocky Mountain, Inc. These deficiencies are as follows:

- 1) The monitoring program began approximately six (6) months after required.
- 2) During the quarterly sampling, all wells were not sampled with the required frequency.
- 3) Replicate measurements of the indicator parameters (pH, specific conductance, Total Organic Carbon, and Total Organic Halogen) were not obtained for the upgradient well (M-1) samples during the first year.

Consequently, the initial background arithemite mean and variance were not calculated and the statistical analysis comparing downgradient values to the background cannot be performed.

Although no statistical comparison of the data was done, it seems to indicate that hazardous constituents may have migrated from the facility to the ground water. If this is the case, closure must include the elimination of hazardous waste constituents from the ground water, pursuant to 40 CFR Part 265.111 (NAC 444.8850).

Mr. R.B. Chase, Jr. November 8, 1983 Page -2-

Within thirty (30) days of receipt of this letter, please submit revised closure and post-closure plans for the landfill and P-1 impoundment which address the deficiencies as outlined in the attached review, and which include provisions for cleanup of contaminated ground water pursuant to 40 CFR Part 265.111. In addition, within thirty (30) days of receipt of this letter, please submit data, if available, which would allow for statistical comparison of downgradient and background values and please describe why the deficiencies outlined above in the ground water monitoring program exist.

Should you have any questions regarding this matter, please contact me.

Sincerely.

H. LaVerne Rosse, P.E. Program Director Waste Management Section

de Attachment

cc: Karen Schwinn, EPA

T	SENDER: Complete items 1, 2, 3, and 4. Add your address in the "RETURN TO" space on reverse.
1090	(CONSULT POSTMASTER FOR FEES) 1. The following service is requested (check one). Y Show to whom and date delivered
RETURN	3. ARTICLE ADDRESSED TO: Mr. R.B. Chase, Gr., Plant Myr. Kerr-Mc Lee Chem. Corp. P.O. Box 55 Henderson, Nev. 89015
HECEIP I, III	4 TYPE OF SERVICE: □ REGISTERED □ INSURED □ COD □ EXPRESS MAIL (Always obtain signature of addressee or agent) I have received the article described above. SIGNATURE □ Addressee □ Authorized agent
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RECEIVE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY SEP 3 0 1983

215 Fremont Street San Francisco, Ca. 94105

ENVIRONMENTAL PROTECTION

28 SEP 1983

H. LaVerne Rosse, P.E. Program Director Waste Management Program Division of Environmental Protection Capitol Complex Carson City, NV 89710

Dear Mr. Rosse:

On January 21, 1983, Kerr-McGee Chemical Corporation submitted to your office a closure plan for their hazardous waste landfill which was to be taken out of service as of January 25, 1983. On June 9, 1983, Kerr-McGee sent EPA 👟 a closure plan for surface impoundment P-1, claiming no hazardous waste was disposed in the impoundment after January 25, 1983. At that time, the facility stated that closure of pond P-1 constitutes final closure of all RCRAregulated operations. However, to our knowledge, no closure plan has yet been submitted for the other pond(s).

Review of the above-referenced closure plans pursuant to the interim status requirements have revealed a number of These are described in detail in Attachment deficiencies. These deficiencies must be corrected before closure is completed. Since the facility is closing under interim status and will not be permitted, it is especially important that the closure performance standard of Part 265.111(b) be met for closure to be acceptable.

On March 15, 1983, a RCRA ground water monitoring inspection was conducted at Kerr-McGee by Ertec Rocky Mountain Inc., an EPA contractor. During the course of the inspection, information was gathered in accordance with Section 3007 of the Resource Conservation and Recovery Act (RCRA). of the inspection report, dated April 6, 1983, is enclosed. Also enclosed is a copy of a report which reviews the ground water monitoring program pursuant to 40 CFR Part 265.

In addition, ground water monitoring data has been submitted to EPA and DEP by Kerr-McGee as required by 40 CFR Part 265.94. Copies of these submittals are attached. The Ertec report includes a review of this data.

The following deficiencies in Kerr-McGee's ground water monitoring program were observed during the records review and facility inspection:

40 CFR 265.90-94, (NAC Section 444.8850) - The monitoring

program began approximately six months after required. During the quarterly sampling, all wells were not sampled with the required frequency. Replicate measurements of the indicator parameters (pH, specific conductance, Total Organic Carbon, and Total Organic Halogen) were not obtained for the upgradient well (M-1) samples during the first year. Consequently, the initial background arithmetic mean and variance was not calculated and the statistical analysis comparing downgradient values to the background can not be performed.

Although no statistical comparison of the data was done, it seems to indicate that hazardous constituents may have migrated from the facility to the ground water. If this is the case, closure must include the elimination of hazardous waste constituents from the ground water, pursuant to 40 CFR Part 265.111 (NAC Section 444.8850).

The purpose of this letter is to provide notice, pursuant to Section 3008(a)(2) of RCRA, that EPA has found Kerr-McGee Chemical Corporation to be in violation of various State requirements found in the Nevada Administrative Code and various Federal requirements contained in 40 CFR Part 265.

Section II.H. of the Memorandum of Agreement (MOA) makes it the primary obligation of the State to take timely and appropriate action against persons in violation of facility standards. This section includes violations detected by Federal compliance evaluation inspections.

EPA believes that it is appropriate that the State initiate enforcement action ordering compliance by a date certain. Please provide us with a copy of your compliance action, or evidence of compliance as soon as possible. Please record your compliance actions related to this case on your quarterly inspection and compliance report.

Should the State fail to order compliance by a date certain and/or remedy the deficiencies noted in our inspection report and the closure plan review EPA would exercise its right to initiate enforcement action under Section 3008(a)(2) of RCRA.

If you have any questions or require additional information, please contact Karen Schwinn of my staff at (415) 974-8158.

Sincerely yours,

lagrı Seraydarian

Director

Toxics and Waste Management Division



August 18, 1983

CERTIFIED MAIL NO. P 331 934 064

Mr. Bill Wilson, Chief
Technical Assessment Section
Toxics and Waste Programs Branch
U. S. Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, CA 94105

Re: Groundwater Monitoring Data

Dear Mr. Wilson:

Attached are RCRA groundwater monitoring data for Kerr-McGee Chemical Corporation's Henderson, Nevada facility. These data for surface impoundment monitoring wells M-8 and M-9 complete all baseline data. These data summaries are supplied in accordance with 40 CFR 265.94(a)(2)(i).

The cadmium and chromium concentrations in both wells exceed the National Interim Primary Drinking Water Standard (NIPDWS) of 0.01 mg/l and 0.05 mg/l, respectively. Nitrate exceeds the NIPDWS of 10 mg/l in well M-9.

If there are any questions regarding the above, please contact K. Brothers at (702) 565-8901.

Sincerely

R/B. Chase, Jr.

Plant Manager

RBC:jc Attachments

TABLE I

Parameter (mg/l)	Well M-8	Well M-9
Arsenic	0.01	0.01
Barium	0.09	0.15
Cadmium	0.10	0.10
Chromium	2.96	26.0
Fluoride	<1	<1
Lead	<0.01	<0.01
Mercury	<0.001	<0.01
Nitrate - N	5.8	22.4
Selenium	<0.005	<0.005
Silver	0.05	0.02
Endrin	<0.0002	<0.0002
Lindane	<0.004	<0.0002
Methoxychlor	<0.1	<0.1
Toxaphene	<0.005	
2, 4 - D	<0.1	<0.005
2, 4, 5 - TP (Silvex)	<0.01	<0.1
Radium (pCi/l)	<2	<0.01
Gross Alpha (pCi/l)	<30	<2
Gross Beta (pCi/l)	60±40	<50 300±100

July 15, 1983

Jul 21 10 38 RH 103

CERTIFIED MAIL P 26 0233580

Mr. Bill Wilson, Chief
Technical Assessment Section
Toxics and Waste Program Branch
U.S. Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, California 94105

Re: Groundwater Monitoring Data

Dear Mr. Wilson:

Attached are RCRA groundwater monitoring data for Kerr-McGee Chemical Corporation's Henderson, Nevada facility. This completes all baseline data for landfill monitoring wells M-5. M-6. and M-7.

Attached groundwater monitoring data for surface impoundment monitoring wells M-8 and M-9 are results from the third quarter baseline sampling. Baseline data for all other RCRA groundwater monitoring wells (M-1, M-2, and H-28) are complete and have been previously submitted. This data summary is supplied in accordance with 40CFR 265.94(a)(2)(i).

The cadmium concentration in all reported wells exceeds the National Interim Primary Drinking Water Standard (NIPDWS) of 0.01 mg/l. Chromium exceeds the NIPDWS of 0.05 mg/l in wells M-8 and M-9. Nitrate exceeds the NIPDWS of 10 mg/l in well M-9. Silver exceeds the NIPDWS of 0.05 mg/l in well M-9.

If there are any questions regarding the above, please contact Kay Brothers at (702) 565-8901.

Very truly yours,

Ŕ. B. Chase, Jr.

Plant Manager

RBC/js

cc: Verne Rosse, NDEP

TABLE I

		•		/ \ /	
Parameter mg/l	M-1	<u>M-6</u>	<u>M-7</u>	<u>M-8</u>	M-9
Augonia	0. 05	<0.01	0.01	<0.01	0.01
Arsenic	0.44	0.44	0.32	0.38	0.44
Barium	0.44		0.02	0.02	0.07
Cadmi um	•	0.02			
Chromium	<0.01	<0.01	<0.01	0.67	24.5
Fluoride	1.0	1.0	1.0	<1.0	1.0
Lead	<0.01	<0.01	<0.01	<0.01	<0.01
Mercury	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrate	0.11	0.13	0.40	7.6	15.3
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	0.03	0.02	0.02	0.02	0.06
Endrin	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Lindane	<0.004	<0.004	<0.004	<0.004	<0.004
Methoxychlor	<0.1	<0.1	<0.1	<0.1	<0.1
Toxaphene	<0.005	<0.005	<0.005	<0.005	<0.005
2, 4-D	<0.1	<0.1	<0.1	<0.1	<0.1
2, 4, 5-TP (Silvex)	<0.01	<0.01	<0.01	<0.01	<0.01
Coliform Bacteria (MPN/100 ml)	<2.2	<2.2	<2.2	<2.2	<2.2
Radium (PCi/l)	<2	<2	<2	<2	<2
Gross Alpha (PCi/1)	<30	<30	<30	<40	<100
Gross Beta (PCi/1)	50 + 40	80 + 40	50 + 30	100 + 50	500 + 200

Annual Report

RECEIVED P. A. REGION D.

March 2, 1983

dia 4 10 45 AM *83

CERTIFIED MAIL NO. P21 7028066

Mr. Bill Wilson, Chief Technical Assessment Section Toxics and Waste Programs Branch U. S. Environmental Protection Agency Region IX 215 Fremont Street San Francisco, CA 94105

Re: 1982 RCRA Groundwater Monitoring Summary Henderson, Nevada Facility Kerr-McGee Chemical Corporation EPA ID No. NV D 008290330

Dear Mr. Wilson:

Enclosed is the 1982 RCRA groundwater monitoring data for the landfill (monitor wells 5, 6, 7, and H-28) and surface impoundments (monitor wells 1, 2, 8, and 9) at the referenced facility.

In accordance with our Part A application amendment dated July 14, 1982, we deleted process vessels from the hazardous waste management areas. Wells 8 and 9 were then installed to replace previous wells 3 and 4 to more accurately monitor the area. These well locations were described on the map submitted to you earlier. Monitoring of these wells began with the October sampling.

Evaluation of groundwater elevation data confirms that monitor wells 1 and 5 are upgradient and properly designated.

Sincerely,

R. B. Chase, Jr.

Plant Manager

RBC:jc

cc: Verne Rosse, NV DEP

or Gen. No. GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES

Company Well Number

Gredient Up XX Down

Roport for:

8 **5**;

Phone: (702) 565-8901

Kerr-McGee Chemical Corporation Nevada Henderson, . Name:

. Zip: 89015 Impoundment Address:

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noter	Ground Water Elev. Ft. Sample	pH Standard	Conductivity pmhos my/l	Total Organic Carbon mg/l	Total Organic Helogan ness	Chlorido n:n/i	fron ng/J	Manganose mg/l	Phenois mg/l	Sodium ng/l	Sulfata mg/l
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/ 2.9	0.01	0.21	0.03	12.2	1.0	<0.01	0,001	0.91	<0.005	0.04
200	0 0	0.18	0.03	12.9	0.7	<0.01	<0.001	11.2	<0.005	0.04
200	10 07	000	0.03	12.7	1.0	<0.01	<0.001	18.7	<0.005	0.02
7	70.00									
18181	Endrin	Lindane	Methoxychlor	Toxephene	2,4.D	2.4.5.TP	Radlum CI/I	Gross Alphs pCl/l	Gross Bets pC1/1	Collorn Brists 1/103 ml
<u>-</u>	₩6/4	1/8H	5600		-					
(5.7)	20000	7000	<0.1	<0.005	<0.1	<0.01	<2	<15	<20	<2.2
100	1000	700 07	. 0	<0.005	<0.1	<0.01	<2	<100	80±20	<2.2
7.5	2000.05	400.00	7.0	. 5000	10,	<0.01	<2	<50	504.30	<2.2
787	، 00002	<0.004	ï.0×	<0.00	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \					· .

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GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES

Company Well Number

19 8 Gradient Up

รา นพอด

Report för:

Name:	Kerr-McGee Chemical Corporation	l Corporation				Phone: (702)	702, 565-8901
Adaress:	Adgress: P. O. Box 55	Henderson,	Nevada			Zip: 89015	
			Tanalana Tanalana	100000	•	-	

		Sulfato mg/l		2900	4180	1190	
Zip: 89015		Sodium mg/l		4430	6350	4190	
Zip:	-	Phanols mg/l	 -1-1 t	<0.01	<0.01	<0.01	
	•	Manganeso mg/l	- 1 - 2	0.04	0.05	0.07	
		Iron mg/I		0.03	0.27	0,34	
	lent	Chlorida ma/l		3800	7210	4,750	
. 1							
	punodu	Organie slogen ms/l	.•			يميونو 	34.0-12-
evada	ace Impoundment	Tolii Orgink Histogen ms/l	. •	870	23	59	Ba conse
nderson, Nevada	Surface Impound	Total Organic Total Organic Carbon Hatogen mg/l ms/l	•	5 870	9 23		
Henderson, Nevada				20,000 5 870	34,000 9 23	22,000 45 59	
		Total Organic Carbun mg/1		20,000 5	34,000 9	4.5	
P. O. Box 55 Henderson, Nevada		Conductivity Yosa Organic Jumbos Carbon mg/l mg/l	irri Year (ininal) Background	5	6	4.5	

2 3.	•							•		
orameter Units	Arsenic mg/l	Barium mg/l	Cadmium mg/l	Chromium nvg/l	Fluoride mg/l	Lead mg/l	Morcury mg/i	Nitrata mg/l (ag N)	Solanium mg/l	Silver mg/l
							•	>		•
14/82	0.02	0.18	0.04	9.0	0.95	<0.01	<0.001	0.45	<0.005	0.05
1/82	0.03	0.23	0.05	10.0	1.0	<0.01	<0.001	8.8	<0.005	0.10
	· ·	,	2		· ·		[00	7 71	200.07	(()

											-
	•	0.05	0.10	0.03		Coulor as Becterie 1700 in		<2.2	<2.2	<2.2	
	1.	<0.005	<0.005	<0.005		Gross Bets pC1/1	-	<20	720±40	300+100	
(as N)	>	0.45	8.8	14.7		Gross Alpho pCI/I		<15	<100	<60	
,		<0.001	<0.001	<0.001		Radlum pCI/I	<u>-</u>	<3	<2	<2	
		<0.01	<0.01	<0.01	-	2.4.5-Te Sivol mpd		<0.01	<0.01	<0.01	-
2		0.95	1.0	2.0		2,4.0 mg/l		<0.1	<0.1	<0.1	
		9.0	10.0	9.15		Toxaphone mg/l		<0.005	<0.005	<0.005	
		0.04	0.05	0.04		Methoxychlor ng/l		<0.1	<0.1	<0.1	
1/6th		0.18	0.23	0.13		Lindano mg/l		<0.004	<0.004	<0.094	
7,641		0.02	0.03	0.02		Endrin mg/l		<0.0002	<0.0002	<0.0002	
2000		14/82	1/82	5/82	•	ometer Units		14/82	182	687	

Down N. .: & b: Sulfate mg/l N-8 1680 Phone: (702) 565-8901 Gradiant Up Sodium mg/I Company Wall Number Coliforn Pacinis 1/100 ml Silver mg/l 1490 0.02 <2.2 Roport for: 89015 Zip:_ Gross Beta pCi/1 Phanois mg/i Salenium mg/1 100160 <0.005 <0.01 Gross Alpha pCI/i Manganose mg/i Nitrato mo/1: (as N) 0.12 14.7 <30 . : or Gan. No. Radlum pCi/l Morcury mg/l Iron mg/1 <0.001 0.22 **2** Chlorida ma/l GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES 2,4:5-T Lead mg/! <0.01 2000 <0.01 Surface Impoundment Total Organic + Histogen noti : Fluorida mg/l 2,4-D mg/l 435 5.0 <0.1 N : Henderson Kerr-McGee Chemical Corporation Toxaphene mg/l Chromium mg/l Total Organic Carbon mg/l <0.005 5.1 54 Methoxychlor mg/l Cadmium _ mg/l Conductivity Juntos nigil 11,000 0.02 <0.1 0. Box 55 : pH Standard Barium mg/l Lindane mg/l 400.0% 0,23 7.1 st Year (initial) Background 1746.62 Greund Water Clay, Fr. Samp's Occurrons <0.0002 Arsenic mg/1 Endrin mg/l . . . is Address: ny Name: Chits 5/85 anieter Jn.18 04.80 / Si 5785 a.neter Joits

GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES

Compuny Wall Number

or Gan. No.

6-N.

Gradlent Up

Down (X)

Report for:

19 8 2

-8901				Sulfate mg/l		,	1510		
.Phone: (702 , 565-8901	89015			Sodium mg/l			9520		
.Phone:	Zio:			Phanals ng/l			<0.01		
				Manganeso mg/l			0.27		
			A	lron mg/l			0.29		
		-	Surtace Impoundment	Chlorida ma/l		*** ***	12,120		
rings to ge	e.		Surtace In	Total Organie Halogan mull		•	1200	 	
ation	- Henderson, Nevada			Total Organic Carbon mg/l		•	11	·	
cal Corpor	- Hende			Conductivity pimbos mg/l			40,500		,
Kerr-McGee Chemical Corporation	P. O. Box 55			pH Standård	-	:	7.0		
Kerr-				Graund Water Cles. Ft. Sample Occuration		irst Year (initial) Background	1745.15 7.0		
	To the second second	:ss Address:	r u	arameter Units		rst Year lieut.	/5/82		

Ç4 tri		,								
trameter Units	Arsenic mg/l	Barium mg/t	Cadmium mg/l	Chromium mg/l	Fluorida mg/l	Lead mg/l	Marcury mg/l	Nitrato mg/l (as N)	Selonium mg/l	Silver m0/l
										٠
28/5/	0.03	0.23	0.07	16.3	1.0 ·	<0.01	. 500.0>	114.7	<0.005	0.06
rameter Units	Endrin mg/l	Lindane mg/l	Methoxychlor mg/l	Toxaphono mg/l	2,4.D mg/l	A.6.TP Salves mg m	· Radium pGI/I	Gross Alpha pCI/I	Gross Beta pC1/1	Coliform Bacteria 1/100 ml
5/32	<0.0002	<0.004	<0.1	<0.005	<0.1	<0.01	<2	<200	1200±300	<2.2
									•	
	_		_		The state of the s	Contraction of the last of the	THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.	An entertainment fact transfer bereiter freist bereiter	The supplies of the supplies o	

or Gon. No.

GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES

Gradiant Up X Down 7. Company Wall Number

Report for:

8 .

Phone: (702, 565-8901

1 10111	Zip: 050±0	
111	Henderson, Nevada	Landfill
Kerr-McGee Chemical Corporation	P. O. Box 55	
Some Name:	ress Address:	u

					7 222 6411	-					
 					17(11)(1) 7: 7			14.00.000	Oboods	Coding	Sulfata
Parameter Units	Ground Nater Eler. Fil. Sample	pH Standard	Conductivity Halbos mg/l	Total Organic Carbon mg/4	Total Dago	Chiorido ma/l	mg/i	1/Dia	mg/l	1/0m	1/Bm
	מננחימוני							-			٠.
		-					•				
First Year (in	First Year (initial) Background		•	•	•						
הביטובות שנים של										0,00	0000
116/82	1716.49	6.5	10,500	126	35	2750	22.19	8.94	0.17	1010	0007
-0/01									000	0011	1360
1/5/82	1716 32	5.8	10,550	25	32	3000	58.5	5.22	0.30	1120	TOOO
21.21.02										-	
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					: 00 - 2						
				T		January 1					
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Parameter Units	Arsenic mg/l	Barium mg/l	Cadmium , mg/1	Chromium mg/l	Fluorido mg/l	Lead nig/l	Marcury mg/l	Nitrato mg/l (AS N)	Selonium mg/l	Silver mg/l
							•	j		

Parameter Units	Arsenic mg/l	Barium mg/l	Cadmium , mg/l	Chromium mg/l	Fluorido mg/l	Lead mg/l	Marcury mg/l	Mitrata mg/i (AS N)	I/BM	l/Bui
-							-			
/16/82	0.02	0.10	0.02	0.01	3.6	<0.01	<0.001	0.45	<0.005	0.02
15/82	<0.01	0.15	0.02	0.02	2.0	<0.01	<0.001	0.10	<0.005	0.02
					•					
				•						
uramater Units	Endrin mg/l	Lindane mg/l	Methoxychlor mg/l	Toxephene mg/l	2,4·D mg/l	2,4,5-19 \$1895 mp.6	. Radlum pCi/l	Gross Alpha pCl/I	Gross Beta pC1/1	Colford B 41474 1/100 ml
						-	1			
(16/80	20000	<0.004	<0.1	<0.005	<0.1	<0.01	<2	<40	40±30	240
-6/5/5/	-00002	700 02	<0.1	<0.005	<0.1	<0.01	<2	<30	01/>	<2.2
10101	2000.00									

GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES

Down 9-W Company Well Number

Gradlant Up

Report for:

9 8 2

Phone: (702) 565-8901 Kerr-McGce Chemical Corporation

- Henderson, NV Same Name:

Sulfata mg/l Zip: 89015 Landfill P. O. Box 55 215 Address:

						7	1000	Topic courty	Phonois	Social R	2100
orameter Units	Cround Water Ely, Ft. Sample	pH Standard	Conductivity Jumbot mg/l .	Total Organie Carbon mg/t	Total Organic Halogan mw/l	ma/I	mg/l	mg/l	mg/l	1/8m	/BILI
		-	_	-	•						
nist Year lin	ist Year (initial) Background	•	:	:	•						
יימיט סיזכיףי									, ,		0000
16/82	1697.82 6.6	9.9	0096	27	∞	2270	9.73	6.51	0.00	DOOT	0007
10/11	-							_			
15/82	1697 57	7.9	9500	80	12	2370	15.9	2.88	<0.01	1.150	1.1 / C
-0161						-					
						-	•				
	_							T			

£ 2	,									. series
rameter Units	Arsenic mg/l	Barium mg/l	Cadmium mg/l	Chromium mg/l	Fluorido mg/l	Lead mg/l	Mercury mg/l	nitrata mq/l (as N)	שנישנים השלין	1/0m
									·	•
60/0	,	80 0	0.02	0.01	2.5	0.02	<0.001	0.22	<0.005	0.01
15/82	,0.01	0.10	0.02	0.02	1.0	<0.01	0.001	0.10	<0.005	0,03
rameter Units	Enorin mg/l	Lindane mg/l	Methoxychlor mg/l	Toxephene no/l	2,4.D mg/l	2,4:6-T & Silvey, May 2,4	Radlum pCi/l	Gross Alpha pCi/i	Gross Bets pC1/1	Conform \$ 11100 ml
					,		-			
				3000		70.07		<20	40+20	93
16/82	<0.0002	<0.004	40.1	<0.00	T•0×	10.04	***			
/3/82	<0.0002	<0.004	<0.1	<0.005	<0.1	<0.01	<2	<50	300±1.00	7.7>
	_									

******				-				<u>·</u>			
-	16	04>	<20	<2	<0.01	<0.1	<0.005	<0.1	<0.004	<0.0002	782
	1,1	60±20	0'7>	<2	<0.01	<0,1	<0.005	٠٥٠.1	<0.004	:0.0002	/82
				And the control of th	- 10						
	Californ Suctive (7100 ml	Grots Bots pC1/1	Gross Alpha pCI/I	Radlum pCI/I	2.4.5-TP Filvy mg/A	2,4.D mg/l	Toxephene mg/l	Methoxychlor ng/l	Lindsne ng/l	Endria mg/l	210r 18
	0.02	<0.005	0.10	0.001	<0.01	1.0	<0.01	0.02	0.18	<0.01	/82
	0.01	<0.005	0.22	<0.001	<0.01	2.5	<0.01	0.02	0.12	<0.01	/82
		<i>:</i>	- 2					-			
	Silver mg/l	Selenium mg/J	Nitrate mg/l (as N)	Mercury mg/l	Lead mg/l	Fluoride mg/l	Chromiuni mg/1	Cadmium mg/1	Barium 'mg/l	Arsenie mg/I	18 18
								×			
1.50	0611	10.0	7.0.7	2.8	4870	7	67	000.01	6./	1701,60	28
2500	1180	0.08	4.28	4.87	2300	6	50	10,000	6.8	1701.83	/82
						•	•	•	•	Year (initial) Background	Year (in
		• -				·					
Sulfato mg/l	Sodium mg/l	Phonois mg/i	Manganesa n1g/l	Iron mg/l	Chlorido ma/l	Total Organic + Halugan modi	Total Organic Carbon mg/l	Canductivity Junhos ing/s	pH Standard	Greund Water Care, Fi. Sample Occurate	meter nits
					g1	Landfil]					
مسيد عربية المستحددة والمستحددة والمستحدد والمستحد	89015	Zip:			Nevada	c	Hen	. Box 55	·0 • а		Address:
8901	Phone: (702_1565-8901	Phone:	·				ical Corporation	Kerr-McGee Chemical	Kerr		: ette X
49 8 2	Roport for:	č.	-	:				٠.			
Nown	Gradiant Up				53-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	4	FOR HAZARDOUS W	•			
77	Company Wall Number	Company		. •	NITORING REPORT	MONITORING	GROUND WATER MOI	ט	• •		
0 3 3 0	0 8 2 9	0 Q A	EPA TSO Fac. No. N	EPA 7		izenia sindeki.					

1	NG REPORT	0111110V-	ACT 111047	
	MONITOR		OUS WASTE	
	SECTION WATER MONITORING REPORT		HAZARDOUS WASTE FACILITIES	
	Č	ō	ü	•_

11-28

Company Wall Number

19 8 2 Down Phone: (702 1565-8901 Gradiant Up Report for:

		Sulfato ng/l	.			730	2110	1190										т					<u>.</u>	11	•	
89015		Sadium				1680	1195	1110			Silver mg/l			0.02	0.02	0.01		Coliform	1/100 ml		<2.2	<2.7×	· ·	,,,,,		
w	id is	Phonols	1/0m		À	<0.01	<0.01	<0.01			Selenium		-	<0.005	<0.005	3000	200.04	Gross Beta	pC1/1		<40	50+20		05+09		
		Manganoso	I/Dur			2.42	2.16	1.77			Nitrate	(N SE)		- 0	• i	۱ [:	0.53	# do! A room	1/10a		8.1	077		07>		
		Iron	1/0m			0 21	9	-1	0.01		Mercury	1/0m		100	T00.0>	0.012	<0.001		Radium pCi/I			7,	7,7	<2		
		11	ma/l	25,18		00.00	2 0017	7740	22.50		ped	1/0m			<0.01	<0.01	<0.01		Silvey No.			10.02	<0.01	<0.01	- Control of the Cont	
	\ \ \	Landfil	Yets Organie Hilogen moll		:		- 1	7.9				mg/l ::			0.55	1.0	2.0		2,4.D mg/I	•		<0.1	<0.1	<0.1		
Kerr-McGee Chemical Corporati	Henderson, NV		Total Organic Carbon mg/l	-	:		3	18	. 7			Chromium mg/l			0,03	0.01	0.02		Toxaphena			<0.005	<0.00	<0.005		
	55 Hc		Conductivity	r.hui			10,500	8,800	000,6	1		Cadmium	mg/1		0.02	0.02	0.02		Methoxychlor	r/bu		.0.1		<0.1	- 1	
	D O BOX		Hd	200000000000000000000000000000000000000		•	7.0	7.5	7.5			Barium	1/6m		0.08	80 0		0.00	Lindane	1/0m		<0.004		40.004	40.0v	The second secon
\				Sample		ij Background	1699.81	1693.71	1698.33			Arsenic	1/6111		F.7. O	7	?∫ '	0.02	טי ימע נו	J/Gw	-	2000 0.	- 2000	<0.0002	7000.0v	The state of the s
	Name:	Address:	חפופג	1,15		Year (initial)	וו כי מונים מו	20,	58/2			2	angua arts			787	/82	5/82		2015TE			21 % / 1	782	7,7/82	

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4mg



May 9, 1983

CERTITIED MAIL P 455 585 456

Mr. Bill Wilson, Chief Technical Assessment Section Toxics and Waste Programs Branch U. S. Environmental Protection Agency Region IX 215 Fremont Street San Francisco, CA 94105

Re: Fourth Quarter Groundwater Monitoring Data

Dear Mr. Wilson:

Attached are the completed fourth quarter 1983 RCRA groundwater monitoring data for Kerr-McGee Chemical Corporation's Henderson, NV facility. Wells around the landfill are designated M-5, M-6, M-7, and H-28; and the wells around the surface impoundments are designated M-1, M-2, M-8, and M-9. This data summary is supplied in accordance with 40CFR 265.94(a)(2)(i).

The cadmium concentration in all reported wells exceeds the National Interim Primary Drinking Water Standard (NIPDWS) of 0.01 mg/l. Chromium exceeds the NIPDWS of 0.05 mg/l in wells M-1, M-2, M-8, and M-9. Fluoride exceeds the NIPDWS in wells M-6 and M-9. Nitrate exceeds the NIPDWS of 10 mg/l in wells M-8 and M-9. Silver exceeds the NIPDWS of 0.05 mg/l in well M-9. Coliform bacteria exceeds the NIPDWS of 1/100 ml in well M-8.

If there are any questions regarding the above, please contact Kay Brothers or me at (702) 565-8901.

Sincerely

R/B. Chase, Jr. Plant Manager

RBC:jc Attachment

cc: Verne Rosse, NDEP

TABLE I

Parameter mg/l	M-1	M-2	M-5	M-6	<u>M-7</u>	<u>M-8</u>	. M-9	H-28
Arsenic	<0.01	0.03	<0.01	<0.01	<0.01	0.02	<0.01	0.03
Barium	0.39	0.20	0.13	0.22	0.13	0.09	0.31	0.07
Cadmium	0.03	0.04	0.02	0.02	0.02	0.02	0.07	0.02
Chromium	9.9	10.7	0.01	0.02	0.02	6.00	18.54	<0.01
Fluoride	2.0	1.0	1.0	2.5	<1.0	<1.0	2.5	<1.0
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Mercury	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrate	6.0	8.4	0.1	<0.1	0.1	16.7	19.4	0.1
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	<0.03	0.03	0.01	0.02	0.01	0.02	0.07	0.01
Endrin	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Lindane	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Methoxychlor	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toxaphene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2, 4-D	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2, 4, 5-TP (Silvex)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Coliform Bacteria (MPN/100 ml)	<2.2	<2.2	<2.2	<2.2	<2.2	2.2	<2.2	<2.2
Hexavalent Chromium	9.9	10.7	<0.01	0.02	<0.01	6.00	18.54	<0.01
Radium (PCi/1)	< 2	< 2	.< .2	< 2	< 2	< 2	< 2	< 2
Gross Alpha (PCi/1)	<90	<80	<100	<30	<20	<20	<100	<60
Gross Beta (PC:/L)	100 +70	300 +50	60 +40	80 +50	70 +30	90 +30	300 +100	130 +50

February 24, 1983

CERTIFIED MAIL NO. P21 7028085

Mr. Bill Wilson, Chief
Technical Assessment Section
Toxics and Waste Programs Branch
U. S. Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, CA 94105

Re: Third Quarter 1982 RCRA Groundwater Monitoring Data Henderson, Nevada Facility, Kerr-McGee Chemical Corporation EPA ID No. NVD 008290330

Dear Mr. Wilson:

Please find attached completed third quarter 1982 RCRA ground-water monitoring data for the Kerr-McGee Chemical Corporation facility at Henderson, Nevada. The data apply to the landfill (wells M-5, M-6, M-7, H-28) and surface impoundments (wells M-1, M-2, M-8, M-9) areas. This data summary is supplied in accordance with 40 CFR 265.92(2)(i).

The cadmium concentration in all reported wells exceeds the NIPDWS limit of 0.01 mg/L. Chromium exceeds the NIPDWS limit of 0.05 mg/L in wells M-1, M-2, M-8, and M-9. Nitrate limits of 10 mg/L as N are exceeded in wells M-1, M-2, M-8, and M-9. The NIPDWS silver limit of 0.05 mg/L is exceeded in well M-9. Coliform NIPDWS limit of 1/100 mL is exceeded in well M-7.

Sincerely,

R. B. Chase, Jr. Plant Manager

Joeps Chan, 1.

RBC:jc

Attachments

cc: Verne Rosse, NDEP

catory No: 46041 (CORRECTED COPY)

TABLE I

Parameter	·		N. F		W 7	w 0	V 0	TT 00
mg/L	<u>M-1</u>	<u>M-2</u>	<u>M-5</u>	<u>M-6</u>	<u>M-7</u>	<u>M-8</u>	<u>M-9</u>	H-28
Arsenic	<0.01	0.02	<0.01	<0.01	<0.01	0.01	0.03	0.02
Barium	0.20	0.13	0.15	0.10	0.18	0.23	0.23	0.08
Cadmium	0.03	0.04	0.02	0.02	0.02	0.02	0.07	0.02
Chromium	12.7	9.15	0.02	0.02	<0.01	5.1	16.3	0.02
Fluoride	1	2	2	1	1	2	1	2
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Mercury	<0.001	<0.001	<0.001	0.001	0.001	<0.001	<0.001	<0.001
Nitrate	18.7	14.7	0.1	0.1	0.1	14.7	14.7	0.53
Selenium	<0.0 05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	0.02	0.03	0.02	0.03	0.02	0.02	0.06	0.01
Endrin	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Lindane	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Methoxychlor	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toxaphene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-D	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2,4,5-TP (Silvex)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Turbidity, NTU	45	10	100	90	120	25	10	23
Coliform Bacteria,			•					
MPN/100 ml	<2.2	<2.2	<2.2	<2.2	16	<2.2	<2.2	<2.2
Hexavalent Chromium	12.7	6.0	0.02	0.02	<0.01	5.0	16.3	0.02

2nd q



October 26, 1982

CERTIFIED MAIL NO. P26 0233713

Mr. Bill Wilson, Chief Technical Assessment Section Toxics and Waste Programs Branch U. S. Environmental Protection Agency Region IX 215 Fremont Street San Francisco, CA 94105

Re: Second Quarter 1982 RCRA Groundwater Monitoring Data, Henderson, Nevada Facility, Kerr-McGee Chemical Corporation, EPA ID No. NVD 008290330

Dear Mr. Wilson:

Please find attached in Tables I (landfill) and II (surface impoundments) completed second quarter 1982 RCRA groundwater monitoring data for the Kerr-McGee Chemical Corporation facility at Henderson, Nevada. These data supplement the partial data submitted on August 17, 1982. This data summary is supplied in accordance with 40 CFR 265.94(2)(i).

The cadmium concentration in all reported wells exceeds the NIPDWS limit of 0.01 mg/L. The turbidity limit of 1 NTU is also exceeded in all wells. Chromium exceeds the NIPDWS limit of .05 mg/L in the surface impoundment wells M-1, M-2, and M-3. Nitrate limits of 10 mg/L as N are exceeded in wells M-1, M-3, and M-4. The NIPDWS silver limit of 0.05 mg/L is exceeded in wells M-2 and M-3. In the landfill wells, the NIPDWS limit of 1.4-2.4 mg/L for fluoride is exceeded in M-5, M-6, and M-7. Coliform NIPDWS limits of 1/100 mL are exceeded in wells M-5, M-6, and M-7.

Sincerely,

Ŕ. B. Chase Plant Manager

RBC: jc Attachment

cc: H. L. Rosse-Carson City

TABLE I

SECOND QUARTER 1982 RCRA GROUNDWATER MONITORING DATA KERR-MCGEE CHEMICAL CORPORATION - HENDERSON FACILITY LANDFILL

Parameter Arsenic Barium Cadmium Chromium Fluoride	(mg/L)	Upgradient We.ll M-5 0.02 0.10 0.02	M-6 <0.01 0.08 0.02	wngradient M-7 <0.01 0.12	0.01 0.09
Barium Cadmium Chromium	H H	0.10 0.02	0.08	-	
Cadmium Chromium	n	0.02		0.12.	0 09
Chromium	• .	·	0.02		0.07
	11		.0.02	0.02	0.02
Fluoride		0.01	0.01	<0.01	0.01
	11	3.6	2.5	2.5	1.0
Lead		<0.01	0.02	<0.01	<0.01
Mercury	**	<0.001	<0.001	<0.001	0.012
Nitrate (as N)	u	0.45	0.22	0.22	0.2
Selenium	11	<0.005	<0.005	<0.005	<0.005
Silver	11	0.02	0.01	0.01	0.02
Endrin	17	<0.0002	<0.0002	<0.0002	<0.0002
Lindane	· III	<0.004	<0.004	<0.004	<0.004
Methoxychlor	11	<0.1	<0.1	<0.1	<0.1
Toxaphene	tt	<0.005	<0.005	<0.005	<0.005
2,4-D	11	<0.1	<0.1	<0.1	<0.1
2,4,5-TP Silver	τ "	<0.01	<0.01	<0.01	<0.01
Gross Alpha	(pCi/L)	<40	<20	<40	< 4.0
Gross Beta	(pCi/L)	40 <u>+</u> 30	40 <u>+</u> 20	60 <u>+</u> 20	50±20
Radium	(pCi/L)	<2	<2	<2	< 2
Coliform	(MPN/100 mL)	240	93	4	<2.2
Turbidity	(NTU)	2000	2000	2000	35

Analysis by Truesdail Laboratories, Inc., Los Angeles, CA.

TABLE II

SECOND QUARTER 1982 RCRA GROUNDWATER MONITORING DATA KERR-MCGEE CHEMICAL CORPORATION - HENDERSON FACILITY

SURFACE IMPOUNDMENTS

		Upgradient Well	Do	wngradient	Wells
Paramete	r 	M-1	M-2	M-3*	<u>M-4</u> *
Arsenic	(mg/L)	<0.01	0.03	<0.01	<0.01
Barium	11	0.18	0.23	0.27	0.09
Cadmium	11	0.03	0.05	0.06	0.01
Chromium	• •	12.9	10.0	44	0.01
Fluoride	***	0.7	1.0	0.7	1.0
Lead	11	<0.01	<0.01	<0.01	<0.01
Mercury		<0.001	<0.001	<0.001	<0.001
Nitrate (as N)	ŧŧ	11.2	8.8	44	11.1
Selenium	11	<0.005	<0.005	<0.005	<0.005
Silver	H .	0.04	0.10	0.09	0.03
Endrin	tt	<0.0002	<0.0002	<0.0002	<0.000
Lindane	11	<0.004	<0.004	<0.004	<0.004
Methoxychlor	11	<0.1	<0.1	<0.1	<0.1
Toxaphene	11	<0.005	<0.005	<0.005	<0.005
2,4-D	Ħ	<0.1	·<0.1	<0.1	<0.1
2,4,5-TP Silve	x "	<0.01	<0.01	<0.01	<0.01
Gross Alpha	(pCi/L)	<100	<100	<200	<40
Gross Beta	(pCi/L)	80 ±20	720±40	300 ±40	30 ±20
Radium	(pCi/L)	<2	<2	<2	<2
Coliform	(MPN/100 mL)	<2.2	<2.2	<2.2	<2.2
Turbidity	(NTU)	45	57	2.5	85

Analysis by Truesdail Laboratories, Inc., Los Angeles, CA.

^{*} Monitor wells M-3 and M-4 were replaced by wells M-8 and M-9 following second quarter analysis.

Partral 2nd g



August 17, 1982

CERTIFIED MAIL P26 0233709

Mr. Bill Wilson, Chief
Technical Assessment Section
Toxics and Waste Programs Branch
U. S. Environmental Protection
Agency, Region IX
215 Fremont Street
San Francisco, CA 94105

Re: Second Quarter 1982 RCRA Groundwater Monitoring Data Henderson, Nevada Facility, Kerr-McGee Chemical Corporation, EPA I.D. No. NVD 008290330

Dear Mr. Wilson:

Please find attached in Table I, second quarter 1982 RCRA groundwater monitoring data for the Kerr-McGee Chemical Corporation facility at Henderson, Nevada on wells for which we have received analysis results. This data summary is supplied in accordance with 40 CFR 265.94(2)(i). A map showing the location of these wells is included as Figure 1.

The cadmium concentration in all reported wells exceeds the EPA National Interim Primary Drinking Water Standard (NIPDWS) of 0.01 mg/L. The NIPDWS level of 0.05 mg/L chromium is exceeded in wells M-l and M-2. Nitrate exceeds the NIPDWS level of 10 mg/L in upgradient well M-l and silver exceeds the NIPDWS level of 0.05 mg/L in downgradient well M-2; turbidity exceeds the level of 1 TU in all wells.

Sincerely,

C. B. Armstrong Plant Manager

CBA:jc Attachments

TABLE 1

SECOND QUARTER 1982 RCRA GROUNDWATER MONITORING DATA

DRINKING WATER PARAMETERS

KERR-MCGEE CHEMICAL CORPORATION

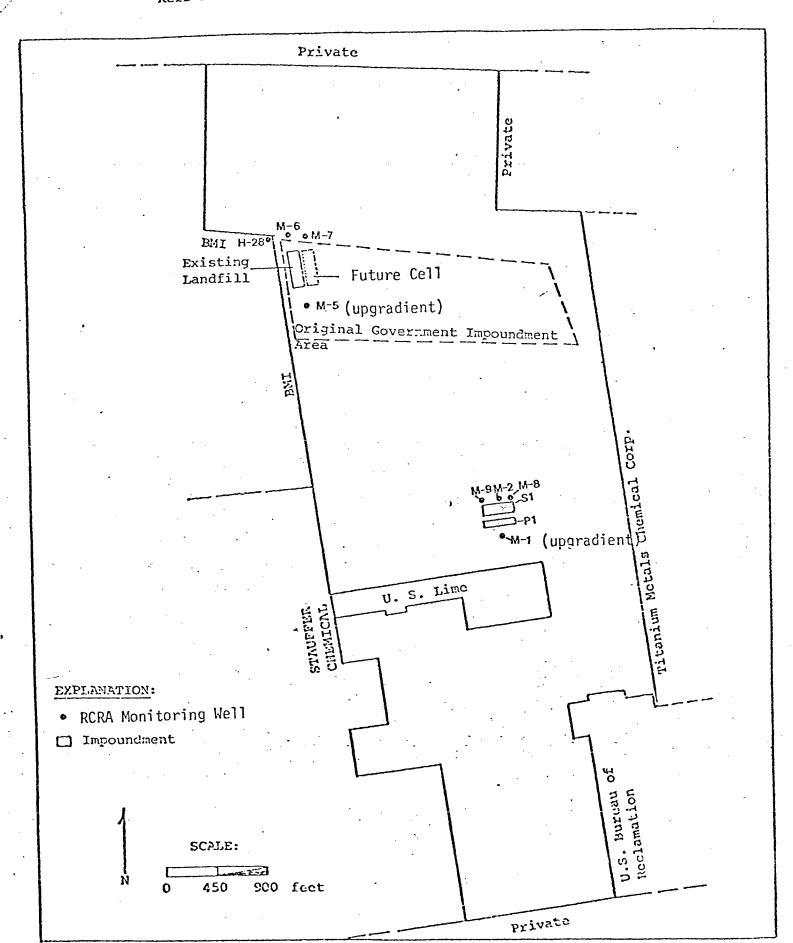
HENDERSON, NEVADA FACILITY

Parameter		Upgradient Well M-l	Downgradi M-2	ent Wells H-28
Arsenic	(mg/L)	<0.01	0.03	0.01
Barium	**	0.18	0.23	0.09
Cadmium		0.03	0.05	0.02
Chromium		12.9	10.0	0.01
Fluoride	11	0.7	1.0	1.0
Lead	**	<0.01	< 0.01	< 0.01
Mercury	**	<0.001	< 0.001	0.012
Nitrate (as N) "	11.2	8.8	0.2
Selenium		<0.005	< 0.005	< 0.005
Silver	Ħ	0.04	0.10	0.02
Endrin	u	<0.0002	< 0.0002	< 0.0002
Lindane	er .	<0.004	< 0.004	< 0.004
Methoxychlor	11	<0.1	< 0.1	< 0.1
Toxaphene	ŧī	<0.005	< 0.005	< 0. 005
2,4-D	**	<0.1	< 0.1	< 0.1
2,4,5-TP(Silv	ex)"	<0.01	< 0.01	< 0.01
Turbidity	(NTU)	45	57	35
Coliform (N	MPN/100 m1)	<2.2	<2.2	< 2.2
Gross Alpha (F	icocuries/Lit	er) <100	<100	<40
Gross Beta		80	720	50
Radium	și,	<2	<2	< 2

FIGURE 1

LOCATI OF RCRA GROUND-WATER MONITOR LLS

Kerr-McGee Chemical Corporation's Henderson Facility





July 15, 1983

CERTIFIED MAIL P 26 0233580

JUL 2 0 1983

ENVIRONMENTAL PROTECTION

Mr. Bill Wilson, Chief
Technical Assessment Section
Toxics and Waste Program Branch
U.S. Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, California 94105

Re: Groundwater Monitoring Data

Dear Mr. Wilson:

Attached are RCRA groundwater monitoring data for Kerr-McGee Chemical Corporation's Henderson, Nevada facility. This completes all baseline data for landfill monitoring wells M-5, M-6, and M-7.

Attached groundwater monitoring data for surface impoundment monitoring wells M-8 and M-9 are results from the third quarter baseline sampling. Baseline data for all other RCRA groundwater monitoring wells (M-1, M-2, and H-28) are complete and have been previously submitted. This data summary is supplied in accordance with 40CFR 265.94(a)(2)(i).

The cadmium concentration in all reported wells exceeds the National Interim Primary Drinking Water Standard (NIPDWS) of 0.01 mg/l. Chromium exceeds the NIPDWS of 0.05 mg/l in wells M-8 and M-9. Nitrate exceeds the NIPDWS of 10 mg/l in well M-9. Silver exceeds the NIPDWS of 0.05 mg/l in well M-9.

If there are any questions regarding the above, please contact Kay Brothers at (702) 565-8901.

Very truly yours,

272 Sun /.

R. B. Chase, Jr.

Plant Manager

PEC/js

Cc: Verne Rosse, NDEP

TABLE I

Parameter mg/l	<u>M-1</u>	M-6	M-7	<u> M-8</u>	<u>M-9</u>
Arsenic	0.05	۵. O1.	0.01	-0.01	0.01
		<0.01	0.01	<0.01	0.01
Barium	0.44	0.44	0.32	0.38	0.44
Cadmium	0.02	0.02	0.02	0.02	0.07
Chromium	<0.01	<0.01	<0.01	0.67	24.5
Fluoride	1.0	1.0	1.0	<1.0	1.0
Lead	<0.01	<0.01	<0.01	<0.01	<0.01
Mercury	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrate	0.11	0.13	0.40	7.6	15.3
Selenium	<0.005	< 0.005	<0.005	<0.005	< 0.005
Silver	0.03	0.02	0.02	0.02	0.06
Endrin	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Lindane	<0.004	<0.004	<0.004	<0.004	<0.004
Methoxychlor	<0.1	<0.1	<0.1	<0.1	<0.1
Toxaphene	<0.005	<0.005	<0.005	<0.005	<0.005
2, 4-D	<0.1	<0.1	<0.1	<0.1	<0.1
2, 4, 5-TP (Silvex)	<0.01	<0.01	<0.01	<0.01	<0.01
Coliform Bacteria (MPN/100 ml)	<2.2	<2.2	<2.2	<2.2	<2.2
Radium (PCi/1)	<2	<2	<2	<2	<2
Gross Alpha (PCi/1)	<30	<30	<30	<40	<100
Gross Beta (PCi/1)	50 <u>+</u> 40	80 + 40	50 + 30	100 + 50	500 + 200

PROTECTION UNITED S

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

215 Fremont Street San Francisco, Ca. 94105

July 6, 1983

Mr. R.B. Chase, Jr.
Plant Manager
Kerr-McGee Chemical Corporation
Post Office Box 55
Henderson, NV 89015

Re: Henderson Facility (EPA ID# NVD008290330)

Dear Mr. Chase:

In your June 9, 1983 letter you indicated that the Kerr-McGee hazardous waste facilities will be finally closed in lieu of obtaining a RCRA permit.

Due to the fact that you have not actively added any wastes to the facilities in question since January 26, 1983, they are not currently subject to the closure requirements of 264, but remain subject to the 265 closure requirements. Therefore, you will not be required to submit a Part B permit application as requested January 28, 1983.

The Agency will conduct a formal review of the closure plans submitted for the surface impoundment and the landfill. This closure will also be public noticed in accordance with the requirements of Part 270.

If you have any questions regarding this matter please contact Susi Jackson (415) 974-8390.

Sincerely yours,

William D. Wilson

Chief, Technical Assessment Section

cc: Lavern Rosse, NDEP

June 9, 1983

CERTIFIED MAIL NO. P 455 585 461

Mr. William D. Wilson, Chief Technical Assessment Section U. S. Environmental Protection Agency Region IX 215 Fremont Street San Francisco, CA 94105 RECEIVED

JUN 13 1983

PROTECTION

Re: Henderson Facility - RCRA Compliance

Dear Mr. Wilson:

Attached is the closure plan for Kerr-McGee Chemical Corporation's Henderson Facility hazardous waste storage impoundment P-1. The P-1 impoundment, identified in our amended Part A permit application dated July 14, 1982 (copy attached), was used to store hazardous wastes containing chromium that came from potassium perchlorate production. Kerr-McGee Chemical Corporation discontinued potassium perchlorate production in September of 1982 and has no plans for its future production.

Closure of the P-1 impoundment constitutes final closure of all onsite hazardous waste storage and disposal operations at the Henderson Plant. The P-1 surface impoundment is subject to "interim status" closure requirements since no hazardous waste was disposed there after January 25, 1983.

After closure of all hazardous waste storage and disposal areas at the Henderson Facility, we wish to retain our EPA hazardous waste generator ID number to ship any future hazardous wastes offsite. We hereby notify you that a "Part B" permit is no longer required and will not be submitted by August 1, 1983. We anticipate pond P-1 final closure will be completed approximately three months after plan approval. A request for withdrawal of the facility Part A permit application will be submitted after closure.

If there are any questions regarding the above, please contact me or K. Brothers at (702) 565-8901.

R. B. Chase, Jr. Plant Manager

RBC:jc Attachments

cc: Verne Rosse - NV DEP

HAZARDOUS WASTE STORAGE FACILITY CLOSURE/POST-CLOSURE PLAN

Surface Impoundment P-1

P-1 is a storage surface impoundment lined with reinforced butyl rubber having an approximate surface area of 26,000 ft. 2 and volume of 125,000 ft. 3. This impoundment received process wastes from the potassium perchlorate process and boron leach circuit. The potassium perchlorate process waste stream is considered hazardous because the total chromium concentration may at times exceed 5 ppm. The waste stream from the boron leach circuit by itself is not a hazardous waste.

The P-1 surface impoundment has not received any hazardous waste since January 25, 1983. The potassium perchlorate process was permanently shut down in September, 1982, and Kerr-McGee Chemical Corporation does not plan to resume potassium perchlorate production.

Closure of P-1

Because the potassium perchlorate process has been terminated, P-1 is no longer needed for hazardous waste storage and will be closed according to the following plan:

- 1. Analyses indicate that the liquid phase in P-1 has a chromium concentration above 5 ppm. The salt precipitate at the bottom of the pond does not exhibit a chromium concentration above 5 ppm when subjected to an EP Toxicity Test. Analytical results from Desert Research Institute (DRI) are attached for your information. Additional analyses will be conducted to confirm these as specified below in No. 3.
- 2. The liquid phase of P-1 will be removed by evaporation and recycle back to the process. The chromium in the P-1 liquor will be used to supplement corrosion inhibitors normally added.
- 3. When the impoundment has evaporated to dryness, the remaining solids will be sampled and tested as specified below:
 - a. A composite sample comprised of cored solids from six randomly selected locations in the pond area (see attachment I) will be analyzed.
 - b. An EP Toxicity extraction will be conducted on the composite sample and analyzed for the EP Toxicity metal parameters (As, Ba, Cd, Cr, Pb, Hg, Se, Ag). All sampling and analyses will be conducted in accordance with the EPA document, Test Methods for Evaluating Solid Waste Physical/Chemical Methods, Second Edition.

HAZARDOUS WASTE STORAGE FACILITY CLOSURE/POST-CLOSURE PLAN Page 2 June 9, 1983

- 4. If analysis indicates the solids are hazardous, the pond contents, including the liner, will be removed, manifested, and shipped to an approved hazardous waste disposal facility, e.g., the U. S. Ecology site at Beatty, Nevada. This will ensure that all hazardous waste constituents are removed and properly disposed.
- 5. If analysis indicates the solids are not hazardous, inspection and appropriate maintenance will be performed on the surface impoundment so that it can be put back in service for storage of nonhazardous materials or wastes.
- 6. Closure will be certified by an independent registered professional engineer.

Attachment II lists estimated costs for closure of the P-1 surface impoundment.

Post-Closure

No post-closure care will be required since all hazardous wastes will have been removed and properly disposed of offsite.

P-1 SURFACE IMPOUNDMENT: SOLIDS SAMPLING PROCEDURE FOR CLOSURE OF HAZARDOUS WASTE STORAGE FACILITIES

19

Pond - P-1

lining: reinforced butyl rubber

pond as indicated above. An EP Toxicity extraction will be conducted on the composite sample and analyzed for As, Ba, Cd, Cr, Pb, Hg, Se, and Ag. A total of six random samples will be composited from the gridded (18 areas)

All sampling and analyses will be conducted in accordance with "Test Methods of Evaluating Solid Waste - Physical/Chemical Methods", Second Edition.



KERR-MCGEE CHEMICAL CORPORATION

POST OFFICE BOX 55 . HENDERSON, NEVADA 89015

MAY 16 1983

May 12, 1983

ENVIRONMENTAL PROTECTION

Mr. Harry Van Drielen
Environmental Management Specialist II
Waste Management Section
Division of Environmental Protection
Capitol Complex
201 South Fall Street
Carson City, NV 89710

Re: Anolyte Leak

Dear Mr. Van Drielen:

I have reviewed your latest correspondence, dated May 2, 1983, regarding the anolyte leak which occurred in January. The following is in response to that memorandum:

- 1. The sidewalls as well as the bottom of the anolyte tank are being lined with fiberglass.
- 2. The temporary storage tank is dedicated to the storage of anolyte only. It will be used during maintenance of the permanent anolyte tank and is available for use in emergency situations.
- 3. Our tank inspection and maintenance program will reduce the occurrences of spills or leaks. This program is designed to detect small leaks; however, equipment failure (i.e., broken gaskets, etc.) can result in minor leaks until plant personnel become aware of the situation and take appropriate action.

If there are any further questions, please contact me or Kay Brothers at 565-8901.

Sincerely

R. B. Chase, Jr.

Plant Manager

RBC: ic

no futh questions of this time.

May 9, 1983

RECEIVED

MAY 13 1983

ENVIRONMENTAL PROTECTION

CERTITIED MAIL P 455 585 456

Mr. Bill Wilson, Chief
Technical Assessment Section
Toxics and Waste Programs Branch
U. S. Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, CA 94105

Re: Fourth Quarter Groundwater Monitoring Data

Dear Mr. Wilson:

Attached are the completed fourth quarter 1983 RCRA groundwater monitoring data for Kerr-McGee Chemical Corporation's Henderson, NV facility. Wells around the landfill are designated M-5, M-6, M-7, and H-28; and the wells around the surface impoundments are designated M-1, M-2, M-8, and M-9. This data summary is supplied in accordance with 40CFR 265.94(a)(2)(i).

The cadmium concentration in all reported wells exceeds the National Interim Primary Drinking Water Standard (NIPDWS) of 0.01 mg/l. Chromium exceeds the NIPDWS of 0.05 mg/l in wells M-1, M-2, M-8, and M-9. Fluoride exceeds the NIPDWS in wells M-6 and M-9. Nitrate exceeds the NIPDWS of 10 mg/l in wells M-8 and M-9. Silver exceeds the NIPDWS of 0.05 mg/l in well M-9. Coliform bacteria exceeds the NIPDWS of 1/100 ml in well M-8.

If there are any questions regarding the above, please contact Kay Brothers or me at (702) 565-8901.

Sincerely,

R. B. Chase, Jr.

Plant Manager

RBC:jc Attachment

cc: Werne Rosse, NDEP

TABLE I

Parameter mg/l	<u>M-1</u>	M-2	<u>M-5</u>	M-6	<u>M-7</u>	M-8	M-9	H-28
Arseni c	<0.01	0.03	<0.01	<0.01	<0.01	0.02	<0.01	0.03
Barium	0.39	0.20	0.13	0.22	0.13	0.09	0.31	0.07
Cadmium	0.03	0.04	0.02	0.02	0.02	0.02	0.07	0.02
Chromium	9.9	10.7	0.01	0.02	0.02	6.00	18.54	<0.01
Fluoride	2.0	1.0	1.0	2.5	<1.0	<1.0	2.5	<1.0
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Mercury	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrate	6.0	8.4	0.1	<0.1	0.1	16.7	19.4	0.1
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	<0.03	0.03	0.01	0.02	0.01	0.02	0.07	0.01
Endrin .	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Lindane	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Methoxychlor	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toxaphene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2, 4-D	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2, 4, 5-TP (Silvex)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Coliform Bacteria (MPN/100 ml)	<2.2	<2.2	<2.2	<2.2	<2.2	2.2	<2.2	<2.2
Hexavalent Chromium	9.9	10.7	<0.01	0.02	<0.01	6.00	18.54	<0.01
Radium (PCi/1)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Gross Alpha (PCi/1)	<90	<80	<100	<30	<20	<20	<100	<60
Gross Beta (PCi/L)	100 <u>+</u> 70	300 <u>+</u> 50	60 <u>+</u> 40	80 <u>+</u> 50	70 <u>+</u> 30	90 <u>+</u> 30	300 <u>+</u> 100	130 <u>+</u> 50

May 2, 1983

R.B. Chase, Jr.
Plant Manager
Kerr-McGee Chemical Corporation
P.O. Box 55
Henderson, Nevada 89015

Re: Anolyte Leak

Greetings:

I have received your letter of 21 April 1983 in which you respond to the questions arising from the reported loss of containment of anolyte and the immediate actions to prevent serious loss to the environment.

It is expected that the program of frequent inspections of the exteriors of all storage tanks will be reasonably successful in detecting serious breaches due to erosion by the tanks' contents.

In paragraph 2B, you state that the bottom of the tank will be lined with fiberglass. What lining will protect the side walls? If different, will the conjoining of dissimilar linings be disposed to leaking at the seams?

It appears that the temporary storage tank is dedicated to function as emergency storage of anolyte (triggered by catastrophic failure) or as temporary storage of anolyte during maintenance of the permanent tank. This implies that at all other times the temporary tank will be empty and ready to receive anolyte. If a different scheme is intended, modification of your plan of implementation will be required.

As you note, the soils beneath the anolyte storage have received the effects of many minor spills and leaks. It is not unreasonable to expect that your program of inspection and maintenance of these anolyte storage facilities will preclude any such future spills or leaks.

Respectfully.

Harry van Drielen

Environmental Management Specialist II

Waste Management Section



STATE OF NEVADA

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES DIVISION OF ENVIRONMENTAL PROTECTION

CAPITOL COMPLEX
CARSON CITY, NEVADA 89710

TELEPHONE (702) 885-4670

April 27, 1983

MEMORANDUM

TO:

Verne Rosse Hu

FROM:

Alene Coulson, Environmental Specialist

Tom Fronapfel, Environmental Engineer

SUBJECT:

KERR-McGEE GROUND WATER QUALITY ASSESSMENT PROGRAM

I have reviewed the Groundwater Quality Assessment Program for Surface Impoundments, Landfills and Landfarms submitted by Kerr-McGee for our review.

I reviewed the plan using the U.S. EPA checklist and the plan provides for all the required items necessary for approval / I find no deficiencies and recommend approval of the plan as submitted.

Alene Coulson

As per your request, I reviewed Kerr-McGee's Ground Water Quality Assessment Program and found no deficiencies that would warrant our not approving the Program. Therefore, I recommend that the plan be approved as submitted.

Thomas J. Fronapfel

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APR 22 1983 ENVIRONMENTAL ROST OFFICE BOY SE PROTECTION

April 21, 1983

Mr. Harry Van Drielen Environmental Management Specialist State of Nevada Division of Environmental Protection 201 South Fall Street Capitol Complex Carson City, NV 89710

Re: Anolyte Leak

Dear Mr. Van Drielen:

The following is in response to your January 27, 1983, memorandum requesting information regarding the anolyte leak which occurred in early January:

- We do have a tank inspection program. However, we are currently amending this inspection program to include weekly visual inspections of the exterior of the anolyte tank and other tanks storing any hazardous chemicals listed in CFR, Part 117. Inspections will be logged and records kept at the facility.
- It would be extremely difficult and costly to determine the buffering capacity of the soil in the anolyte storage tank area. This has been a process area for approximately 30 years; therefore, it has been subject to minor spills and leaks. To mitigate any future impact from spills or leaks, the following will be implemented:
 - A 120,000-gallon tank, located near the anolyte storage tank, has been lined with plastic, and now serves as a temporary storage tank. After the permanent tank is put back in service, this tank will be used to provide temporary storage when it is necessary to take the permanent storage tank out of service for maintenance, etc.
 - B) The permanent anolyte storage tank is in the process of being revamped. The bottom of the tank will be repaired and lined with fiberglass. will be completed by June 1, 1983.

Mr. Harry Van Drielen Page 2 April 21, 1983

- 3. The in-ground concrete tank was used to temporarily store anolyte during the spill incident. It will no longer be needed for an emergency storage tank since the lined 120,000-gallon tank will be available, as discussed above in 2(A). This in-ground tank is not used in routine operations.
- The anolyte storage tank is not diked. The tank is located adjacent to a series of pipes and process area, which makes the installation of a dike infeasible. Anolyte can be quickly transferred to the 120,000-gallon temporary storage tank from the permanent storage tank if a leak were to occur, which would minimize any anolyte entering the environment.

We believe the revisions and modifications discussed above will provide sufficient control of any future spills or leaks that may occur from the anolyte storage tank.

If there are any questions, please call me or K. Brothers.

Sincerely,

KERR-McGEE CHEMICAL CORPORATION

R. B. Chase, Jr. Plant Manager

RBC: jc

2 Huy 83 see response letter

March 2, 1983

MAR -4 1983

IMAR -4 1983

ENVIRONMENTAL

PROTECTION

CERTIFIED MAIL NO. P21 7028066

Mr. Bill Wilson, Chief
Technical Assessment Section
Toxics and Waste Programs Branch
U. S. Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, CA 94105

Re: 1982 RCRA Groundwater Monitoring Summary Henderson, Nevada Facility Kerr-McGee Chemical Corporation EPA ID No. NV D 008290330

Dear Mr. Wilson:

Enclosed is the 1982 RCRA groundwater monitoring data for the landfill (monitor wells 5, 6, 7, and H-28) and surface impoundments (monitor wells 1, 2, 8, and 9) at the referenced facility.

In accordance with our Part A application amendment dated July 14, 1982, we deleted process vessels from the hazardous waste management areas. Wells 8 and 9 were then installed to replace previous wells 3 and 4 to more accurately monitor the area. These well locations were described on the map submitted to you earlier. Monitoring of these wells began with the October sampling.

Evaluation of groundwater elevation data confirms that monitor wells 1 and 5 are upgradient and properly designated.

Sincerely,

R. B. Chase, Jr.

Plant Manager

RBC:jc

cc: Verne Rosse, NV DEP

or Gon. No.

GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES

Company Well Number

Gradlant Up XX

DOWN

Report for:

19 8 2

Phone: (702, 565-8901

Zip: 89015

Kerr-McGee Chemical Corporation Nevada Henderson, Box

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and Acdress:

Same Name

Sulfate mg/l 868 1190 1120 Sodium mg/1 1260 1085 1170 Phonols mg/I 0.01 <0.01 <0.01 Manganese mg/l 0.07 0.09 0.04 Iron mg/I 0.16 0,40 0.27 Surface Impoundment Chlorido min/l 1450 1625 2000 Total Organic 2 Hilogan no/A 51.5 528 615 : Total Organic Carbon mg/l 4.3 18.3 21,3 Conductivity pmhos mg/l ' 11,350 12,250 11,600 : pH Standard 7.3 7.4 7.3 irst Year (initial) Buckground 1751.63 1750.72 1750.51 Cround Water Elev. Fr. Sample Occurrence חבסית פוזינייי urameter Units 14/82 15/82 787

ı			`	 1			,	·				
	Silver mg/l	٠	0,04	0.04	0.02		Collera Bretrië V100 ml		<2.2	<2.2	<2.2	
	Selenium mg/l	-	<0.005	<0,005	<0.005		Groutesta pC1/1		<20	80±20	50±30	
	Nitrate mg/l (as N)	. 3-	0.91	11.2	18.7		Gross Alpho pCI/I		<15	<100	<50	
	Marcury mg/l		0,001	<0,001	<0.001	-	Radium pCI/I		<2	<2	<2	
	Lead mg/l		<0.01	<0.01	<0.01	na networkiej	2.4.6.TV	101254Na	<0.01	<0.01	<0.01	
	Fluorido mg/l		1.0	0.7	1.0		2,4.D mg/l	-	<0.1	<0.1	<0.1	-
	Chromium mg/l		12.2	12.9	12.7		Toxephene mg/l		<0,005	<0.005	<0.005	-
•	Cadmium ' mg/l		0.03	0,03	0.03		Methoxychlor .mg/l		<0,1	<0,1	<0.1	
	Barium mg/l		0,21	0,18	0.20		Lindane mg/l		<0.004	<0.004	<0.004	
	Arsenic mg/l		0.01	<0.01	<0.01		Endrin mg/l		<0.0002	<0.0002	<0.0002	
5.3	coneter Units		14/82	1/82	7.82		cometer Units		/32	61 67	18/83	

er A TSD Fac. No. N V D 0 0 8 2 9 0 3 3 4

GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES

Company Well Number

N-2

Gradlant Up

Down

Report for:

8

- Phone: (702) 565-8901 Zip: 89015 Henderson, Nevada Kerr-McGee Chemical Corporation Box P. O. Ters Adamss: _ Frank Name

٠.,			=	Surface	ace Impoundment	ment.					
Juits	Graund Water Elev. Fi. Sample Occurrent	Standard	Conductivily Junhos mg/l	Total Organic Carbon mg/I	Total Organic Halogan ma/l	Chlorida ma/l	Iron mg/I	Manganese mg/l	Phanols mg/l	Sodium mg/l	Sulfata mg/l
9								2.5	*		
Titt Year (Ini)	ingt Year (initial) Background	•	•	•	.•		7.E2				
24/82	1746.77 7.3	7.3	20,000	5	870	3800	0,03	0.04	<0.01	4430	2900
7/82	1744.40 7.2	7.2	34,000	6	23	7210	0.27	0.05	<0.01	6350	4180
/5/82	1746.35 7.3	7.3	22,000	45	59	4.750	0,34	0.07	<0.01	4190	1190
LE 2					<u>-</u> .	,		-			

-t: 2										
Grameter Units	Arsenic mg/l	Barium mg/l	Çadınıum mg/l	Chromium mg/l	Fluorida ıng/l	1/6 m	Morcury mg/l	Nitrato mg/l (as N)	Solonium mg/l	Silver mg/l
						-varieties sy		3		•
14/82	0.02	0.18	0.04	9.0	0.95	<0.01	<0.001	0.45	<0,005	0.05
1/82	0,03	0.23	0,05	10.0	1.0	<0.01	<0.001	8.8	<0.005	0.10
14/82	0.02	0.13	0.04	9,15	2.0	<0.01	<0.001	14.7	<0.005	0.03
rameter Units	Endrin mg/l	Lindane mg/l	Nicthoxychlor ng/l	Toxaphone mg/l	2,4·D mg/l	2 4 16.17 Silvox	Redlum pCI/I	Gross Alpha pCI/I	Grous Bets pC1/1	Caliform Becture 1/100 ml
						_				
1.782	<0.0002	<0.004	<0.1	<0,005	<0.1	<0.01	<3	<15	<20	<2.2
7.87	<0.0002	<0.004	<0.1	<0.005	<0.1	<0.01	<2	<100	720±40	<2.2
15/82	<0.0002	<0.004	<0.1	<0.005	<0.1	<0.01	<2	.09>	300+100	<2.2
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						,			· · · · · · · · · · · · · · · · · · ·	

or Gen. No.

GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES

Company Well Number

N-9

Down Gradlant Up

Report for:

8

2		Kerr-McGee Chemical		Corporation	·					Phone: (702) 565-8901	5-8901
Starbay Section		P. O. Box	1 1	Henderson,	NV				_;diZ	89015	
н П Сі				Surfac	face Impoundment	ndment					
Parameter Units	Ground Water Elev. Fr. Sample Occurred	pH Standard	Conductivity Jumbol nig/l	Total Organic Carbon mg/l	,	Chlorida ma/l	Iron mg/I	Manganosa mg/l	Phanois mg/i	Sodium mg/l	Sulfata mg/l
017											
The rest Year (initial)	First Year (initial) Background	:	:	:	•	- 15. v-c-20	-				
1/5/82	1746.62	7.1	11,000	54	435	2000	0.22	0.12	<0.01	1490	1680
					-	n slátdýna vn					
						and activities		-			
					-	******************************					
. 14.6.2			د المارية			Alaksian a v		-			
faranteter Units	Arsenic mg/1	Barium ' mg/l	Cadmium mg/l	Chramium mg/l	Fluorida. mg/l	Lead mg/I	Marcury mg/l	Nitrato mg/l (as N)	Salanium mg/1	Silver mg/l	
21									-	•	
1/5/82	0,01	0,23	0.02	5,1	2.0	<0 (01	<0.001	14.7	<0.005	0.02	
								-			
						ritor Jesefitika					
Detainater Units	Endrin mg/l	Lindane mg/l	Methoxychlor mg/l	Toxaphene mg/l	2,4.D mg/l	2.4.5-TP Silvox mg.A	Radium pCi/l	Gross Alpha pCI/i	Gross Betz pCi/1	Caliform Exercis 1/100 ml	
3						-					
0.75,/82	<0.0002	<0.004	<0.1	<0.005	<0.1	<0.01	<2	<30	100±60	<2.2	
								-			
			-	-							
								-			

GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES

Company Wall Number

9-N

or Gen. No..

Gradient Up

nwoo

Report for:

8 6:

Phone: (702) 565-8901 - Henderson, Nevada Kerr-McGee Chemical Corporation P. O. Box 55

winey Anni.

- 255 Address: _		50 300 10									
7. E 1					Surface In	Surface Impoundment					
Parameter Units	Ground Water Lies, Fa. Sample Occurance	pH Standard	Conductivity Jumbot mg/l	Total Organic Carbon mg/l	Total Organic Halogan mell	Chlorido ma/l	Iron mg/I	Manganeso mg/l	Phenois mg/i	Sodium mg/l	Sulfate mg/l
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Trist Year (initial) Background	al) Background	:	•	-	•						
57.82	1745.15	7.0	40,500	11	1200	12,120	0.29	0.27	<0.01	9520	1510
								-			
1:			1			***					

r		Y	 -		,					
	Silver mg/l	·	90.0			Coliform Bretsiu 1/103 ml		<2.2		
	Selonium mg/l	1.	<0.005			Grow Beta pC1/1		1200±300		-
	Nitrate mg/l (as N)		14.7			Gross Alpha pCI/I		<200		
	Marcury mg/l		<0.001			Radium pCI/I		<2		
	Lead 1/gin		<0.01			Silved Silved mpA		<0.01		
	Fluorida mg/l		1.0			2,4.0 mg/l	-	<0.1		
	Chromium mg/l		16.3			Toxaphene mg/i		<0,005		
	Cadmium _ mg/l		0.07			Methoxychlor ng/l		<0.1		
	Barium mg/l		0.23			Lindane mg/l		<0.004		
	Arsenic mg/l		0.03			Endria mg/l		<0.0002		
(4) (4)	Juster		1/2/82			Ligmeter Units		ପ୍ରକୃତ୍ର		

GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES

M-5 Company Wall Number

or Gon. No.

α **5**; 0000 Gradiant Up X

Report for:

Phone: (702, 565-8901 - Zip: 89015 Henderson, Nevada Kerr-McGee Chemical Corporation upiness Address: Company Names

10101					Landf111	111						
Parameter Units	Ground Water Eley, Fl. Sample Occurates	pH Standard	Conductivity Janhos mg/l	Total Organic Carbon mg/l	Tolil Orgin C Halograp mo/l	Chlarida ma/l		Iron mg/I	Manganesa mg/l	Phanals mg/l	Sodium mg/l	Sulfato mg/l
2,0			-					·				
ini) rest teni	First Year (initial) Background	:	:	:		•		:24				
, /16/82	1716.49 6.5	6.5	10,500	126	35	2750	22	22.19	8.94	0.17	1010	2350
0/5/82	1716.32 5.8	5.8	10,550	25	32	3000	58.5	5	5.22	0.30	1120	1360
			7									

r	r					 ,			- r	 -		,
	Silver mg/l	•	0.02	0.02			Coliform BRING VIOOmi		240	<2,2	-	
	Selanium mg/l	•	<0.005	<0.005			Gross Bata pC1/1		40±30	<40		
	Nitrato mg/l (as N)		0.45	0.10			Gross Alpha pCUI	* 25,	<40	<30		
	Marcury mg/l		<0.001	<0.001			Radlum pCi/l	÷.	<2	<2		-
	Lead ng/l		<0.01	<0.01			2,4:8-TP Salvey mg/A		<0,01	<0,01		
_	Fluorido mg/l		3.6	2.0	* ** * = - **		2,4.D mg/l		<0.1	<0.1		
	Chromium mg/l		0.01	0.02			Toxaphana mg/l		<0.005	<0,005		
	Cadmium , mg/l		0.02	0.02			Methoxychlar .mg/l		<0.1	<0.1		
	Barium '' mg/l		0.10	0.15			Lindane mg/l		<0.004	<0.004		
	Arsenic mg/l		0.02	<0.01			Endrin mg/l		<0.0002	<0.0002		
# # 187	Parameter Units	2	116/82	19/5/82			i aramater Units	34.5	/16/82	1/5/82		

or Gon. No.

GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES

Company Wall Number

7-6

Gradient Up

Down

Report for:

ĕ.

-8901			Sulfata mg/l			2550	1170		
Phone: (702) 565-8901	Zip: 89015		Sodium mg/l			1060	1150		
Phone:	Zip:		Phanals mg/l			90.0	<0.01		
			Manganosa mg/l			6.51	2.88	-	
			Iran mg/l			9.73	15.9	-	
			Chlorido ma/l			2270	2370		
on	NV no	Landfill	Tatal Organie Halogun mo/l	-	:	80	12		
1 Corporati	- Henderson, NV		Total Organic Carban mg/1	٠	-	47	80		
Kerr-McGee Chemical Corporation	55 xc		Conductivity Junkot mg/ff '		:	0096	9500		×
Kerr-Mc	P. O. Box 55		pH Standard		•	9.9	6.4		
			Ground Willing Elin Fr. Sample Occurator		Tust Year (Initial) Background	1697.82	1697.57		
Same:	- :ssappy ssea .	- m - 11 - 12	sorumeter Units	a; r	Trast Year liniti	16/82	/5/82		

7.6.2										
rameter Units	Arsenie mg/l	Barium mg/l	Cadmium nrg/I	Chromium ng/l	Fluarido mg/l	Lead mg/l	Mercury mg/l	Nitrate mq/l (as N)	Solonium mg/l	Silver mg/l
									-	
./16/82	<0.01	0.08	0.02	0.01	2.5	0.02	<0.001	0.22	<0.005	0.01
.0/5/82	<0.01	0.10	0,02	0.02	1,0	<0.01	0.001	0.10	<0.005	0.03
			-		- 10 m					
Parameter Units	Enstrin mg/l	Lindane mg/l	Methoxychlor mg/l	Toxephone 1/0m	2,4.D mg/l	School Supply	Radlum pCi/I	Gross Alpha pCi/l	Grow Bets pC1/1	College Bacteria VIQUE
22							-			
7.6/82	<0,0002	<0.004	<0.1	<0,005	<0.1	<0.01	<2	<20	40±20	93
.75/82	<0.0002	<0.004	<0.1	<0.005	<0.1	<0.01	<2	<50	300±100	.<2.2
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						ter Less.		-		

EPA TSD Fac. No. N V D 0 0 8 2 9 0 3 3

GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES

Company Wall Number

N-7

Gradiant Up

Down

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Report for:

Phone: (702 565-8901	Zip: 89015
	Nevada
1 Corporation	Henderson,
Kerr-McGee Chemical	P. O. Box 55
sany Vame:	ess Address:

.: ness Address:										2+222	
1 3762					Landfill						
Parameter Units	Cround Water Erro. Ft. Sample Occurence	pH Standard	Canductivity Jumbo: Ing/1	Total Organie Carbon mg/l	You! Organic . Helogram	Chlarido ma/l	Iron mg/I	Manganoso mg/I	Phenois mg/i	Sodium mg/l	Sulfate mg/l
E:							•				
Trist Year tini	First Year (initial) Background	•	•	•	-	-					
/16/82	1701.83 6.8	6.8	10,000	50	6	2300	4.87	4.28	0.08	1180	2500
28/5/63	1701,60 6.7	6.7	10,000	29	12	4870	13,8	2.6.1	0.01	1190	1280
						ener e.					
			Ł.		-						

Units Arsenie	Barium ' mg/l	Cadmium mg/l	Chromium mg/l	Fluoride mg/l	Lead mg/l	Mercury mg/l	Nitrate mg/l	Selenium mg/l	Silver mg/l
							(as N)		
								:	
/16/82 <0.01	0,12	0.02	<0.01	2,5	<0.01	<0.001	0.22	<0.005	0.01
7/5/82 <0.01	0,18	0,02	<0.01	1.0	<0,01	0.001	0.10	<0.005	0.02
conster Endria	Lindane nig/l	Methoxychlor mg/l	Toxapheno mg/l	2,4·D mg/l	S. 4:F-TP Silvey Mg/A	. Rødlum pCI/I	Gross Alpha pCI/I	Grott Bata pC1/1	Californ Bressin [/100 ml
					- 	-			
19/82 0.0002	<0.004	<0.1	<0,005	<0,1	<0.01	<2	<40	60±20	17
5/82 <0.0002	<0.004	<0.1	<0.005	<0.1	<0,01	<2	<20	<40	16
				-	e see see se				
				-					

EPA TSD Fee. No. [N | V | D | 0 | 0 | 8 | 2 | 9 | 0 | 3 | 3 | 3

GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES

Company Wall Number

11-28

Gradient Up

Down

Report for:

8

8901			Sulfato n:g/l		730	2110	1190		
Phane: (702)565-8901	Zip: 89015		Sodium mg/I	-	1680	1195	1110		
Phane:	Zip:	-	Phonols mg/l		<0.01	<0.01	<0.01		
			Manganoso mg/l	4.6%	2,42	2,16	1.77		-
			Iron mg/I		0,21	2.28	0,61		_
			Chlorida ma/l		2130	2140	2250		
no	NV	Landfill	Total Organic Halogan nedl		23	7.9	11	**,**	55. Tu
Kerr-McGee Chemical Corporation	Henderson, NV		Yotal Organic Carbon mg/l	:	3	18	. 7		
ee Chemica			Conductivity Frankot ing/l	:	10,500		000,6		***************************************
Kerr-McC	P. O. Box 55		pH Standard	:	7.0	7.5	7.5		
			Ground Water Else, Fr. Sample	re Year finitial Background	1699.81 7.0	1698.71	1698.33 7.5		
. edit N. edit ee	Total Control of the Control	Total Address:	trameter Units	Treat from	187 c	78.5	78/2		

۱. د ا										
Cometer Units	Arsenic mg/l	Barium mg/I	Cadmium mg/l	Chromium mg/l	Fluoride : mg/l	L'ead mg/l	Mercury mg/l	Nitrate mq/l (as N)	Selenium mg/l	Silver mg/l
5									-	-
19/82	0.47	0.08	0.02	0,03	0.55	<0.01	<0.001	<0.1	<0,005	0.02
1/82	0.01	0.09	0.02	0.01	1,0	<0.01	0.012	0.2	<0.005	0.02
/5/82	0.02	0.08	0.02	0.02	2.0	<0.01	<0.001	0.53	<0.005	0.01
Conts	Enarin mg/l	Lindone mg/l	Methoxychlor mg/l	Toxaphena ng/l	2,4.0 mg/l	7 X 200 X 20	Radlum pCi/I	Gross Alpha pCI/I	Gross Beta pC1/1	Californ B MELL'S V100 ml
								1		
(8/4)	<0.0002	<0.004	<0.1	<0.005	<0.1	<0.01	<2	81	<40	<2.2
7.82	<0.0002	<0.004	<0.1	<0.005	<0.1	<0.01	<2	07>	50+20	<2.2
75/82	<0.0002	<0.004	<0.1	<0,005	<0.1	<0.01	<2	×40	05+09	<2.2
						ata		-	-	



February 24, 1983

RECEVED

FEB 2 8 1983

CERTIFIED MAIL NO. P21 7028085

ENVIRONMENTAL PROTECTION

Mr. Bill Wilson, Chief
Technical Assessment Section
Toxics and Waste Programs Branch
U. S. Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, CA 94105

Re: Third Quarter 1982 RCRA Groundwater Monitoring Data Henderson, Nevada Facility, Kerr-McGee Chemical Corporation EPA ID No. NVD 008290330

Dear Mr. Wilson:

Please find attached completed third quarter 1982 RCRA ground-water monitoring data for the Kerr-McGee Chemical Corporation facility at Henderson, Nevada. The data apply to the landfill (wells M-5, M-6, M-7, H-28) and surface impoundments (wells M-1, M-2, M-8, M-9) areas. This data summary is supplied in accordance with 40 CFR 265.92(2)(i).

The cadmium concentration in all reported wells exceeds the NIPDWS limit of 0.01 mg/L. Chromium exceeds the NIPDWS limit of 0.05 mg/L in wells M-1, M-2, M-8, and M-9. Nitrate limits of 10 mg/L as N are exceeded in wells M-1, M-2, M-8, and M-9. The NIPDWS silver limit of 0.05 mg/L is exceeded in well M-9. Coliform NIPDWS limit of 1/100 mL is exceeded in well M-7.

Sincerely,

R. B. Chase, Jr.
Plant Manager

RBC:jc Attachments

cc: Verne Rosse, NDEP

-2-

__atory No: 46041 (CORRECTED COPY)

TABLE I

Parameter								
mg/L	$\underline{M-1}$	<u>M-2</u>	<u>M-5</u>	<u>M-6</u>	<u>M-7</u>	<u>M-8</u>	<u>M-9</u>	H-28
Arsenic	<0.01	0.02	<0.01	<0.01	<0.01	0.01	0.03	0.02
	0.20	0.13	0.15	0.10	0.18	0.23	0.23	0.08
Barium								
Cadmium	0.03	0.04	0.02	0.02	0.02	0.02	0.07	0.02
Chromium	12.7	9.15	0.02	0.02	<0.01	5.1	16.3	0.02
Fluoride	1	2	2	1	1	2	1	2
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Mercury	<0.001	<0.001	<0.001	0.001	0.001	<0.001	<0.001	<0.001
Nitrate	18.7	14.7	0.1	0.1	0.1	14.7	14.7	0.53
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	0.02	0.03	0.02	0.03	0.02	0.02	0.06	0.01
Endrin	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Lindane	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Methoxychlor	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toxaphene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-D	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2,4,5-TP (Silvex)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Turbidity, NTU	45	10	100	90	120	25	10	23
Coliform Bacteria,								
MPN/100 ml	<2.2	<2.2	<2.2	<2.2	16 .	<2.2	<2.2	<2.2
Hexavalent Chromium	12.7	6.0	0.02	0.02	<0.01	5.0	16.3	0.02



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

215 Fremont Street San Francisco, Ca. 94105

1 0 FEB 1983

C.B. Armstrong, Plant Manager Kerr-McGee Chemical Corporation P.O. Box 55 Hendersen, NV 89015

Re: NVD008290330

Dear Mr. Armstrong:

The Environmental Protection Agency is planning to inspect Kerr-McGee Chemical Corporation to assess compliance With federal ground water monitoring regulations found in 40 CFR Part 265, Subpart F. The inspection will be conducted by a qualified hydrogeologist under contract to EPA. An inspector a qualified nydrogeologist under contract to EFA. An incommental Protection will accompany the EPA contractor. In preparation for the inspection, I request that you submit, pursuant to Section 3007(a) of the Resource Conservation and Recovery Act, all information documenting compliance with these regulations. This information may include, but is not limited to, the

- o ground water sampling and analysis plans • maps showing well locations
- bore hole logs and well construction specifications
- ° geotechnical consultants reports and certifications Water level monitoring results
- chemical analyses results
- o statistical evaluations of data
- alternate ground water monitoring plans
- ground water monitoring waivers
- o ground water quality assessment plans or outlines.

If any of this information has already been submitted to EPA, there is no need to resubmit it. However, please advise us of the date of the original submittal.

Section 3007 of RCRA authorizes the Administrator of EPA to require persons subject to the Act to furnish information as may be necessary for the purpose of administering the Act. Failure to provide information would constitute a violation of the Act, and could subject the violator to enforcement action pursuant to Section 3008 of the Act.

The information requested must be provided notwithstanding its possible characterization as confidential information or trade secrets. If you believe that any portion of the information you submit is confidential, please assert a confidentiality claim in accordance with 40 CFR Section 2.203(b). EPA regulations covering confidentiality of business information are set forth in Part 2, Subpart B of Title 40 of the Code of Federal Regulations. A copy is attached for your guidance.

Please forward copies of the requested documents to this division within 10 days of receipt of this letter. If you have any questions or need any assistance, please call Karen Schwinn at 415-974-8158. Your cooperation is appreciated.

Sincerely yours,

Original Signed by:

Harry Seraydarian Acting Director Toxics & Waste Management Division

Attachment

cc: Verne Rosse



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

215 Fremont Street San Francisco, Ca. 94105

1 5 FEB 1983

RECEIVED

FEB 1 7 1983

ENVIRONMENTAL PROTECTION

Mr. R.B. Chase, Jr.
Plant Manager
Kerr-McGee Chemical Corporation
Post Office Box 55
Henderson, NV 89015

Re: Henderson Facility (EPA ID# NVD008290330)

Dear Mr. Chase:

Harry Seraydarian's letter to you of January 28, 1983, indicated that we would shortly be holding a pre-application meeting to discuss Part B of your hazardous waste permit application. We have arranged to hold this meeting on Wednesday, February 23, at 9:00 A.M. We have reserved the second floor conference room at the EPA Las Vegas Laboratory, La Plaza Complex Building "C", 4220 S. Maryland Parkway, Las Vegas.

Our past experience has shown these meetings to be valuable to both the applicant and EPA. We will both save time and effort with common understandings regarding the permit process. We expect the meeting to last all day. Please have your representatives be prompt, since a good deal of information must be covered.

Sincerely,

William D. Wilson Chief, Technical Assessment Section

cc: Vern Rosse, NDEP



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

28 JAN 1983

215 Fremont Street San Francisco, Ca. 94105

Mr. R.B. Chase, Jr.
Plant Manager
Kerr-McGee Chemical Corporation
Post Office Box 55
Henderson, NV 89015

Re: Henderson Facility (EPA ID# NVD008290330)

Dear Mr. Chase:

This letter constitutes a formal request for Part B of your application for a hazardous waste facility under the Resource Conservation and Recovery Act (RCRA) for the facility referenced above. This request is made under the authority of 40 CFR 122.22 (a)(4).

Enclosed for your reference is a list of the items which constitute Part B. Under separate cover, we are forwarding other materials to assist you in completing the Part B.

Part B must be filed by August 1, 1983. Two copies should be submitted to EPA (M-5) at the above address. Two copies should be submitted to the Nevada Division of Environmental Protection, Capitol Complex, Carson City, NV 89710.

We plan to hold a pre-application meeting in Las Vegas in the next six weeks to discuss the permitting process and application requirements. Further information will be forwarded to you on this shortly.

Please refer any questions you may have to William D. Wilson at the above address, or phone (415) 974-8391.

Sincerely yours,

Harry Seraydarian Acting Director Toxics & Waste Management Division

Enclosure

cc: Verne Rosse, NDEP

January 27, 1983

R.B. Chase, Jr.
Plant Manager
Kerr-McGee Chemical Corporation
P.O. Box 55
Henderson, Nevada 89015

Re: Anolyte Leak

Greetings:

This office has received your letter of 20 January 1983 which summarized the events of acid leakage. Your operating personnel are commended for their prompt action to convert a serious discharge to one of manageable proportions. The Division does not at this time consider taking action on this unauthorized discharge.

Some questions have arisen and you are directed to respond with reasonable detail.

Do you have a program of regular and complete inspections of this and other storage tanks, and are these inspections logged? Do inspections increase in frequency when tank liners are known to be at the end of their serviceability?

It has been indicated that this tank has suffered previous failures of its lining with consequent loss of acid to the soil base beneath it. This suggests that the acid buffering capacity of the alkaline soils is exhausted. You are requested to determine the geometry of this zone of exhausted capacity and propose schemes or devices whereby the buffering capacity is restored; this anticipates future lining failures and is mitigative of those possible discharges.

The in-ground concrete tank to which some of the anolyte was transferred was described during the telephone report as itself being leak prone. Is this buried tank used in routine operations or is it reserved to function as an emergency storage vessel; if so, it is prudent to repair its leaks. Is it practical to exhume this tank? Can it be replaced with a clay-lined storage pond to service future breaches in any tank liners? The soils surrounding this tank are also expected to have exhausted their acid buffering capacity.

R.B. Chase, Jr. January 27, 1983 Page -2-

A dike was built around the anolyte seepage area to contain the spill. Was there previously no dike or berm around this tank for spill containment? It is suggested that containment berms should be placed around this tank sufficiently sized to contain any leak or spill and lined with a material which minimizes percolation out of the bermed area.

The intent of these questions is to mollify the Division's concernation that recurrence of anolyte leakage has moderate to high probability. If this probability cannot be reduced to zero, then control, containment, and mitigation measures are warranted. Please respond to the above questions in that vein, supplementing the information as you feel will best illuminate prevention or mitigation of recurrent incidents of this nature.

Please telephone or visit if you wish to discuss this matter.

Respectfully,

Harry van Drielen

Environmental Management Sepcialist II



JAN 24 1983

ENVIRONMENTAL PROTECTION

January 20, 1983

CERTIFIED MAIL NO. P26 0233719

Mr. Harry van Drielen State of Nevada Division of Environmental Protection 201 South Fall Street Capitol Complex Carson City, NV 89710

Dear Mr. van Drielen:

The following is a chronology of the events surrounding the acid leak at our facility which was reported to you by phone:

On Sunday, January 16, shortly after 7 a.m., anolyte was discovered seeping out from under the anolyte storage tank. At the time the leak was discovered, the tank was more than three-quarters full; it contained about 400,000 gallons of solution. The following actions were taken and completed by approximately noon of the same day or shortly thereafter:

- The manganese dioxide cells were shut down, thus eliminating further input of fresh anolyte to the tank.
- The operating rate of the leach plant was increased to the maximum possible, thus increasing consumption of anolyte from the
- 3. A dike was built around the area, where the anolyte was seeping out from under the tank, to contain the spill.
- A pump and piping were put in place to transfer the contents of the tank to an in-ground process vessel nearby.
- The National Emergency Response Center was contacted and the requested information given to a Mr. Ambrozewicz.

? operational plan to inspect took? reestablishment of soul buffers. BID As a result of these actions, the leaking tank was emptied by early morning, Monday, January 17. We then proceeded to begin emptying the in-ground concrete vessel to which some of the volume had been pumped. Less than half of the total volume was pumped to this location. The in-ground tank was essentially empty at 5 a.m. on Tuesday, January 18.

Process volume inventories were taken at the time the leak was discovered and when the transfer operations were completed on January 18. As a result of these inventories, it is estimated that no more than 125,000 gallons were lost to the gound because of this leak and spill. The leaking solution contains 40 gpl sulfuric acid and 50 gpl manganese sulfate. This solution is considered hazardous due to its acid content only. The alkaline nature of the soils in this area will readily neutralize the acid lost.

The operating personnel did an excellent job of promptly responding to the problem and taking every possible action to mitigate the extent and danger of the release.

Sincerely,

KERR-McGEE CHEMICAL CORPORATION

R. B. Chase, Jr. Plant Manager

RBC:jc



January 24, 1983

RECEIVED

JAN 25 1983

ENVIRONMENTAL PROTECTION

Mr. H. Laverne Rosse Program Director Waste Management State of Nevada Division of Environmental Protection 201 South Fall Street Carson City, NV 89710

Dear Mr. Rosse:

The attached Figure 1 was inadvertently left off the Hazardous Waste Disposal Closure and Post-Closure Plan for Hazardous Waste Landfill which was mailed to you January 21, 1983.

Sincerely,

R. B. Chase, Jr.
Plant Manager

RBC:jc Attachment

cc: Region IX EPA-San Francisco w/att.



January 21, 1983

565-8901

JAN 24 1983

ENVIRONMENTAL
PROTECTION

CERTIFIED MAIL NO. P26 0233692

Mr. H. Laverne Rosse Program Director Waste Management State of Nevada Division of Environmental Protection 201 South Fall Street Carson City, NV 89710

Dear Mr. Rosse:

Attached for your approval is the closure plan for our hazardous waste landfill which will be taken out of service as of January 25, 1983.

Sincerely,

R. B. Chase, Jr. Plant Manager

RBC:jc Attachment

cc: Region IX EPA-San Francisco w/att.

HAZARDOUS WASTE DISPOSAL CLOSURE AND POST-CLOSURE PLAN FOR HAZARDOUS WASTE LANDFILL Henderson, Nevada Plant

These plans are to be retained as a permanent record and are not to be amended without approval as noted.

DISPOSAL OPERATION

Hazardous wastes disposed of on-site consist of chromium-bearing materials. Final disposal is by means of landfill. Closure of these operations is described below. Closure operations will commence within 90 days of receiving the final volume of waste and will be completed within 180 days.

CLOSURE OF LANDFILL

Solid hazardous wastes comprised of filter cakes and precipitates from the sodium chlorate operation and containing chromium in excess of EP toxicity test criteria are disposed of in a cell trench in an area near the northwest corner of the plant property. The area is shown in the attached drawing, Figure 1.

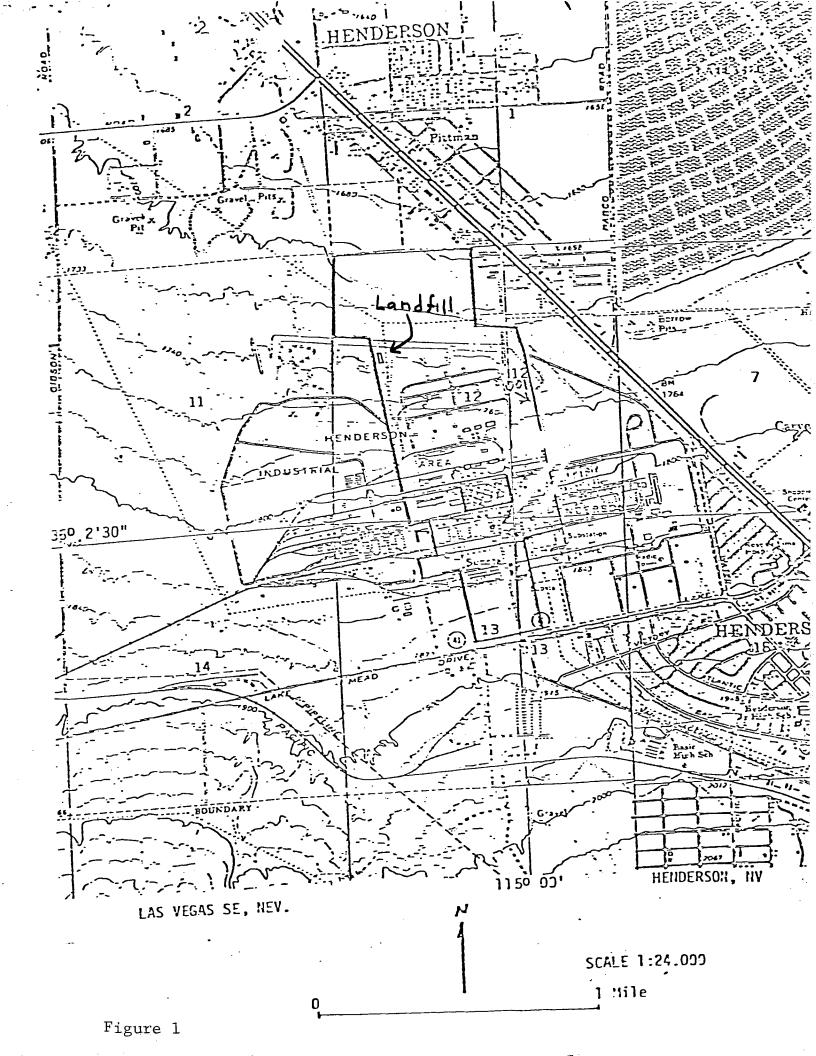
Cells are constructed below grade with dimensions approximately 20 feet wide x 20 feet deep x 300 feet long. Each cell is filled to within no more than two feet of the surface with 18 feet waste. The wastes are compacted during the filling process to minimize later subsidence. The capacity of one cell is about 100,000 cubic feet or about two years of waste accumulation from process operation. When filling of the cell with waste is complete, the cell is closed by covering the area with a synthetic liner, e.g., PVC of minimum 30-mil thickness, to prevent any water contact, then covered with a minimum of two feet of native soil (sand and gravel). Extra soil is added to the center of the cell and graded to a final top slope after settling and subsidence of 2 to 4 degrees to facilitate runoff in a direction away from adjacent closed or active cells. No vegetative cover or special drainage layer between the soil and synthetic liner will be necessary due to the low rainfall experienced in the area and the natural rate of evapotranspiration. Although rainwater penetration from any anticipated rainfall event in this location will not cause water to penetrate the two feet of soil, the added synthetic cover guarantees no water will contact the material. Therefore, it is not expected that any leaching or transport of contaminants to groundwater will ever occur from the buried waste.

HAZARDOUS WASTE DISPOSAL CLOSURE AND POST-CLOSURE PLAN FOR HAZARDOUS WASTE LANDFILL Page 2 January 21, 1983

In addition, the cell area has diversion structures and diking to prevent run-on of rainwater, thereby minimizing any potential contact with the waste material.

The landfill will not receive wastes after Tuesday, January 25, 1983, and will be removed from service by closure as described above. Cost of closure will be approximately \$16,000 and includes certification by an independent registered professional engineer.

Post-closure care consists of semi-annual groundwater sampling for indicator parameters, i.e., pH, specific conductance, TOC, TOH, and annual sampling for groundwater quality parameters, i.e., Cl, Fe, Mn, SO_4 , and chromium. Regular inspection and maintenance of final cover will be performed and log sheets maintained. Groundwater monitoring is anticipated for five years (a period two and a half times the active life of the cell), at which time KMCC will petition for suspension of future monitoring if no statistical groundwater impact is observed.





January 21, 1983

RECEIVED

JAN 24 1983

ENVIRONMENTAL PROTECTION

CERTIFIED MAIL NO. P21 7028084

Mr. Phil Bobel, Chief
Toxics & Waste Programs Branch
United States
Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, CA 94105

Re: T-2-1 NVD008290330

Dear Mr. Bobel:

Attached is a copy of a letter sent to the State of Nevada on August 25, 1982, responding to the deficiency observed in their inspection in accordance with the Resource Conservation and Recovery Act of 1976.

We trust this satisfies your request for a status report.

Sincerely,

R. B. Chase, Jr. Plant Manager

RBC:jc

Attachment

cc: Verne Rosse, NDEP

August 25, 1982

CERTIFIED MAIL NO. P26 0233691

Mr. H. Laverne Rosse Program Director - Waste Management State of Nevada Division of Environmental Protection Capitol Complex Carson City, NV 89710

Dear Mr. Rosse:

We have received your interim status inspection report of <u>July 23. 1982</u>, concerning the Henderson facility. We note in the Overview it is construed we generate 900 tons per year of hexavalent chromium. In actuality, we generate 900 tons of total solid waste in which only a very small fraction (Ca. 0.05 wt.%) is chromium.

In the report under General Inspection Requirements, it was noted that our contingency plan emergency equipment was not itemized. To rectify this, the attached list has been made a part of our record.

We trust that you will amend your records appropriately.

Sincerely,

C. B. Armstrong Plant Manager

Plant Mar A:jc

CBA:jc Attachment

150 FT. 150 FT.	1 EA.		1 EA.				Č	. Z EA.	, , , , , , , , , , , , , , , , , , ,	2 F.B.	1 EA.		2 EA.	6 EA.	1 806.	6 EA.	4 EA.			6	2 FA	5	2 EA.	2 EA.	2 EA.	2 EA.	2 EA.	2 EA.	3 EA.	13 EA.	. 47 (, C , C , C , C , C , C , C , C , C , C	15.	
1. FIRE HOSE - 1 1/2" 2. FIRE HOSE - 3"		TRASH PLYP - MODEL PT. 3/	•	7. AIR PAK		S12E 111 EA.	\$12E 121 EA.		CHAIN BINDERS		•	14. LW-ALL			-				LARGE0	X-1.4RGE0	21. FIRE HYDRANT WRENCHES	22. FIRE HOSE ADAPTERS	23. SIGNS:	DANGER HIGH VOLTAGE	DANGER CHUCKING		כבט ביים ביים ביים ביים ביים ביים ביים בי	DETOUR	RED FLAGS	24. FIRE EXTINGUISHERS - 115 DRY POWDER	-			28. FUSION UNIT - 2"



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

215 Fremont Street. San Francisco, Ca. 94105

> Certified Mail P364170343 Return Receipt Requested

DEC 2 3 1982

In Reply T-2-1
Refer To: NVD008290330

Mr. Richard Wohletz Kerr - McGee Chemical Corporation P.O. Box 55 Henderson, NV 89015

Dear Mr. Wohletz:

On July 23, 1982 a hazardous waste investigation was conducted at your facility by the Nevada Division of Environmental Protection. This inspection was conducted by the State as our authorized representative. During the course of this investigation, information was gathered by the State representatives in accordance with Section 3007 of the Resource Conservation and Recovery Act of 1976 (RCRA). A copy of the investigation report is enclosed for your information.

The following minor deficiency was observed during the records review and facility inspection:

40 CFR 265.52(e) - The Contingency Plan does not include a list of all available emergency equipment, the location and a physical description of each item on the list, and a brief outline of its capabilities.

You are hereby requested to submit a written status report within thirty (30) days of receipt of this letter, certifying that corrective measures have been implemented and compliance achieved. This report should include supporting documentation describing measures taken and copies of any written plans, forms or procedures developed.

If you have any questions concerning this letter, please contact Paul D. Blais, RCRA State Programs Section at (415) 974-8129.

Sincerely yours,

Phil Bobel

Chief, Toxics & Waste Programs Branch

Enclosure

/cc: Verne Rosse, NDEP

October 26, 1982

OCT 2 7 1982

ENVIRONMENTAL PROTECTION

CERTIFIED MAIL NO. P26 0233713

Mr. Bill Wilson, Chief
Technical Assessment Section
Toxics and Waste Programs Branch
U. S. Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, CA 94105

Re: Second Quarter 1982 RCRA Groundwater Monitoring Data, Henderson, Nevada Facility, Kerr-McGee Chemical Corporation, EPA ID No. NVD 008290330

Dear Mr. Wilson:

Please find attached in Tables I (landfill) and II (surface impoundments) completed second quarter 1982 RCRA groundwater monitoring data for the Kerr-McGee Chemical Corporation facility at Henderson, Nevada. These data supplement the partial data submitted on August 17, 1982. This data summary is supplied in accordance with 40 CFR 265.94(2)(i).

The cadmium concentration in all reported wells exceeds the NIPDWS limit of 0.01 mg/L. The turbidity limit of 1 NTU is also exceeded in all wells. Chromium exceeds the NIPDWS limit of .05 mg/L in the surface impoundment wells M-1, M-2, and M-3. Nitrate limits of 10 mg/L as N are exceeded in wells M-1, M-3, and M-4. The NIPDWS silver limit of 0.05 mg/L is exceeded in wells M-2 and M-3. In the landfill wells, the NIPDWS limit of 1.4-2.4 mg/L for fluoride is exceeded in M-5, M-6, and M-7. Coliform NIPDWS limits of 1/100 mL are exceeded in wells M-5, M-6, and M-7.

Sincerely,

Ŕ. B. Chase Plant Manager

RBC:jc Attachment

cc: H. L. Rosse-Carson City

TABLE I

SECOND QUARTER 1982 RCRA GROUNDWATER MONITORING DATA
KERR-MCGEE CHEMICAL CORPORATION - HENDERSON FACILITY

LANDFILL

Domonoto	-	Upgradient We	11 Dc	wngradient	Wells ·
Paramete	Т	M-5	M-6	M-7	H-28
Arsenic	(mg/L)	0.02	<0.01	<0.01	0.01
Barium	11	0.10	0.08	0.12	0.09
Cadmium	n	0.02	0.02	0.02	0.02
Chromium	11	0.01	0.01	<0.01	0.01
Fluoride	11	3.6	2.5	2.5	1.0
Lead		<0.01	0.02	<0.01	<0.01
Mercury	11	<0.001	<0.001	<0.001	0.012
Nitrate (as N)	11	0.45	0.22	0.22	0.2
Selenium	11	<0.005	<0.005	<0.005	<0.005
Silver	***	0.02	0.01	0.01	0.02
Endrin	**	<0.0002	<0.0002	<0.0002	<0.0002
Lindane	**	<0.004	<0.004	<0.004	<0.004
Methoxychlor	11	<0.1	<0.1	<0.1	<0.1
Toxaphene	11	<0.005	<0.005	<0.005	<0.005
2,4-D	**	<0.1	<0.1	<0.1	<0.1
2,4,5-TP Silve:	x "	<0.01	<0.01	<0.01	<0.01
Gross Alpha	(pCi/L)	<40	<20	<40	< 40
Gross Beta	(pCi/L)	40 <u>+</u> 30	40 <u>+</u> 20	60 <u>+</u> 20	50±20
Radium	(pCi/L)	< 2	< 2	< 2	< 2
Coliform	(MPN/100 mL)	240	93	4	<2.2
Turbidity	(NTU)	2000	2000	2000	35

Analysis by Truesdail Laboratories, Inc., Los Angeles, CA.

TABLE II

SECOND QUARTER 1982 RCRA GROUNDWATER MONITORING DATA KERR-MCGEE CHEMICAL CORPORATION - HENDERSON FACILITY

SURFACE IMPOUNDMENTS

Paramete	r	Upgradient Well		wngradient	
ralamete		M-1	M-2	M-3*	M-4
Arsenic	(mg/L)	<0.01	0.03	<0.01	<0.01
Barium	11	0.18	0.23	0.27	0.09
Cadmium	11	0.03	0.05	0.06	0.01
Chromium	11	12.9	10.0	44	0.01
Fluoride	11	0.7	1.0	0.7	1.0
Cead	n	<0.01	<0.01	<0.01	<0.01
lercury	11	<0.001	<0.001	<0.001	<0.00
Nitrate (as N)	11	11.2	8.8	44	11.1
Selenium	11	<0.005	<0.005	<0.005	<0.00
Silver	11	0.04	0.10	0.09	0.03
Endrin	11	<0.0002	<0.0002	<0.0002	<0.00
indane	11	<0.004	<0.004	<0.004	<0.00
sethoxychlor (11	<0.1	<0.1	<0.1	<0.1
oxaphene	11	<0.005	<0.005	<0.005	<0.00
2,4-D	11	<0.1	·<0.1	<0.1	<0.1
,4,5-TP Silve	x "	<0.01	<0.01	<0.01	<0.01
Gross Alpha	(pCi/L)	<100	<100	<200	<40
ross Beta	(pCi/L)	80±20	720±40	300 ±40	30 ±20
Radium	(pCi/L)	<2	<2	<2	<2
Coliform	(MPN/100 mL)	<2.2	<2.2	<2.2	<2.2
Turbidity	(NTU)	45	57	2.5	85

Analysis by Truesdail Laboratories, Inc., Los Angeles, CA.

^{*} Monitor wells M-3 and M-4 were replaced by wells M-8 and M-9 following second quarter analysis.

erA TSD Fac. No. N V D O O 0 8 2 9 0 3 3 5 0 19 8 2 M-1 Sulfate 0000 868 1190 1120 Phone: (702,565-8901 Gradiant Up XX Company Wall Number Sadium mg/l Coliforn Betting 1/100 ml Silver mg/l 1260 1085 1170 0,04 0.04 0.02 Ropart for: 89015 <2.2 Zip: Gross Bets pC1/1 Phanois mg/i Selenium mg/l <0.005 <0.005 <0.005 0.01 <0.01 <0.01 <20 Gross Alpha pCI/i Manganasa mg/l Nitrate mg/l as N) 0.04 0:09 0.07 0.91 11,2 18.7 <15 . . . ::4 Marcury mg/l Radium pCI/I 0,001 Iron mg/i <0,001 <0.001 0.16 0.40 0.27 77 Surface Impoundment Chlorido GROUND WATER MONITORING REPORT nıa/l Salvey Man FOR HAZARDOUS WASTE FACILITIES Lead mg/I 1450 1625 2000 <0.01 <0.01 <0.01 <0.01 . Total Organic ... Halogan mo/4 51.5 Fluorida mg/l 528 2,4.D mg/l 615 1.0 0 0.7 <0.1 Kerr-McGee Chemical Corporation Nevada : Total Organic Carbon mg/l Chromium mg/l Toxaphene mg/l <0.005 12.2 12.9 4.3 18.3 21.3 Henderson Methoxychlor mg/l 11,350 Conductivity µmhos mg/l Cadmium ' mg/l 12,250 11,600 0.03 0.03 0.03 <0.1 Box pH Standard Lindane mg/l Barium mg/l <0.004 0.18 0.20 0.21 7.4 7.3 c st Year (initial) Background 1751.63 1750.51 1750.72 Ground Water Elev. Fr. Sample Occurring <0.0002 Arsenic mg/l Endrin mg/l 0.01 <0.01 <0.01

ss Address:

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GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES

M-6 Company Wall Number

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ress Address:		P. O. Box 55	Box 55	- Henderson, NV	son, NV				Zip:	Zip: 89015	
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GROUND WATER MONITORING REPORT FOR HAZARDOUS WASTE FACILITIES

Company Wall Number

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Report for:

Phone: (702 ,565-8901 Kerr-McGee Chemical Corporation

uny Name: iss Address:		P. O. Box 55		Henderson.	NV	L - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2			Zip: 89015	19015	
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Frank

OCT 14 1982

ENVIRONMENTAL PROTECTION

October 11, 1982

Mr. H. LaVerne Rosse, P.E.
Department of Conservation and Natural Resources
Division of Environmental Protection
Capitol Complex
Carson City, Nevada 89710

Dear Mr. Rosse:

Per the requirements of the Acurex Waste Technologies, Inc. (AWT) PCB treatment permit issued by EPA Region 9, you must be notified of the activities of this system within your area.

Exceltech, Inc. is the exclusive licensed agent for AWT's PCB treatment system within EPA Region 9.

AWT and Exceltech hereby notify you that we will be treating 10,000 gallons of PCB-contaminated transformer oil at the Kerr-McGee Chemical Corporation site located in Henderson, Nevada. The treatment will take place between November 15 and December 15, 1982.

If you have any questions regarding this matter, please contact me.

Sincerely,

Donald E. Fraser

Ionald & Linear

President

DEF:wa

Frank

OCT 14 1982

ENVIRONMENTAL PROTECTION

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If you have any questions regarding this matter, please contact me.

Sincerely,

Donald E. Fraser

President

DEF:wa



RCRA CLOSURE/POST CLOSURE INSPECTION REPORT

INSPECTION OF:

KERR-MCGEE CHEMICAL CORPORATION Lake Mead Drive Henderson, NV 89015 (702) 565-8901

EPA ID #: NVD 008290330

FACILITY TYPE: STORAGE, TREATMENT AND DISPOSAL

DATE: September 22, 1982

TIME: 1:00 P.M.

PARTICIPANTS:

Chuck Armstrong, Kerr-McGee - Plant Manager Richard Wohletz, Kerr-McGee - Technical Superintendent Frank Steinberg, Nevada Dept. of Environmental Protection Harry Takach, Mittelhauser Corporation

OVERVIEW:

This inspection report covers Kerr-McGee - Chemical Corporation's Henderson, Nevada Plant's:

- Facility Description
- Part A Application
- Closure Plan
- Post-Closure Plan
- Cost Estimates

The Kerr-McGee representatives stated that revised closure plan was being prepared but was not a significant change. The revisions basically brought the plan up to consistency with the revised RCRA Part A application dated 7/12/82 and general procedures and costs revisions or updates.

This staff also proposed that EPA might consider a different sampling strategy when performing these inspections. They suggested a percentage of an EPA region rather than a fixed number per state. That action would minimize the number of Kerr-McGee's inspections since Nevada is not a very representative state (Note - only six RCRA sites are located in Nevada).

More detailed information can be obtained from the attached checklist.

FACILITY DESCRIPTION

The Henderson, Nevada plant manufactures industrial chemicals including sodium chlorate, ammonium perchlorate, potassium perchlorate, manganese dioxide, boron trichloride, boron tribromide and elemental boron. The source of wastes sent to the landfill are filtercake solids produced during the sodium chlorate production step. Liquids sent to the surface impoundments are produced during the production of potassium perchlorate.

Chromate-bearing wastes constitute the key component which makes their wastes fall under RCRA. They are closely following the developments of EPA's proposals to delist trivalent chromium from the hazardous constituent list.

REVIEW OF THE PART A APPLICATION

This plant is handling the type of wastes listed in the facilities noted in their Part A RCRA Application.

CLOSURE PLAN

The closure plan is part of a larger, more encompassing environmental document. Although addressing most of the necessary closure details, it is lacking in others, such as security and cap design and support details. Kerr-McGee staff noted that all these data are covered and found in other sections of this other document.

Information and data to support the adequacy of the cap design is not found in the closure plan. Discussion during the meeting presented adequate general support such that I feel that this data is available and the design is adequate. This type of information should be documented in the plan sufficient to support the design basis.

Due to continuing industrial operations, there is no date projected for final closure. Therefore, some of the RCRA items are not presented such as Maximum Extent of Operation and Maximum Inventory or lacking in detail such as groundwater monitoring and decontamination.

The surface impoundments are evaporated to dryness prior to closing operations. The schedule for closure is not provided but may take longer than 180 days to complete. Understanding and complying to this maximum time schedule should be discussed.

POST-CLOSURE PLAN

The section of the plan does not contain a great deal of narrative or information. Comments at the inspection visit noted that further information were contained in other sections of the existing larger scope environmental document, especially groundwater monitoring and existing security. Site inspection noted the groundwater monitoring wells in place as well as fencing although these items were not mentioned in the plans. Also, they gave me two figures referenced in their closure/post-closure plan but not included in my file from EPA which were extremely helpful in understanding their RCRA facilities and uses.

COST ESTIMATES

At our meeting, Kerr-McGee staff exhibited clear understanding that supporting documentation and past experience would demonstrate the adequacy of the cap design for the landfill and surface impoundment areas. This information should be placed in their plan revision to assist the acceptance of this design. Therefore, the associated cost estimate for filling and capping these areas is probably adequate.

The only mention of groundwater monitoring in this entire plan is in the Financial Requirements section as one of the cost entries. This figure did not have units but was said to represent the total cost projected for analytical work over the 30-year period. They have just drilled the one upgradient and three downgradient wells and have just initiated a baseline sampling program, analyzing for pH, conductance and chromium.

The plans estimate the number of landfill cells and surface impoundments that may be required to be closed over the next 30 years. The closure costs present the respective costs to close either a landfill cell or an impoundment basin. The total cost over the next thirty years can then be estimated in current dollars as \$170,000.



August 25, 1982

AUG 26 1982

CERTIFIED MAIL NO. P26 0233691

EMVIRONMENTAL PROTECTION

Mr. H. Laverne Rosse Program Director - Waste Management State of Nevada Division of Environmental Protection Capitol Complex Carson City, NV 89710

Dear Mr. Rosse:

We have received your interim status inspection report of July 23, 1982, concerning the Henderson facility. We note in the Overview it is construed we generate 900 tons per year of hexavalent chromium. In actuality, we generate 900 tons of total solid waste in which only a very small fraction (Ca. 0.05 wt.%) is chromium.

In the report under General Inspection Requirements, it was noted that our contingency plan emergency equipment was not itemized. To rectify this, the attached list has been made a part of our record.

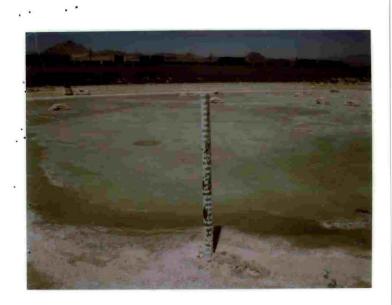
We trust that you will amend your records appropriately.

Sincerely,

C. B. Armstrong Plant Manager

CBA: jc Attachment

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August 17, 1982

RECEIVED

AUG 1 8 1982

CERTIFIED MAIL NO. P26 0233707

ENVIRONMENTAL PROTECTION

Mr. W. Marvin Tebeau, Environmental Scientist State of Nevada Department of Conservation and Natural Resources Division of Environmental Protection Capitol Complex Carson City, NV 89710

Dear Mr. Tebeau:

The following information is provided in response to your letter of June 23, 1982, concerning our pond monitoring system. Numbered items correspond to those in your letter.

- 1. Enclosed is another photo of a typical gauging device.
- 2. Pond levels are recorded on a large wall chart which is available at the plant for review.
- 3. Should a pond be suspected of leaking, the following procedure is initiated:
 - a) An effort is made to learn whether an activity or event may have taken place which could have punctured the pond lining;
 - b) The pond is isolated from service, or volumes added to pond are recorded;
 - c) The pond level is carefully tracked and compared with the estimated level change due to evaporation;
 - d) The pond is sampled on an accelerated schedule to determine if an inventory change, indicative of a leak, takes place; and
 - e) Findings are evaluated. Should the investigation determine that a leak exists, the pond is drained and repaired, if possible, or replaced, if necessary.
- 4. See Item 3, above.

Mr. W. Marvin Tebeau Page 2 August 17, 1982

- 5. Analytical data and salt inventories are confidential and not for indiscriminate distribution; however the results are available at the plant for review.
- 6. Through the monitoring system, pond AP-2 was determined in 1979 to have a leak. The procedure outlined in Item 3, above, was followed and the leak point was found and repaired. The liner was subsequently completely replaced.

It is our belief that the monitoring system we have employed permits relatively early recognition of a possible leak in comparison with groundwater monitoring wells. In the case of our AP ponds, groundwater results would tend to be masked by leakage from the beta ditch. Nevertheless, we now have in place several wells in satisfaction of RCRA requirements, and we will in the future sample these wells on a quarterly basis as a check on pond leakage. These wells, i.e., M-1, M-2, M-3, M-4, M-8, and M-9, are shown on the enclosed map. We are amending our plan to include this feature.

We trust that you will find our monitoring programs, as further detailed and explained above, to be satisfactory.

Sincerely,

KERR-McGEE CHEMICAL CORPORATION

C. B. Armstrong Plant Manager

CBA:jc Enclosures

KERR-McGEE CHEMICAL CORPORATION Henderson, Nevada

POND LEAKAGE MONITORING PLAN

BACKGROUND

A major facet of the Henderson Plant's program for control of discharges involves the impoundment of various effluent streams. It is necessary to insure that groundwaters are not significantly contaminated by leakage from the impoundment areas. The basic measure to prevent percolation of these streams into the soil is the utilization of impervious membrane liners for the containment ponds. The liner materials have been carefully selected and installed under the supervision of experts to insure maximum integrity; nevertheless, it is prudent to assume that for one reason or another the membrane may leak at some time in the future, and means of detecting leakage should be available.

LOSS LIMITATION

The engineering and implementation of the plant's effluent control program in 1975 employed two fundamental principles which prevent significant groundwater contamination, even in the event of a catastrophic failure of a pond lining:

- 1. Rather than all streams discharging into a single, large impoundment area, they have been grouped according to composition, and each group is discharged to its own pond. Thus eight separate ponds are designated for receiving plant wastes. Complete rupture of a pond lining, then, would still limit the loss to a small fraction of that which would otherwise occur if only a single pond had been utilized.
- 2. Where practicable, impounded liquors are returned to an appropriate process and the contained salts recovered. Thus the contents of these ponds do not increase indefinitely, but in fact are periodically reduced through recovery in plant operations.

MONITORING FOR LEAKS

An important factor relating to leak detection is the restricted size of the ponds (the largest is 1.4 acres) which alone makes leaks more readily apparent by casual observation. Nothwithstanding this fact, a plan to detect small leaks is employed.

The monitoring procedure, termed the *Inventory Method*, involves keeping a running record of the contents in each pond, and takes advantage of the considerable analytical expertise and facilities available and in regular use at this location.

In each pond a gauging device (see photograph) is situated to permit easy determination of the pond level. Such determinations are made twice weekly and plotted on a chart. Any changes in trend lines are made readily apparent by the graphic presentation, triggering a check into possible causes. If the changes are not explained by process or another (evaporation, rainfall) factor, a leak may be present and a thorough investigation into this possibility is initiated. Since the ponds frequently have periods of several days or weeks during which there is no inflow or outflow, even small leaks, if present, would become readily apparent through this inventory procedure.

As a further check, each pond is sampled twice monthly. These samples are analyzed for the major contained salts, e.g., sodium chloride, sodium chlorate, or ammonium perchlorate, and the quantities of these salts held by each pond are calculated. Regular comparisons of these inventories, again in relation to in/out activity, provide confirmation of pond integrity. Additionally, groundwater wells installed in compliance with RCRA are sampled quarterly and analyzed for conductivity, sodium chlorate, and chromate as a complement to the inventory method.

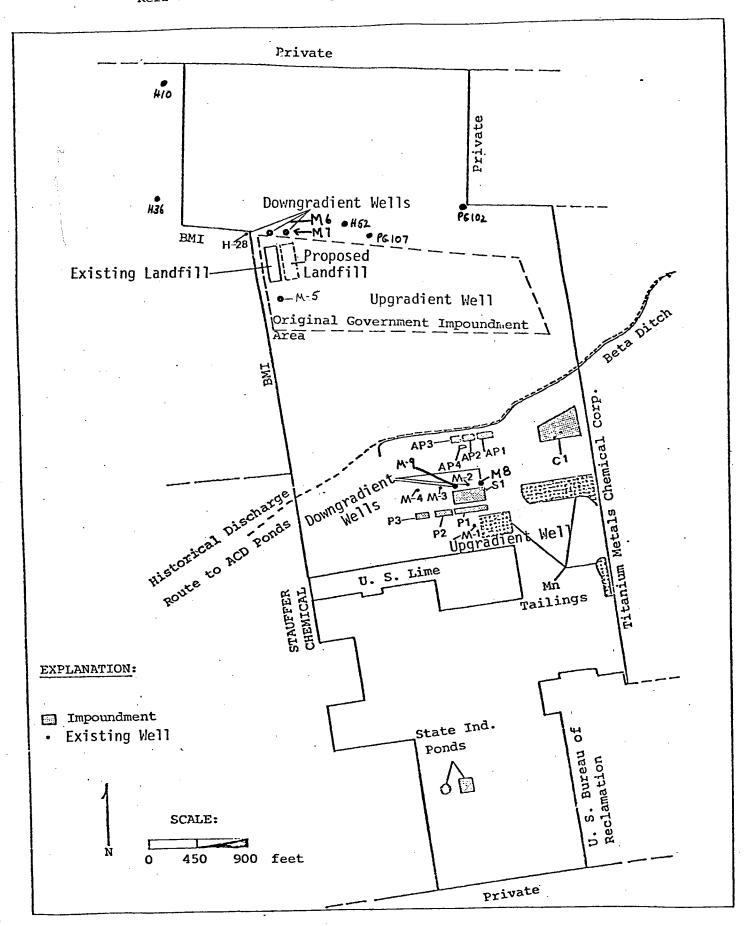
Finally, daily observations of the ponds are made to detect any gross abnormalities or changes.

August 14, 1974 - Original

August 16, 1982 - Revision 2

FIGURE 1. MAP SHOWING LOCATIONS OF PROPOSED GROUNDWATER MONITORING WELLS.

Kerr-McGee Chemical Corporation's Henderson Facility



August 5, 1982



AUG 9 - 1982

ENVIRONMENTAL PROTECTION

Mr. Frank S. Steinberg
Environmental Specialist
Hazardous Waste Management
State of Nevada
Division of Environmental Protection
201 South Fall Street
Capitol Complex
Carson City, NV 89710

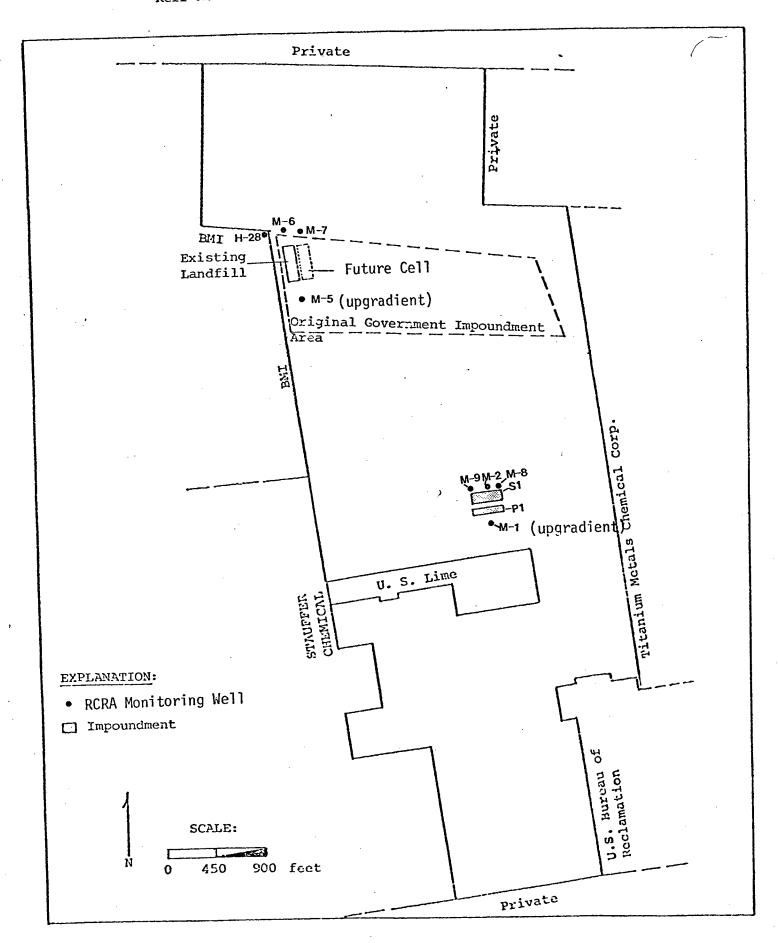
Dear Mr. Steinberg:

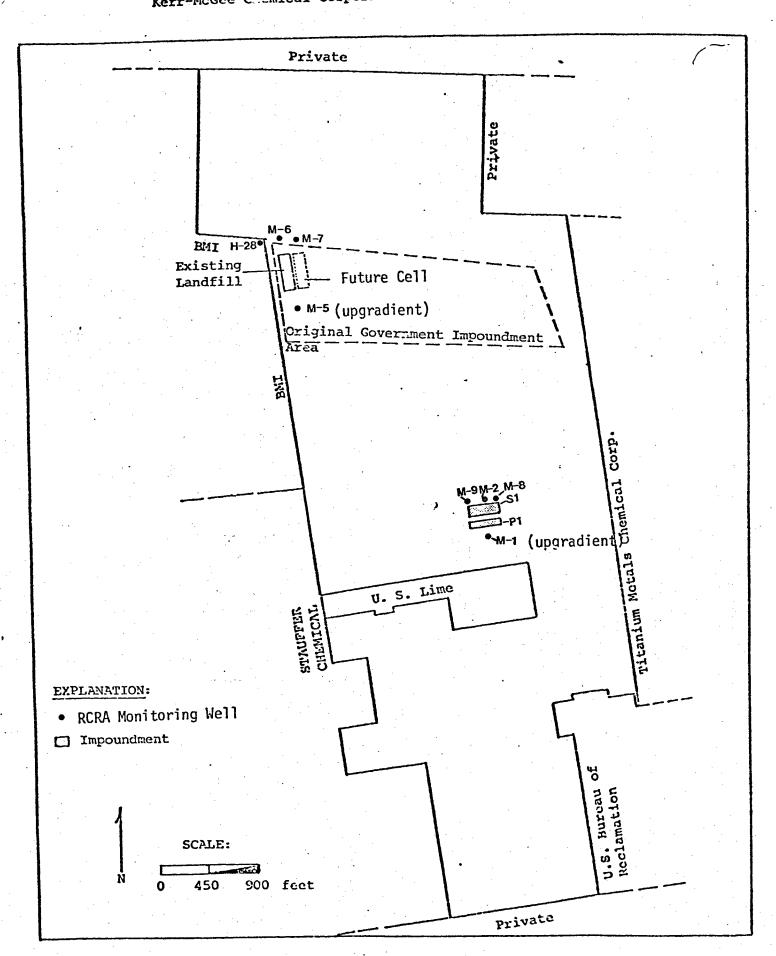
During your recent visit to our plant concerning hazardous waste matters, I understand that you requested an updated map showing the location of our RCRA groundwater monitoring wells. A copy of such a map is enclosed.

Sincerely,

C. B. Armstrong Plant Manager

CBA:jc Enclosure





June 4, 1982

JUN 7 - 1982

ENVIRONMENTAL PROTECTION

CERTIFIED MAIL NO. P26 0233689

Mr. L. H. Dodgion, Administrator Division of Environmental Protection Capitol Complex Carson City, NV 89710

Dear Mr. Dodgion:

Item 5 of your <u>Order</u> of February 25, 1982 requested a determination of the quantity of water lost from our Henderson facility to the aquifer above the Muddy Creek formation. This matter was discussed by Messrs. Tebeau and Rosse at the March 11, 1982, meeting in the Basic Management, Inc., conference room, and it was decided to defer action until a later date. Mr. Rosse's subsequent letter of May 5, 1982, addressed to Basic Management, Inc., requested that a report be submitted on this subject by June 7, 1982.

During the meeting of March 11, 1982, referred to above, it was suggested that a water balance over the plant would identify and indicate the magnitude of the subject losses. The attached sheet presents an estimated water balance for Kerr-McGee Chemical Corporation's facility at Henderson, based upon the quantity of water paid for in the calendar year 1981. We have a number of comments concerning the data.

- 1. The water input to this plant is determined by differences between several incoming and outgoing water meters on pipelines in this facility. Meter errors can be very significant, particularly in months of low usage.
- 2. Cooling tower evaporation and windage losses are estimated, based on known data concerning tower operation. No accurate measure of actual makeup is available. Water is added to the recirculated cooling water system at a number of locations within the plant.

Mr. L. H. Dodgion Page 2 June 4, 1982

3. The remainder of the water consumption data is based on information about plant operations and ranges in reliability from calculations based on known operating parameters to estimates based on good engineering judgment.

The only known losses of water into the ground are seepage from the unlined channel which conveys once-through cooling water to the entrance of the BMI syphon located on TMCA property and that used for landscape irrigation. Much of the latter, of course, is consumed or transpired by the plants. Based upon information provided by the Bureau of Reclamation, Boulder City, we estimate that seepage from the channel would have been about 19 million gallons in 1981, or about 100,000 gallons each day of use.

Because the numbers in the water balance are so large and their accuracy so limited, it is impossible to use them to determine whether unknown water flows into the ground, such as from water main leaks, may or may not exist. We believe, however, that since leaks from storage tanks and process vessels would be detected were they to exist, and since provision is made for the return of process spills to operation, leaks of process materials into the ground are inconsequential.

We trust that this will satisfy your requirements in this matter, but we will be glad to answer any questions you may have.

Sincerely,

KERR-McGEE CHEMICAL CORPORATION

C. B. Armstrong Facility Manager

CBA:jc Attachment

ESTIMATED WATER BALANCE FOR

HENDERSON FACILITY, KERR-McGEE CHEMICAL CORPORATION

Basis: Year 1981	Million Gallons Per Year					
Water Input						
Water billed by BMI	733					
Water contained in raw materials and reagents purchased	1					
Total	734					
Water Output						
Discharge of once-through cooling water	540					
Evaporation and windage at cooling towers	141					
Decomposed electrolytically	6					
Evaporation from open process vessels	6					
Sanitary waste	26					
Evaporation from waste and process ponds	8					
Evaporation in wet scrubbers	1					
Evaporation in material drying operations	1					
Evaporation from solid waste during and after disposal	4					
Landscape watering	1					
Total	734					

May 21, 1982

CERTIFIED MAIL NO. P26 0233626

RECEIVED

MAY 24 1982

ENVIRONMENTAL PROTECTION

Mr. H. Laverne Rosse Program Director - Waste Management State of Nevada Division of Environmental Protection Capitol Complex Carson City, Nevada 89710

Dear Mr. Rosse:

Your letter of May 5, 1982, to Mr. George Stewart, President, Basic Management, Inc., requested certain information of Kerr-McGee Chemical Corporation relating to our previous response dated March 31, 1982, to the Division's February 25, 1982, order. As we discussed by telephone last week, much of the requested information was included in our initial response. We identify below specific references which relate to the matters of concern.

Item 1.

Of the elements listed, we identified chromium as a minor constituent in the solid waste generated by our sodium chlorate operation (see page 2, "Response to DEP Order", middle paragraph and page 4, middle paragraph). We do not purchase or process any cyanide, arsenic, selenium or antimony chemicals.

Item 2.

We identified chromium as a minor constituent of wastes generated at our Henderson facility. The earlier disposal of these wastes to BMI ponds (liquids) and the BMI dump (solids) are described on pages 1 through 4 of our response. Quantities are indicated in our attachment 10B.

Item 3.

About two tons per day of filter cake containing .05 percent or less of chromium is produced by our sodium chlorate operation, (Response, page 2, middle paragraph).

Mr. H. Laverne Rosse Page 2 May 21, 1982

We discussed our manganese ore processing during our telephone conversations and you requested a copy of the test procedure used to determine that our tailings are non-hazardous (attachment 5). We enclose a copy of the referenced Federal Register pages. In addition you requested that the locations of solid waste disposal sites on our property be noted on a map. We enclose copies of the drawings which had been submitted to the EPA (attachment 5), with markings to more clearly identify those locations.

We trust that this additional information adequately clarifies our March 31, 1982, response to the DEP's order.

Very truly yours,

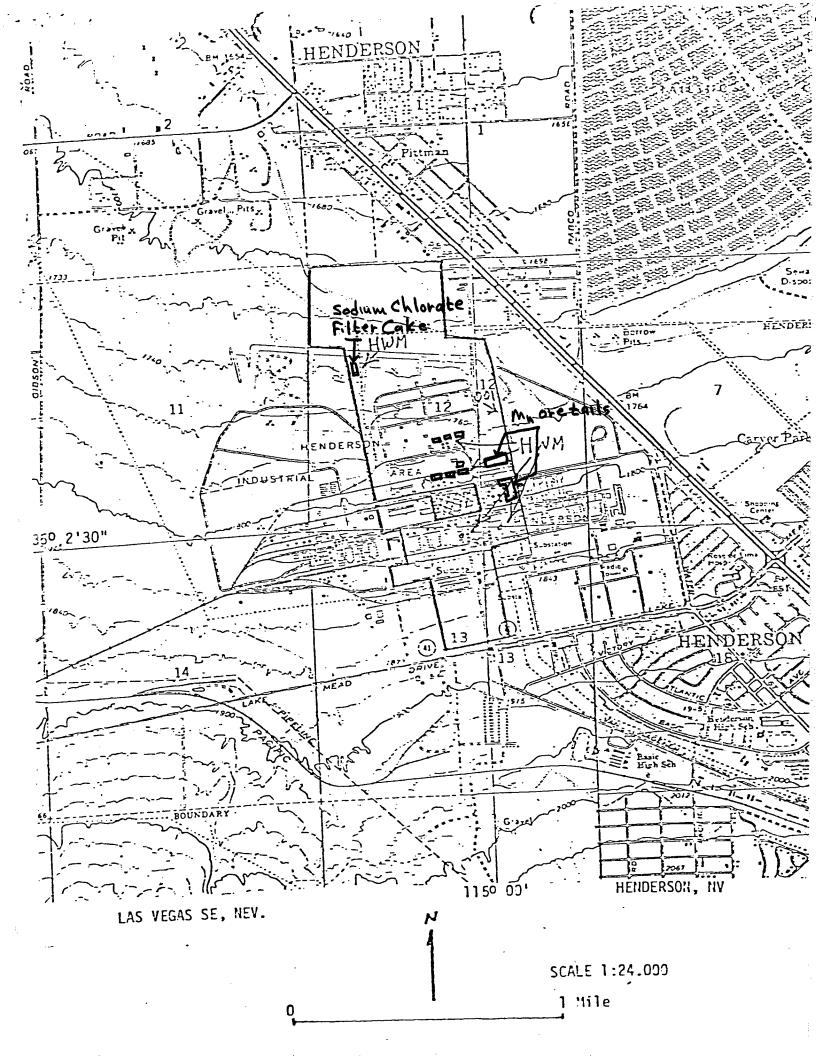
KERR-McGEE CHEMICAL CORPORATION GN Ham tem

C. B. Armstrong Plant Manager

CBA:mjd

Attachments

V. FACILITY DRAWING 15es page 41 Sodium Chlorate Filte Cake LANDFILL FENCE - exisTING FUTURE AREA! PONDS AP.3 2 1 Mnote PONDS tailings P-3 P-1 SCALE APPROX 1"= 500' TREATMENT EQUIF. Bldg No.I 2700 PAGE 5 OF 5



- (ii) Ignitable gases shall be determined by the methods described in 49 CFR 173.300.
- (b) Corrosive waste. (1) Definition—A solid waste is a hazardous waste if a representative sample of the waste:
- (i) Is aqueous and has a pH less than or equal to 3 or greater than or equal to 12 as determined by the method cited below or an equivalent method, or
- (ii) Corrodes stell (SAE 1020) at a rate greater than 0.250 inch per year at a test temperature of 130°F as determined by the method cited below or an equivalent method.
- (2) Identification method. (1) pH shall be determined using a pH meter, following the protocol specified in the "Manual of Methods for Chemical Analysis of Water and Wastes" (EPA-625-16-74 003).
- (ii) Rate of metal corrosion shall be determined using the protocol specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69.
- (c) Reactive waste. (1) Definition—A solid waste is a hazardous waste if a representative sample of the waste:
- (i) Is normally unstable and readily undergoes violent chemical change without detonating; reacts violently with water, forms potentially explosive mixtures with water, or generates toxic gases, vapors, or fumes when mixed with water; or is a cyanide or sulfide bearing waste which can generate toxic gases, vapors, or fumes when exposed to mild acidic or basic conditions.
- (ii) Is capable of detonation or explosive reaction but requires a strong initiating source or which must be heated under confinement before initiation can take place, or which reacts explosively with water.
- (iii) Is readily capable of detonation or of explosive decomposition or reaction at normal temperatures and pressures.
- (iv) Is a forbidden explosive as defined in 49 CFR 173.51, a Class A explosive as defined in 49 CFR 173.53, or a Class B explosive as defined in 49 CFR 173.58.

Note:—Such waste includes pyrophoric substances, explosives, autopolymerizable material and oxidizing agents. If it is not apparent whether a waste is a hazardous waste using this description, then the methods cited below or equivalent methods can be used to determine if the waste is hazardous waste.

(2) Identification method. (1) Thermally unstable waste can be identified using the Explosion Temperature Test cited in Appendix II of this Subpart (waste for which explosion, ignition, or decomposition occurs at 125°C after 5 minutes is classed as hazardous waste).

Jan Born

- (ii) Waste unstable to mechanical shock can be identified using the Bureau of Explosives impact apparatus and the tests cited in 49 CFR 173.53(b), (c), (d), or (f), as appropriate
- (d) Toxic waste. (1) Definition—A solid waste is a hazardous waste if, according to the methods specified in paragraph (2), the extract obtained from applying the Extraction Procedure (EP) cited below to a representative sample of the waste has concentrations of a contaminant that exceeds any of the following values:

•	Extract level,	
Contaminant:	milligrams	per liter
Arsenic		0.50
Barium		10.0
Cadmium		0.10
Chromium		0.50
Lead		0.50
Mercury		0.02
Selenium		0.10
Silver		0.50
Endrin (1,2,3,4,10,10-hexae		
epoxy-1,4,4a,5,6,7,8,8a-octa		
4-endo, endo-5, 8-di meth	ano naph-	
thalene) Lindane		0.002
Lindane	(1,2,3,4,5,6-	
hexachlorocyclo hexane		
isomer)		0.040
Methoxychlor (1.1,1-Trichi		
2,2-bis (p-methoxyphenyl)		1.0
Toxaphene (C ₁₀ H ₁₀ Cl ₃ -techn		
inated camphene, 67-69 pe		
rine)		0.050
2,4-D, (2,4-Dichlorophe		
acid)		1.0
2,4,5-TP Silvex		
Trichloro phenoxypropion	ic acid)	0.10
37 T		

NOTE:—Extract levels specified for the above substances equal ten times the EPA National Interim Primary Drinking Water Standards for these substances. These standards are being revised. Extract levels specified above will be changed to reflect revisions to these standards. Also, EPA is considering use of the Water Quality Criteria under the Clean Water Act as a basis for setting extract levels, in addition to the EPA National Interim Primary Drinking Water Standards.

(2) Identification method. (i) Extraction procedure. (A) Take a representative sample (minimum size 100 gms) of the waste to be tested and separate it into its component phases using either the filtration method or the centrifugation method described in this section. Reserve the liquid fraction under refrigeration at 1-5°C (34-41°F) for use as described in paragraph (F) of this section.

(1) Filtration Method.

Equipment: Millipore YY22 142 30 filter holder (Millipore Corp., Beford, MA 01730) equipped with an XX42 142 08 accessory 1.5 liter reservoir, or Nuclepore Corp., Pleasanton, CA 94566) equipped with a 1.5 liter reservoir, or equivalent filter holder.

Procedure: 1. Using the filter holder place a 0.45 micron filter membrane (Millipore type HAWP142, Nuclepore type 112007, or equivalent) on the support screen. On top of the membrane (upstream) place a prefilter (Millipore AP25124, Nuclepore P040, or equivalent). Secure filter holder as directed in manufacturer's instructions.

2. Fill the reservoir with the sample to be separated, pressurize to no more than 75 psi (7 kg/cm²), and filter until no significant amount of fluid (§5 ml) is released during a 30 minute period.

3. After liquid flow stops, depressurize and open the top of the reservoir, invert the filter unit, replace filter pads as in step 1. above, and resume filtering. Save pads for later use. Repeat this step until no more fluid can be removed from the waste at a pressure of 75 psi (7 kg/cm2).

4. Take the solid material, and any pads used in filtration, and extract as described in paragraph (B). Subtract tare weights of filter pads in calculating the amount of solid material.

(2) Centrifugation Method

Equipment: Centrifuge (e.g. Damon-IEC catalog no. 7165, Damon-IEC Corp., Needham Heights, MA, or equivalent) equipped with a rotor for 600 ml to 1 liter containers (Damon-IEC catalog no. 976, or equivalent). For flammable material containing wastes, explosion proof equipment is recommended.

GLASS CENTRIFUGE BOTTLES

Procedure: 1. Centrifuge sample for 30 minutes at 2300 rpm. Hold temperature at 20-40°C (68-104°F).

- 2. Using a ruler, measure the size of the liquid and solid layers, to the nearest mm (0.40 inch). Calculate the liquid to solid ratio.
- 3. Repeat 1 and 2 above until the liquid: solid ratio calculated after two consecutive 30 minute centrifugations is within 3%.
- 4. Decant or siphon off the layers and extract the solid as described in paragaph B.
- (B) Take the solid portion obtained in paragraph (i), and prepare it for extraction by either grinding it to pass through a 9.5 mm (%") standard sieve or by subjecting it to the following structural integrity procedure.

STRUCTURAL INTEGRITY PROCEDURE

Equipment: Compaction tester having a 1.25 inch diameter hammer weighing 0.73 lbs. and having a free fall of 6 inches (Figure 1) (one suitable device is the Associated Design and Manufacturing Company, Alexandria, Va. 22314, catalog no. 125).

Procedure: 1. Fill the sample holder with the material to be tested. If the waste sample is a monolithic block, then cut out a representive sample from the block having the dimensions of a 1.3° dia. \times 2.8° cylinder.

- 2. Place the sample holder into the Compaction Tester and apply 15 hammer blows to the sample.
- 3. Remove the now compacted sample from the sample holder and transfer it to the extraction apparatus for extraction.
- (C) Take the solid material from paragraph (B), weigh it and place it in an extractor. A suitable extractor will not only prevent stratification of sample and extraction fluid but also insure that all sample surfaces are continuously brought into contact with well mixed extraction fluid. (When operated at greater than or equal to 40 rpm, one suitable device is shown in figure 2 and available as Part No. 3736 produced by the Associated

Design and Mfg. Co., Alexandria, Va. 22314.)

(D) Add to the extractor a weight of deionized water equal to 16 times the weight of solid material added to the extractor. This includes any water used in transferring the solid material to the extractor.

(E) Begin agitation and adjust the pH of the solution to 5.0 ± 0.2 using 0.5N acetic acid. Hold the pH at 5.0 ± 0.2 and continue agitation for 24±0.5 hours. If more than 4 ml of acid for each gm of solid is required to hold the pH at 5, then once 4 ml of acid per gm has been added, complete the 24 hour extraction without adding any additional acid. Maintain the extractant at 20-40° C (68-104° F) during extraction. It is recommended that a device such as the Type 45-A pH Controller manufactured by Chemtrix, Inc., Hillsboro, OR 97123, or equivalent, be used for controlling pH. If such a device is not available then the following manual procedure can be employed.

MANUAL PH ADJUSTMENT

1. Calibrate pH meter in accordance with manufacturer's specifications.

2. Add 0.5N acetic acid and adjust pH of solution to 5.0 ± 0.2 . If more than 4 ml of acid for each gm of solid is required to hold the pH at 5, then once 4 ml of acid per gm has been added, complete the 24 hour extraction without adding any additional acid. Maintain the extractant at 20-40° C (68-104° F) during extraction.

3. Manually adjust pH of solution at 15. 30, and 60 minute intervals moving to the next longer interval if the pH did not have to be adjusted more than 0.5 pH units since the previous adjustment.

4. Continue adjustment procedure for a period of not less than 6 hours.

5. Final pH after a 24 hour period must be within the range 4.9-5.2; unless 4 ml of acid per gram of solid has already been added.

6. If the conditions of 5 are not met, continue pH adjustment at approximately one hour intervals for a period of not less than 4

(F) At the end of the 24 hour extraction period, separate the material in the extractor into solid and liquid phases as in paragraph (A). Adjust the volume of the resulting liquid phase with deionized water so that its volume is 20 times that occupied by a quantity of water at 4° C equal in weight to the initial quantity of solid material charged to the extractor (e.g., for an initial weight of 1 gm, dilute to 20 ml). Combine this solution with the original liquid phase from paragraph (A). This combined liquid, and any precipitate which may later form, is the Extraction Procedure Extract.

(ii) Analysis-Analyses conducted to determine conformance with Section 250.13(b)(1) shall be made in accordance with the following or equivalent methods:

Arsenic-Atomic Absorption Method, "Methods for Chemical Analysis of Water and Wastes," pp. 95-96, Environmental Protection Agency, Office of Technology Transfer, Washington, D.C. 20460, 1974,

Barium-Atomic (B) Absorption Method, "Standard Methods for the Examination of Water Wastewater," latest edition, or "Methods for Chemical Analysis of Water and Wastes," pp 97-98, Environmental Protection Agency, Office of Technology Transfer, Washington, D.C. 20460. 1974.

(C) Cadmium—Atomic Absorption Method, "Standard Methods for the Examination of Water Wastewater," latest edition, or "Methods for Chemical Analysis of Water and Wastes," pp. 101-103, Environmental Protection Agency, Office of Technology Transfer, Washington, D.C. 20460, 1974.

(D) Chromium-Atomic Absorption Method, "Standard Methods for the Examination of Water Wastewater," latest edition, or "Methods for Chemical Analysis of Water and Wastes," pp. 112-113, Environ-mental Protection Agency, Office of Technology Transfer, Washington, D.C. 20460, 1974.

(E) Lead-Atomic Absorption Method, "Standard Methods for the Examination of Water Wastewater," latest edition, or "Methods for Chemical Analysis of Water and Wastes," pp. 112-113, Environmental Protection Agency, Office of Technology Transfer, Washington, D.C. 20460, 1974.

(F) Mercury-Flameless Atomic Absorption Method, "Methods Chemical Analysis of Water and Wastes," pp. 118-126, Environmental Protection Agency, Office of Technology Transfer, Washington, D.C. 20460.

(G) Selenium-Atomic Absorption Method, "Methods for Chemical analysis of Water and Wastes," p. 145, Environmental Protection Agency, Office of Technology Transfer, Washington, D.C. 20460, 1974.

(H) Silver—Atomic Absorption Method, "Standard Method for the Examination of Water and Wastewater," latest edition, or "Methods for Chemical Analysis of Water and Wastes," p. 146, Environmental Protection Agency, Office of Technology Transfer, Washington, D.C. 20460, 1974.

(I) Endrin, Lindane, Methoxychlor, or Toxaphene—as described "Method for Organochlorine Pesticides. in Industrial Effluents." MDQARL, Environmental Protection Agency, Cincinnati, Ohio, November 28, 1973,

(J) 2, 4-d and 2, 4,5-TP Silver-as described in "Methods for Chlorinated Phenoxy Acid Herbicides in Industrial Effluents," MDQARL, Environmental

Protection Agency, Cincinnati, Ohio, November 28, 1973.

§ 250.14 Hazardous waste lists.

A solid waste is a hazardous waste if it is listed in paragraphs (a) or (b) below unless it can be demonstrated, pursuant to the procedures under § 250.15, that the Administrator's basis for listing the waste does not meet the criteria for listing under § 250.12(b). The Administrator's basis for listing a waste in paragraphs (a) and (b) is identified by parenthetical codes that follow each listed waste. These codes reference the following bases for list-

I-Meets the criterion of § 250.12(b)(1) because the waste meets the ignitable characteristic of § 250.13(a)

C-Meets the criterion of § 250.12(b)(1) because the waste meets the corrosive characteristic of § 250.13(b).

R-Meets the criterion of § 250.12(b)(1) because the waste meets the reactive characteristic of § 250.13(c).

T-Meets the criterion of § 250.12(b)(1) because the waste meets the toxic characteristic § 250.13(d).

N-Meets the criterion of § 250.12(b)(2) because the waste contains infectious agents. A-Meets the criterion of § 250.12(b)(2) because the waste contains redioactive substances.

M-Meets the criterion of § 250.12(b)(2) because the waste contains mutagenic, carcinogenic, or teratogenic substances.

B-Meets the criterion of § 250.12(b)(2) because the waste contains substances that bioaccumulate.

O-Meets the criterion of § 250.12(b)(2) because the waste contains toxic organic substances.

Note.-The process waste streams are listed by Standard Industrial Classification (SIC) codes for ease of reference only. The SIC classification of the industry generating the waste has no effect on the listing of that process waste as hazardous.

(a) Hazardous waste.

Waste chlorinated hydrocarbons from degreasing operations (I,T,O)

Waste non-halogenated solvent (such as methanol, acetone, isopropyl alcohol, polyvinyl alcohol, stoddard solvent and methyl ethyl ketone) and solvent sludges from cleaning, compounding milling and other processes (I,O)

Waste lubricating oil (T,O)

Waste Hydraulic or cutting oil (T,O) Paint wastes (such as used rags, slops, latex

sludge, spent solvent) (T,I,O) Water-based paint wastes (T)

Tank bottoms, leaded (T)

Spent or waste cyanide solutions or sludges (R,T)Etching acid solution or sludges (T,C)

Waste paint and varnish remover or stripper (I,O)

Solvents and solvent recovery still bottoms (non-halogenated (I,O)

Solvents and solvent recovery still bottoms (halogenated) (O)

Waste or waste off-spec toluene diisocyanate (I,R,O)

Leachate from hazardous waste landfills (T,O,M,B,)

DRAFT

MEMORANDUM

KERR-MGEE

TO:

Lew Dodgion

FROM:

Waste Management Staff

SUBJECT:

Summary of BMI Complex Responses to Order Issued

February 25, 1982

The Waste Management Staff has completed an initial review of responses given by BMI and the corporations located within the Complex to the Order issued by the Division on February 25, 1982.

The following tables are a summary of how each corporation and BMI answered the specific items of the Order. Stauffer Chemical Company had to, also, respond to a separate Order concerning their activities.

A. Stauffer Chemical Company Response to Separate Order

Item 1. By April 1, 1982, any organic data on vertical and horizontal (areal) soils contamination that may have been developed shall be submitted. If no soils contamination data is available, a plan of action to develop vertical and horizontal (areal) soil contamination data on Stauffer, Kerr-McGee, and BMI property shall be submitted with scheduling.

Response Summary: Three pilot test holes were sampled for vertical soil migration into Muddy Creek formation in March 1980. The wells were located along the north border of the BMI dump.

Well #	Location	Contamination (ug/g)	Depth
22	Next to 21	10 Benzene	51 ft.
		10 Chloro Benzene	51 ft.
		<pre>2.3 Dimethylphosphor- odithiotic acid</pre>	45 ft.
27	Next to 28	less than detection level	
44	Next to 18	less than detection level	

DRAFT - MEMORANDUM Lew Dodgion April , 1982 Page -2-

Item 2. By April 1, 1982, as built drawing of the closures and permeability data on the geological material used to close the sites with an evaluation of the effectiveness of the closure shall be submitted. The Lindane disposal site, Trithion leach beds, and drum storage area were closed prior to Nevember 19, 1981.

Response Summary: Stauffer has met this requirement by submitting the drawings and a clay analysis showing coefficient of permeability, liquid limit, plasticity index, and plastic limit. They state that the cover should be particularly effective in an arid area such as Henderson. We agree with their evaluation, however, there is no liner below the site to prevent further migration of material from the site due to corrosion from the drums.

All of the monitoring wells in this area are inactive due to the closure of the sites.

Item 3. By April 1, 1982, a complete description of the analytical procedures used to determine total organic carbon (TOC) as well as the methods used to take and preserve TOC samples and other organic samples shall be submitted.

Response Summary: Stauffer has met this requirement by stating that procedures used are as described in EPA publication <u>Procedures Manual</u> for Ground Water Monitoring at Solid Waste Disposal Facilities, SW-611, December 1980. They go on to describe the process used.

- Item 4. By April 1, 1982, supplement the Henderson Ground Water Investigation Project document dated January 15, 1982, with the following:
 - a. Geological data (well logs) on each new H and PG well established or modified.

DRAFT - MEMORANDUM Lew Dodgion April _, 1982 Page -3-

Response: Information submitted as requested.

b. Complete the geological mapping cross sections A-A' and B-B' and contour mapping of top of Muddy Creek formation, Fig. 2, which were contained in the Geraghty & Miller (G/M) report of October 1980.

Response: Stauffer did not complete Fig. 2 as requested, instead they completed Fig. 3 ground water contours. Cross sections were submitted as requested, however, due to lack of information, Muddy Creek formation levels were unknown in several places.

organic layer in H-8, 9, LG-033, H-18, 19, 21, 23, 42, and 43, as required. Describe the method used to determine presence/thickness of organics.

Response: Stauffer contends that an organic layer exists in Wells H-8, H-9, and LG-033 only. Methods used to determine organic layer involves coating a tape on one side with chalk and the other side with McCabe Water Level Indicator. Organic layer information was submitted as requested.

d. Stauffer shall identify, in detail, the chemical process which resulted in the production of phthalic acid and the other organics found in wells H-10, 17, 21, 36, 43, and 50, the methods of disposal, location of disposal sites, and dates of usage.

Response: Not available at this date. They expect to respond by May 1, 1982.

e. Provide analytical data on the phthalate compounds identified in the Pilot Studies. DRAFT - MEMORANDUM Lew Dodgion April __, 1982 Page -4-

Response: Stauffer reports that the phthalate is reported as phthalic acid in the analytical reports submitted to the Division on January 15, 1982.

Item 5. By April 1, 1982, the design of each trench and any other ditch used but not identified in the photos, dates of their use, quanity and quality of the process waste discharged to each trench shall be provided.

Response Summary: Stauffer, like TIMET, confused the term "trench" with the term "ditch" and submitted information on the ditches calling it trench information. The storm water ditch was used to transport waste to the lower BMI ponds from 1946 to 1970. From 1970 to 1976, waste was transported via the siphon to the upper BMI ponds. These wastes were from both the ICD and from Montrose Chemical. Stauffer states that: "Although we disagree on some items in the list of disposals which was attached to the February 25 Order, the quantities listed are generally our best estimate of quantities involved."

Item 6. By April 1, 1982, identify any process waste discharged which contained arsenic, thallium, nickel, lead, antimony, cyanide, and zinc, identify the quantity and quality of the waste discharged and location of the disposal site.

Response Summary: Stauffer responded that no process waste water contained any of the above named chemicals.

Item 7. By April 15, 1982, a plan of action with scheduling to identify water sources which are entering the shallow aquifer, and impacting the contaminated area, and to determine the quantity of water entering the aquifer shall be provided.

Response Summary: This will be submitted by May 1, 1982.

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Item 8. By April 1, 1982, arrangements shall be made with Kerr-McGee and TIMET, Inc., to gain access to their ground water wells for the purpose of static water level determinations and sampling and analysis for the organics identified in Item 9.a. Sampling and analysis shall begin immediately and the results submitted monthly.

Response Summary: Stauffer states that Kerr-McGee is willing to allow sampling and one time analysis of their wells for organics, and that water levels will be taken at both TIMET and Kerr-McGee. Stauffer has submitted an alternative sampling program.

Item 9. Montioring of wells identified in this Order shall begin immediately for the chemical constituents identified in Item 9.a., and all monitoring results reported to the DEP in accordance with the following schedule:

9.a. Wells H-10, H-17, H-25, H-36, H-48, H-49, H-50, and H-51 shall be monitored and analyzed monthly for TOC, benzene, carbophenathion, phosmet, dimethydisulfide, chlorobenzene, 1-2, 1-3, and 1-4 dichlorobenzene, phthalic acid, DM thioic acid, DE thioic acid, chloroform, methanol, trichlorobenzene, TDS, pH, chloride, sulfate, nickel, lead, antimony, copper, arsenic, cyanide, zinc, and thallium. Static water levels shall be determined prior to each sampling.

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- 9.b. Wells H-18, H-21, LG-033, H-40, H-41, H-38, H-23, H-28, PG 104, 103, 108, 101, 107, and 102 shall be monitored and analyzed quarterly for the chemical constituents identified in Item 9.a., and the static water level determined prior to each sampling.
- 9.c. Static water levels in all remaining H & PG series wells shall be determined quarterly.

Response Summary: See Item 10.

Item 10. By April 15, 1982, the Down-Gradient Ground Water Investigation program as identified in the January 15, 1982, Henderson Ground Water Investigation Project shall be modified to include scheduling and bracketing of the east-west and northern more boundary of the TDS-organic plume and shall be submitted.

These wells shall be monitored monthly for static water level and chemical constituents identified in Item 9.a. of this Order. This program shall be completed by September 1, 1982. The program shall be approved by this office prior to implementation.

Response Summary: Items 9 and 10. Stauffer Chemical Company has proposed an alternative program to that specified in Items 9 and 10. Stauffer states that the complete Items 9 and 10 would involve in excess of 10,000 tests in 1982 compared to the 400 tests in 1981. The Stauffer proposal consists of the following:

- Monitoring wells indicative of the plume center every other month;
- 2. Monitor the east-west boundaries of the plume semiannually;
- 3. Monitor LG-033 and H-21 semiannually for carbophenithion and phosmet;

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- 4. Static water level before each monitoring and all wells semiannually;
- 5. Supply all RCRA data to the Division;
- 6. Determine levels of chloride, sulfate, nickel, lead, antimony, copper, arsenic, zinc, and thallium in wells specified in #1. above;
- 7. Sample one time TIMET and Kerr-McGee wells for organics;
- 8. Add new wells for #1. above; and
- 9. Reports will be submitted 2 months after completion.
- Item 11. The following monitoring sites shall be included in the monthly monitoring program for the identified chemical constituents in Item 9.a.: PG 110, PG 111, PG 112, the Pittman leach drain, and the newly established Bureau of Reclamation ground water intercept ditch identified as LW 103 in the Pittman verification program. Flow of the Pittman Leach Lateral and intercept ditch (LW 103) shall be determined with each sampling.

Response Summary: Stauffer contends that organics in these areas did not originate from Stauffer and are not included in their monitoring program.

Item 12. By April 15, 1982, a detailed plan of action shall be provided with scheduling to intercept and treat the dissolved organic plume leaving the northern BMI/Kerr-McGee property line.

The plan of action shall include at a minimum a preliminary and final engineering report which identifies the chosen intercept and treatment methods, preliminary and final plans and specifications and construction schedule in order to prevent any additional downgradient pollution and hazard.

DRAFT - MEMORANDUM Lew Dodgion April __, 1982 Page -8-

Off-site cleanup will be determined as additional data is made available.

Response Summary: This plan shall be submitted by May 1, 1982.

Item 13. By April 1, 1982, information which identifies and describes the route the DDT metabolite wastes followed to the BMI ponds (or disposal trenches) and a monitoring program with scheduling to identify concentrations in the soils of the BMI ponds (or disposal trenches).

Response Summary: This waste followed the same routes as described in Item 5. The area should be defined by August 1, 1982.

Item 14. By April 15, 1982, a plan of action with scheduling which will identify the boundaries of the organic phase on Stauffer and BMI property shall be provided.

Response Summary: The boundaries are already defined.

Item 15. By April 15, 1982, identify the type of electrolytic cells used by Stauffer for the production of chlorine and caustic soda since production began.

Response Summary: From 1946 to 1976, the Hooker S cell was used.

1976 to present, the Diamond Shamrock MDC-29 cells have been used.

B. Other BMI Response Summaries

BMI Complex

Item 1. By April 1, 1982, a copy of the <u>original design</u> and <u>as built</u>

<u>drawings</u> of the presently identified <u>BMI Dump</u> and <u>French Drain</u>.

<u>Response Summary</u>: R-508 Blueprint showing French Drain, cross section of Intermediate Diked North Dike, and Caustic Evaporation Ponds.

Blueprint N-35 submitted shows cross section of North dike of effluent pond; cross section of Caustic Evaporation Ponds; and cross section of

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diversion ditch and dike.

BMI dumping area drawing (solid waste), trenches, and Stauffer Evaporation Ponds submitted.

Item 2. By April 1, 1982, as built drawings of the BMI <u>dump closure</u>, permeability <u>data</u> on geological material used to close the site, and <u>analysis of effectiveness</u> of <u>closure</u>.

Response Summary: As duilt drawings of closure were not provided [a grading plan was substituted for this requirement]. Closure data and cover of 2'-15' waste lime. Lime covered by a minimum of 2' of soil from surrounding area.

Permeability data report done by <u>Geotechnical Engineers &</u>

<u>Geologists</u> (1979) was provided. Effectiveness — the opinion of the GEG report is provided.

Item 3.a. By April 1, 1982, design data on each trench, dates of use and process waste and quantity and quality discharged to each trench.

Response: BMI did not design trenches and no design data is available. (Approximately 20'-24' deep). Dates of use are not recorded. Amounts and quality of waste per trench are unknown and not recorded by BMI.

b. By April 1, 1982, information on process waste and quantity and quality discharged via the identified ditch and dates of use...

Response: BMI has no records on identified ditch.

c. By April 1, 1982, specific areas of the closed BMI Dump used by each industry, waste type, quantity and quality disposed of in each location.

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Response: General areas and waste types were identified.

Quantity and quality unknown to BMI.

d. By April 1, 1982, specific discharge route, BMI ponds used by each industry, process waste, quantity and quality discharged via the route, dates of use.

Response: No route specified, ponds used by each industry were not specified. Process waste, quantity and quality were not recorded by BMI. Dates of use were 1952-1976.

Flintkote Lime

Item 3.a. By April 1, 1982, <u>design data on each trench</u>, <u>dates of their</u>

<u>use</u>, and <u>process waste quantity and quality</u> discharged to each trench shall be provided.

Response: No design data or data on trench use was provided. Quality data on lime products appears alright.

Recommendation: Provide data on trench design. Also, identify all trenches (not dump) used, amounts and quality of waste in each trench.

b. By April 1, 1982, information on the <u>process waste</u> and <u>quantity</u> and <u>quality</u> discharged via <u>identified</u> <u>ditch</u> and <u>dates of its</u> <u>use</u> shall be provided.

Response: Flintkote did not even address this subject.

Recommendation: Answer the question. Provide data about use of the identified ditch, and whether Flintkote has used the ditch.

used and the <u>waste</u> and <u>quantity</u> and <u>quality</u> disposed of in each location.

Response: The supposed attached diagram of areas used was not attached. An estimated amount of lime waste was provided as actual

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amounts were not recorded. Quality data appears alright.

Recommendation: Provide more detail (i.e., map or diagram) of specific area used and approximate amounts per area.

d. By April 1, 1982, the specific discharge route and BMI ponds used, process waste and quantity and quality discharged via the route, and dates of use...

Response: Flintkote did not answer this question. It may be that they did not use the ponds.

Recommendation: Answer the question. Provied data about use of the ponds, if applicable.

State Industries (Began operations in the Fall of 1969.)

Item 3.a. By April 1, 1982, design data on <u>each trench</u>, <u>dates of their</u>
use, and the process waste quantity and quality discharged to
each trench.

Response: State Industries did not indicate whether they use the dump.

Recommendation: Answer the question. Provide information on use of the dump, if applicable.

b. April 1, 1982, information on the process waste, quantity and quality discharged via the identified ditch and dates us use...

Response: State Industries did not state whether they used the ditch, nor did they provide any of the data requested in this Item.

Recommendation: Answer the question. Provide data on the use of the ditch, if applicable.

c. By April 1, 1982, specific areas of the closed BMI Dump used, and the waste quantity and quality disposed of in each location.

Response: State Industries did not state whether they used the dump, etc.

DRAFT - MEMORANDUM Lew Dodgion April , 1982 Page -12-

Recommendation: Answer the question. Provide the information requested regarding the use of the dump.

d. By April 1, 1982, specific <u>discharge route</u>, <u>BMI Ponds used</u>, <u>process waste</u>, <u>quantity and quality discharge via each route</u>, dates of use...

Response: 1970-1972, batch of waste per month via BMI acid drain to Beta ditch. No specific ponds identified. Process waste — 35,000 gallons of 2500 cfo Sulfuric Acid, 300 pounds of Borox, 500 pounds of Soda Ash, and 4,000 pounds of phosphate chemicals (not specified).

1970-1971, Approximately 176 pounds of cyanide (11 pounds per 3,000 gallons of water).

1972-1982, lined ponds for all wastes.

Recommendation: Specify organic or inorganic phosphate waste, and specific phosphate waste. Specify which ponds were used, if possible. And, specify method of disposal of cyanide waste.

Jones Chemical

Item 1. By April 1, 1982, a copy of the original <u>design</u> and <u>as built</u> drawings of the presently identified BMI Dump and French Drain.

Response Summary: No drawings or original designs were provided.

Item 2. By April 1, 1982, as built drawings of the BMI Dump closure, permeability data, and analysis of closure of dump.

Response Summary: No response to this question.

Item 3.a. By April 1, 1982, design data on each trench, dates of use...

Response: Jones Chemical did not place hazardous waste into the trenches.

- b. Response: Did not use the identified ditch.
- c. <u>Response</u>: Placed only nonhazardous waste into the dump. No area specified, no dates specified.

d. Response: Jones Chemical did not answer this question.

Liquid waste is put into evaporation tank on Jones Chemical property.

Kerr-McGee

Item 3.a. Response: Kerr-McGee does not possess design data and dates
of use. BMI has this information and will be sending it.

Occasional use of trenches on BMI property to dispose of household wastes*. In February 1980, when BMI Dump was closed, Kerr-McGee constructed a trench on Kerr-McGee property:

400' x 32' x 20' deep

Sodium chloride filter cake (diatemaceous earth, carbon, calcium sulfate, calcium carbonate, and soluble [NaCl, NaClO $_3$, NaClO $_4$, KCl] salts).

* Household wastes (e.g., paper, cartons, bags, drums, plastics) were burned in BMI Dump prior to 1970. From 1970-1980, they were buried in BMI Dump.

Note: There is confusion between BMI Dump and trenches. Apparently, Kerr-McGee only made use of one trench (on their own property) for disposal of sodium chloride filter cake. No quantity was given.

- b. Response: From time to time, discharges containing salts and filte cake sluicings were routed to the BMI lower ponds via the "identified" ditch. These were believed to be small and infrequent.

 Note: No quantities were given for the discharges through the identified ditch. No specific dates were provided.
- c. Response: The area of BMI Dump utilized by Kerr-McGee is identified on a map being submitted by BMI. From 1975-1980, chlorate filter cake and small quantities of carbon powder were deposited.

 Note: No quantity or quality given.

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d. Response: Liquid process wastes and sluiced filter cake via siphon route to upper BMI ponds:

From 1945-1975, refer to sluicing water which either "evaporated or percolated into the soil leaving the solids behind". Could contain $MgSO_4$, $MuSO_4$, and $CaSO_4$.

<u>Note</u>: Where are these areas? In their conclusion, they state that since the insoluble residues from Manganese ores are nonhazardous (EP toxicity). They are, therefore, not a source of ground water contamination. This is totally incorrect. This Order has nothing to do with the EPA Hazardous Waste Program.

TIMET

Item 3.a. By April 1, 1982, design data on each trench, dates of their use and the process waste, and quantity and quality discharged to each trench shall be provided.

Response: No data provided. Response confuses the terms "trench" and "ditch".

b. By April 1, 1982, the information on the process waste and quantity and quality discharged via the identified <u>ditch</u>, and the dates of its use shall be provided.

Response: Data supplied was not intelligible. TIMET should provide us with a summary.

c. By April 1, 1982, the specific areas of the closed BMI <u>Dump</u> used by each industry and the waste and quantity and quality disposed of in each location shall be identified.

Response: Areas used to be supplied by BMI. (TIMET should have their own data on this.) Quantity indicated lugger box waste and flat rack waste equals 10,294 tons/year for 1978.

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> d. By April 1, 1982, the specific discharge route and BMI ponds used by each industry, process waste, and quantity and quality discharged via the route, and dates of use shall be identified.

Response: The dates given were 1951-1977. No specific information on which ponds were used an any given time. All ponding was in the South center portion of the upper BMI pond, except for caustic ponding between 1965-1977 for which they used a pond north of the J-5 building.

Note: TIMET did not give any data on process, quantity or quality.

Where did caustic go between 1965-1977? After 1977? Which route(s)?

March 31, 1982

CERTIFIED MAIL NO. P26 0233539

RECEIVED

APR 1 - 1982

Mr. L. H. Dodgion, Administrator Division of Environmental Protection Capitol Complex Carson City, NV 89710

ENVIRONMENTAL PROTECTION

Dear Mr. Dodgion:

Your Order of February 25, 1982, as clarified and modified by Messrs. Tebeau and Rosse March 11, 1982, at a meeting in the Basic Management, Inc., conference room with representatives of companies operating facilities within the BMI Complex, requires coordinated responses from the various entities addressed by the Order inasmuch as the total information requested is not in the possession of each of the entities. Accordingly, Kerr-McGee Chemical Corporation has, as requested, assembled and transmits herewith the pertinent information of which it has knowledge and possession, and comments as follows with respect to the Order as clarified and modified:

Item 1.

Basic Management, Inc. (BMI) is in possession of an original drawing (print) which shows the design of the french drains which are located at the northern toe of the "Trade Effluent" impoundments dike. A copy of the drawing and pertinent comments are being forwarded as part of BMI's response.

Item 2

Closure of the BMI dump was effected in February, 1980 by Basic Management, Inc., at the request of the four owner companies. The requested information is included in BMI's response.

<u>Item 3(a)</u>

Kerr-McGee Chemical Corporation is not in possession of design data and dates of use of the various trenches within the BMI disposal area. Basic Management, Inc., does have information

Mr. L. H. Dodgion Page 2 March 31, 1982

relating to this matter which is being included in its response. Information on the one solid waste disposal trench located on KMCC property and solid waste disposal practices carried out in the areas of KMCC property is included in our response. Additionally, we include information concerning KMCC's waste disposal in the BMI trenches.

Item 3(b)

Comments about KMCC's (and predecessor companies') usage of the identified ditch is included in our response.

Item 3(c)

The general area of the closed BMI dump set aside for KMCC's use is identified on a drawing being submitted as part of Basic Management, Inc.'s response. Our best information on quantity and quality of wastes disposed of in that area is included in our response.

Item 3(d)

Detailed information concerning the BMI ponds which received KMCC effluents is not known to us inasmuch as pond usage was managed by Basic Management, Inc. However, we include information concerning quality, quantity, and discharge routes in our response.

In accordance with the clarification and modification of your Order by Messrs. Tebeau and Rosse on March 11, 1982, we were not at this time to develop the information described in Items 4 and 5 of the written Order . Instead, we were instructed to await your study and evaluation of the data and information submitted herewith, along with the submissions of the other responding companies, and the determination by you as to what further action, if any, is required, specifically as it relates to Kerr McGee Chemical Corporation.

Within 30 days of receipt of written notification by you of the action requested as it specifically relates to Kerr-McGee Chemical Corporation, we shall submit our required response.

Very truly yours,

KERR-McGEE CHEMICAL CORPORATION

C. B. Armstrong Plant Manager

CBA:jc Attachments Response to Department of Environmental Protection Order of February 28, 1982

(as Modified March 11, 1982 by Messrs. Tebeau and Rosse)

KERR-McGEE CHEMICAL CORPORATION

General Comments

The chemical manufacturing facilities presently owned and operated by Kerr-McGee Chemical Corporation (KMCC) and formerly by its predecessor companies, American Potash & Chemical Corporation and Western Electrochemical Company, produce several inorganic chemical products from natural ores and other inorganic chemical raw materials. These products and their respective raw materials are identified in the attached documents, particularly the May 2, 1980 letter to Mr. Eller, Region IX, EPA. Only small and incidental quantities of organic chemicals, such as paints, cleaning solvents, lubricants, petroleum fuels, flocculating agents, and resins, have been utilized in these operations. There have been no known spills, leakages or releases of significant amounts of any organic substances during the life of the Kerr-McGee and predecessor operations. Accordingly, there has been no reason or opportunity for surface or groundwaters to be adversely impacted by organic chemicals from Kerr-McGee chemical Corporation facilities.

The manufacture of chlorate and perchlorate products has generated aqueous waste streams containing soluble salts, such as sodium chlorate, sodium chloride, potassium chloride, and ammonium perchlorate, along with less soluble salts, such as calcium carbonate and calcium sulfate and insoluble materials, such as carbon and diatomaceous earth filter aid.

From the inception of these operations in 1945 until 1975, waste streams containing salts and filter cake sluicings were discharged via open surface ditches from the plant to the BMI pond system. Until 1975, the main route for this discharge was the east/west drainage ditch located just north of our ammonium perchlorate facility (June, 1971 application for discharge permit to Corps of Engineers), thence to the underground "siphon," and then to the upper BMI ponds located east of the Boulder Highway. We understand that from time to time those discharges were routed to the BMI lower ponds via the surface ditch mentioned in paragraph 3(b) of the Order. It is believed, however, that such discharges from the KMCC plant were small and infrequent. main drainage ditch (through the siphon) also carried aqueous waste streams from neighborking BMI plants, storm drains, cleanup and housekeeping washings, boiler blowdown, cooling tower blowdown, once-through cooling water, etc. All these streams were commingled by the time they reached the siphon.

insig.?

Response to DEP Order Page 2 March 31, 1982

By 1975, in accordance with the NPDES Permit, and the EPA-KMCC agreement letter dated July 21, 1972, these surface discharges had been completely eliminated. All waste process liquors were thereafter contained in impervious lined ponds on Kerr-McGee property. Subsequently, only once-through, noncontact cooling water was discharged to the ditch under conditions of the NPDES Permit.

For many years prior to 1975, insoluble residues from the processing of manganese ores were sluiced to surface impoundment areas on the plantsite. The sluicing water either evaporated or percolated into the soil leaving the solids behind. This water could have contained some manganese sulfate and magnesium sulfate with minor quantities of calcium sulfate and other relatively insoluble materials.

WHERE?

In February, 1975 as required by the July 21, 1972 KMCC-EPA agreement, the major sodium chlorate and manganese dioxide filtering operations were converted to semi-dry, solid-cake discharges. The ore tailings residues from the manganese dioxide process continued to be accumulated on KMCC property. These were determined to be nonhazardous, according to RCRA EP tests and criteria (Item 5, attached) and therefore do not create a source of groundwater contamination. Filter cake from the sodium chlorate operations, averaging 1-1/2 to 2 tons per operating day, has been placed in the BMI dump or in the KMCC disposal trench since February, 1975. This waste contains minor (~5%) quantities of soluble chloride and chlorate salts, and approximately 0.05% chromium. Closure and stabilization of the BMI dump area in 1980 assures against leaching and underground percolation of these materials by rainfall. The existing disposal trench on KMCC property is currently being used instead of the BMI dump for this purpose and was reported in RCRA Permit A application form.

Q1.

Prior to 1970, housekeeping wastes, such as paper, cartons, bags, drums, and plastics, were periodically burned at their disposal site in the BMI dump. Thereafter they were buried by landfill procedures in the BMI dump until it was closed. Since 1980, these wastes have been hauled by commercial waste handlers to a county landfill.

Item 3(a) of Order - Trenches

Occasionally, KMCC utilized trenches on BMI property to dispose of housekeeping wastes as described above, particularly to prevent dispersal by the wind. In February, 1980 when the

Response to DEP Order Page 3 March 31, 1982

BMI dump was closed, KMCC constructed a similar trench on KM property for the disposal of sodium chlorate filter cake. This trench, identified and located on the Notification of Hazardous Waste Activity (RCRA) form is approximately 400 feet long, 32 feet wide, and a maximum of 20 feet deep. filter cake is predominantly diatomaceous earth with small amounts of carbon, calcium sulfate, calcium carbonate, and soluble salts previously described.

Item 3(b) of Order - Liquid Wastes

By letter dated May 2, 1980 to Mr. Eller, Region IX, EPA, KMCC provided detailed information on liquid wastes which originated since 1945. As previously described, those wastes were disposed of in the BMI pond area. Since 1971, none has gone directly to the lower ponds by way of the identified ditch. The data submitted to the Corps of Engineers (Item 1) also describe the quality and quantity of this effluent as of 1970-71.

<u>Item 3(c)</u> of Order - Waste to BMI Dumps

The area of the BMI dump utilized by KMCC is identified on a drawing submitted by Basic Management, Inc., as part of its response. Chlorate filter cake and small quantities of carbon powder from our boron products operations were deposited in that area from 1975 to February, 1980. No other process wastes were sent to that location. KMCC utilized the BMI dump primarily to dispose of housekeeping wastes, such as papers, containers, pallets, etc. Since February, 1980, these wastes have been hauled to a Clark County sanitary landfill by Silver State Disposal Service, Inc. Approximately 15 yards per day of loose trash is handled in this manner.

Item 3(d) of Order - BMI Pond Usage

composition? Until 1975, KMCC discharged liquid process wastes and sluiced filter cake via the siphon route to the BMI upper ponds in the amounts and qualities previously described. These waste streams became commingled in the ditch with streams from other companies within the BMI Complex. We have no knowledge or records concerning the exact locations and time periods of final disposal. Basic Management, Inc., in its response will provide available information on pond usage. We believe that very little KMCC waste went to the lower BMI ponds.

EDWARDING ON ?

Response to DEP Order Page 4 March 31, 1982

Conclusions

To the best of our knowledge, the KMCC manufacturing facility has never discharged, leaked, or otherwise released any significant quantities of organic chemicals which could have entered underground waters. Until 1975, aqueous waste streams containing soluble inorganic salts, such as chlorides, chlorates, perchlorates, and sulfates, were discharged via surface ditches and ponds. Since 1975, following completion of KMCC's total containment "zero discharge" waste management system, these soluble salts have been contained in impervious lined impoundments for concentration by solar evaporation and recycle to the plant processes. Only once-through cooling water has been discharged to the ditch under the conditions of our NPDES Permit.

Chromium is the only RCRA hazardous waste constituent that was routinely discharged prior to 1975. The various attached documents, particularly the information supplied with our NPDES Permit application, identify chromium as a low level constituent in the waste water. We have attached the analysis of waters from Lake Mead and Las Vegas Wash that show no significant presence of chromium. Since discharges containing chromium ceased in 1975, any remaining effect of chromium should be indiscernible in those waters.

The insoluble residues from manganese ores used to produce manganese dioxide are nonhazardous as determined by RCRA EP toxicity tests (see data in Item 5). Therefore, these wastes are not a source of groundwater contamination by the Kerr-McGee facility.

Prepared by:

C. B. Armstrong, Plant Manager KERR-McGEE CHEMICAL CORPORATION

ATTACHMENTS

- Discharge Permit Application, Corps of Engineers, NV075-0YQ-2-000254 - Original Application June 11, 1971.
 - a. Supplemental Application, October 5, 1971
 - b. Supplemental Application, March 6, 1972

- c. Supplemental Application, March 9, 1972
- 2. Letter, R. L. O'Connell, EPA Region IX, to J. J. Kelley, KMCC, July 21, 1972.
- 3. Permit to Discharge No. NV0000078, August 26, 1973.
- 4. NPDES Application (Renewal), August 2, 1974.
- 5. IOC, R. E. Harris/A. L. Andersen, Analysis of Eimco (MnO₂) Tails, May 17, 1979.
- 6. a. Correspondence, Re: Pond Utilization, Nevada DEP (Marvin Tebeau) and KMCC (C. B. Armstrong), March 23, 1979.
 - b. Corresponsence, Re: Pond Utilization, KMCC (C. B. Armstrong) and Nevada DEP (Marvin Tebeau), March 22, 1979.
- 7. Eckhardt Committee Questionnaire, June 6, 1979.
- 8. Notification of Hazardous Waste Activity (RCRA) August 12, 1980.
- 9. Application for a Hazardous Waste Permit, Forms 1 and 3, November 14, 1980.
- 10. a. Correspondence Re: Waste Disposal Practices, EPA, Region IX (Clyde Eller) and KMCC (C. B. Armstrong), March 25, 1980.
 - Corresponsence Re: Waste Disposal Practices, KMCC (C. B. Armstrong) and EPA, Region IX (Clyde Eller), May 2, 1980
 - c. Corresponsence, Re: Waste Disposal Practices, EPA, Region IX (Clyde Eller) and KMCC (C. B. Armstrong), June 17, 1980.
 - d. Corresponsence, Re: Waste Disposal Practices, KMCC (C. B. Armstrong) and EPA, Region TX (Clyde Eller), July 18, 1980

Attachments Page 2 March 31, 1980

- 11. a. Lake Mead and Las Vegas Wash Water Analysis, Southern Nevada System, 1972-1974.
 - b. Lake Mead and Las Vegas Wash Water Analysis, Southern Nevada System, Sample No. 20-9, March 9, 1981.
 - c. Lake Mead and Las Vegas Wash Water Analysis, Southern Nevada System, Sample No. 19-34, March 9, 1981.
 - d. Lake Mead and Las Vegas Wash Water Analysis, Southern Nevada System, May 11, 1981

148 Jil (570)

FORM APPROVED OMB NO. 49-R C4G8

DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS

APPLICATION FOR PERMIT TO DISCHARGE OR WORK IN NAVIGABLE WATERS AND THEIR TRIBUTARIES

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CECTION I CENERAL INFORMATION		1. State	Application	n Number (to	be assigned	by Corps of Engineers)				
SECTION I, GENERAL INFORMATION		$ \underline{N} A $	Div.	Dist.	Туре	Sequence No.				
2. Name of applicant and title of signing official	Kerr-McGe	e Chem	ical Co	orp.						
Subsid. of Kerr-McGee Corp.	George H.	Cobb,	Execut	tive Vice	-Presid	ent				
2. Name of applicant and title of signing official 2. Name of applicant and title of signing official 3. Mosting address of applicant 133 Robert S. Kerr Oklahoma City, Oklahoma 73102 4. Name, address, talephone number and title of applicant's authorized agent for perm. application occordination and correspondence. T. I. Hurst Director of Environmental Studies Kerr-McGee Corporation 135 Robert S. Kerr Oklahoma 73102 4. Name, address, talephone number and title of applicant's authorized agent for perm. application occordination and correspondence. T. I. Hurst Director of Environmental Studies Kerr-McGee Corporation 135 Robert S. Kerr Oklahoma City, Oklahoma 73102 (405) 235-1315, 12t. 6105 NOTE TO APPLICANT: Refer to the pamphlet entitled "Permis for Work and Structures in and for Discharges or Deposits into Navigable Waters" before attempting to complete the form. Required Information 3. All information contilances "must be used as set out information which is contilered by the applicant to constitute rates scorets or commercial or financial information of a confidential nature. The information must clearly indicate the item number to which it applies. Confidential information of a confidential nature. The information must clearly indicate the item number to which it applies. Confidential shall term have the premation of the contents and frequency of a discharge be recognized as confidential or privileged that the item number to which it is applies. Confidential information of a confidential nature. The information of the contents and frequency of a discharge to except the content of the contents and frequency of a discharge to except the made on the statuched which applies the promote on the statuched which is applies to promote the promote of the contents and frequency of a discharge as exception as confidential information into the statuched of the content of the contents and frequency of a discharge as exception as confidential nature. The information is as required for a complete made on										
4. Name, address, telephone number and title of applicant	's authorized age	ent for pern	applicat	ion coordinati	on and corre	espondence.				
	T. L. Hur Director Kerr-McG 133 Rober	rst of Env ee Corp rt S. K	ironmen oration err	ntal Stud						
before attempting to complete to Required Information a. All information contained in this application will, up entitled "Confidential Answers" must be used to set mercial or financial information of a confidential narifidential treatment can be considered only for that is attached sheet. However, in no event will identificate information. b. The applicant shall furnish such supplementary information. c. If additional space is needed for a complete response that sheet the item numbers to which answers apply d. Drawings required by items 20 and 21 should be attached to the project of a water quality certification.	chis form. con request, be request, be request, be request, on the information for vition of the contest of th	nade availat n which is co- nation must which a spec- nts and freq- uired by the this form, a plication. Or	ole to the possidered to clearly indictific written uency of a postrict Eattach a she which designed.	oublic for inspired to the applicar icate the item in request of conditional discharge be in order that item in order that item is the cribes water of the properties of the cribes water of the	ection and contitue to vonfidentiality recognized as detected to evaluate additional in the attached to use the continuation of the attached to use the continuation and the continuation and con	opying. A separate sheet ute trade secrets or com- which it applies. Con- y has been made on the sconfidential or privileged to fully an application. formation." Indicate on this application include, t (see I tem 22 and I tem 10				
2. Name of applicant and title of signing efficial Sub \$1d. of Kerr-McGee Corp. George H. Cobb. Executive Vice-President 1.33 Robert S. Kerr Oklahoma City, Oklahoma 73102 4. Name, address, telephone number and title of applicant's authorized agent for parm. application coordination and correspondence. T. L. Harst Director of Environmental Studies Kerr-McGee Corporation 1.53 Robert S. Kerr Oklahoma 73102 4. Name, address, telephone number and title of applicant's authorized agent for parm. application coordination and correspondence. T. L. Harst Director of Environmental Studies Kerr-McGee Corporation 1.53 Robert S. Kerr Oklahoma 73102 NOTE TO APPLICANT: Refer to the pemphlet entitled "Permits for West and Structures in and for Discharges or Deposits into Navigable Wasters" NOTE TO APPLICANT: Refer to the pemphlet entitled "Permits for West and Structures in and for Discharges or Deposits into Navigable Wasters" NOTE TO APPLICANT: Refer to the pemphlet entitled "Permits for West and Structures in and for Discharges or Deposits into Navigable Wasters" NOTE TO APPLICANT: Refer to the pemphlet entitled "Permits for West and Structures in and for Discharges or Deposits into Navigable Wasters" NOTE TO APPLICANT: Refer to the pemphlet entitled "Permits for West and Structures in and for Discharges or Deposits into Navigable Wasters" NOTE TO APPLICANT: Refer to the pemphlet entitled "Permits for West and Structures in and for Discharges or Deposits into Navigable Wasters" Required Information A All information or Associated information or a sondition and status. The information which is considered by the applicant to constitute trade secrets or commercial of transferior of a conditional information which is considered by the application incommercial properties on a sonditional properties of the contents and frequency of a discharge is necessary in the application of a conditional information was in required by the District Engineer in order to value the properties of the contents and frequency of a disc										
2. Name of applicant and title of signing official		COBB cully falsifies, conceals or presentations, or makes								
Date received, form not complete — — — — — — — — — — — — — — — — — —		Are dischar Major? Date sent to Date sent to	ge structur DEPA, for DEPA, NO	Minor? m not comple	te — —					
day n	no yr				day	nio yi				

5. Date	(O' nly)
rno day yr	
6. Check type of epplication:	7. Number of original explication
a. Original X b. Revision]
D. Hama of facility and the district of the second	
B. Name of facility where discharge or construction will occur.	• ,
Henderson, Nevada P1	ant
Kerr-McGee Chemical	Corp.
9. Full mailing address of facility named in item 8 above.	
P. O. Box 55	•
Henderson, Nevada 89	015
10. Names and mailing addresses of all adjoining property owners whose proper	ty sign adjains the water
Unnamed drainage ditch discharging to	
Stauffer Chemical Company - Henderson	Nevada 1agoons
U. S. Lime - Henderson	. Nevada
Titanium Metals Corp. of America - He	nderson, Nevada
	•
11. Check to indicate the nature of the proposed activity:	
	tion with Discharge . b. Discharge only X
12. If activity is temporary in nature, estimate its duration in months.	
Marylinet and the state of the	
If application is for a discharge:	
13. List intake sources	
Estir Source Gall	nated Volume in Million ons Per day or Fraction
· · · · · · · · · · · · · · · · · · ·	Thereof 8
Municipal or private water supply system	<u> </u>
Ground water	
Other	
14. Describe water usage within the plant	
Estir	nated Volume in Million
	ons Per day or Fraction Thereof
Cooling water Boiler Feed water	$ \frac{2}{\pi}$ $\frac{2}{\sqrt{2}}$
Process water	$\frac{1}{3} - \frac{1}{3} - \frac{0}{5}$
Sanitary system ^e	$\frac{1}{2}$
Other	<u> </u>
15. List volume of discharges or losses other than into navigable waters.	
_ ' Estir	nated Volume in Million
Typo Gal	lons Per day or Fraction Thereof
Municipal waste treatment system	
Surface containment Underground disposal	
Waste Acceptance firms	$= - \cdot 0 - 3$
Evaporation	
Consumption	
• Indicate number employees served per day1	35
The second of the second per usy	

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If structures exist, or d precise location of the	redging, other cons activity (*) = described.	truction will occur, t	the (O	only)	
	undaries within which the st	tructures exist or the	<u> </u>		
Si	^{ate} Nevada	County C		ity or Town None	
		17.	18.		·
		litch to PMT	immonding la	anone.	
19,					
0. Maps and sketches wh and non-structural po	ich show the location and cl ints of discharge, must be at	haracter of each strue tached to this applica	cture or activity, incl ation.	uding any and all outfall d	evices, dispersive devices
a. Name the corporate boundaries within which the structures exist or the activity will occur. County Clark 18. City or Town None b. Name of waterway at the location of the activity Unnamed drainage ditch to BMI imponding lagoons					
		terstate, State or loc	al agencies for any st	ructures, construction, dis	charges or deposits
•	Type of document	ld. No.	Date	Issuing Age	псу
.*					
			•		
		j.			•
				•	Į.
	·				
			•		
23. Check if facility exis	ed or was lawfully under co	nstruction prior to A	pril 3, 1970.		
		•			
State the type of ma	terials involved, their volume	in cubic yards, and	the proposed mother	d of measurement.	
	Not Appl	icable			·
	-			•	
		•			
:				•	
				•	
		•			
	•	n which will be used	to measure the volu	me of any solids which ma	y be deposited and to
			d continuous	conductivity mo	mitoring
<u>.</u>			•	,	
· · · · · · · · · · · · · · · · · · ·			÷		
26. State rates and perio	ds of deposition described in	n Item 25.			
•	:			•	÷ .
	Not App	licable			
			•		
	,			•	
		,			

SELLION II. PL		
	ANT PROCESS AND DISCHA	LL DESCRIPTION
a. Present X b. Proposed new or changed	schedule	use only)
Name of corporate boundaries within which the point of State	f discharge is located. County	City or Town
3. <u>Nevada</u>	4. <u>Clark</u>	5. <u>None</u>
State the precise location of the point of discharge. 7. Latitude 3 6 Degrees; 0 2 Min; 5 8. Longitude 1 1 4 Degrees; 5 9 Min; 5	7 sec. Unnamed dra	at the point of discharge. ainage ditch to BMI imponding
10. Has application for water quality certification or des	cription of impact been made? If so,	give date:
Date	Check if certificate is attached to form	Name Issuing Agency
6 <u>1 5 7 1</u>		
electrolyzed to sodium perchlor muriatic acid to ammonium perch	sodium chlorate. A por rate. Sodium perchlora nlorate.	tion of this chlorate is further te is reacted with ammonia and
Manganese ore (pyrolusite) is a in a water soluble form. This manganese dioxide.		
Some codium chlorate and nerch	lorate is converted to	potassium chlorate and perchlora
(All processes included under	•	
12. Standard industrial classification number.	13. Principal product.	14. Amount of principal product produced per day.
2819		•
·		
15. Principal raw material.	16. Amount of principal raw materia	al 17. Number of batch discharges per day.
15. Principal raw material. Salt	16. Amount of principal raw materia consumed per day. 48 Tons	* ' '
Salt Manganese Ore	consumed per day. 48 Tons 22 Tons	Continuous Continuous
Salt Manganese Ore Ammonia	48 Tons 22 Tons 2 Tons	Continuous Continuous Semi-continuous
Salt Manganese Ore Ammonia Muriatic Acid	48 Tons 22 Tons 2 Tons 11 Tons	Continuous Continuous Semi-continuous Semi-continuous
Salt Manganese Ore Ammonia Muriatic Acid	48 Tons 22 Tons 2 Tons	Continuous Continuous Semi-continuous
Salt Manganese Ore Ammonia Muriatic Acid	d8 Tons 22 Tons 2 Tons 11 Tons Date discharge began. Before 1950	Continuous Continuous Semi-continuous Semi-continuous 20. Date discharge will begin.
Salt Manganese Ore Ammonia Muriatic Acid	d8 Tons 22 Tons 2 Tons 11 Tons Date discharge began. Before 1950	Continuous Continuous Semi-continuous Semi-continuous 20. Date discharge will begin.
Salt Manganese Ore Ammonia Muriatic Acid 18. Average gallons per batch discharge. 19. 1	d8 Tons 22 Tons 2 Tons 11 Tons Date discharge began.	Continuous Continuous Semi-continuous Semi-continuous 20. Date discharge will begin. yr mo day yr Dumps (EPUMPS), recycle of wash
Salt Manganese Ore Ammonia Muriatic Acid 18. Average gallons per batch discharge. 21. Describe waste abatement practices. Wastes are minimized by use of m	d8 Tons 22 Tons 2 Tons 11 Tons Date discharge began. Before 1950 day echanical seals on many erial for reuse in proc	Continuous Continuous Semi-continuous Semi-continuous 20. Date discharge will begin. yr pumps (EPUMPS), recycle of washess (RECOVE).
Salt Manganese Ore Ammonia Muriatic Acid 18. Average gallons per batch discharge. 21. Describe waste abatement practices. Wastes are minimized by use of matematers (ECOUNT), recovery of matematical vacuum filtration with wash water	d8 Tons 22 Tons 2 Tons 11 Tons Date discharge began. Before 1950 day echanical seals on many erial for reuse in proce r recovery to the proce	Continuous Continuous Semi-continuous Semi-continuous Semi-continuous 20. Date discharge will begin. yr pumps (EPUMPS), recycle of wash ess (RECOVE). ss in the manganese area SVACUM,

	P:	P:AL DESCRIPTION OF INTAKE WATER DISCHARGE [(Office use only)]											
Intake				Discharge		(01	fice u	se on	ly)				
	4	\	•	8L	6	6				Discharge Seria			
WANTAL WATER	TAKE!	PAROLES		ERACE DAIL,	TRAINING EN	ORIAN	ZING!	N. C.P.A.	TRESAMELE CA	AGAITAG	lous		
Parameter and (Code)	(1)				(3)	(4)	_	_	(5)	(6)		7)	
Flow (Gallons per day) 00056	800	Discharge Oktober Ok		600,000	500	500,000 4,000,0			Daily	М	on		
pH 00400	. {	3	None 600,000		8		6		10	Daily	M	on	
Temperature (Winter) (°F) 74028	5!	5		-	Ambio	ent		Ambient	Other	A	ABS		
Temperature (Summer) (°F) 74027	6!	Discharge Disc		75	Ambie	ient Ambient			Other AI		BS		
23.				DI	SCHARGE CO	NTENTS	3				·		
PARAMETER		PRESENT	ABSENT	P,	ARAMETER	·	PRESENT	ABSENT	P	ARAMETER	:	PRESENT	ABSENT
Color 00080		χ						χ	Nickel 01067			X	\vdash
Turbidity 00070		Х				>	χ		Selenium 01147			 	X
Radioactivity 74050			χ	Arsenic 01002		>	Х		Silver 01077				K
Hardness 00900		χ						χ	Potassium 00937			Х	
Solids 00500		х						Х	Sodium 00929			Х	
Ammonia 00610		X						χ	Titanium 01152				X
Organic Nitrogen 00605			χ					X	.Tin 01102				X
Nitrate 00620			х				х		Zinc 01092			Х	
Nitrite 00615			Х				Х		Algicides 74051)
Phosphorus 00665		х				>	Х		Oil and Greas 00550	е			7
Sulfate 00945		х					Х		Phenols 32730)
Sulfide 00745			Х				Х		Surfactants 38260				>
Sulfite 00740			Y			.>	x		Chlorinated F 74052	lydrocarbons)
Bromide 71870	V Magnesium					х		Pesticides 74053	· ·		T	1	
Chlorida 03940	v Manganese						х			cocci Bacteria			5
Cyar ी । 00720			Х	Mercury	······································			χ	Coliform Bac 74056	teria			7
Fluoride 00951			v	None 600,000			x					1	T

	٠				
1	H _c · all	known hazardous or ; ally hazardous substances in	your pl	ant been in	ıvd?
	[X Yes No	•		
24b.	If yes, h this disc	eve steps been taken to insure that there exists no possibil harge?	lity of a	ony such k	nown hazardous or potentially hazardous substance enter
		X Yes No			
25. F	Remarks.				
The an ac well.	tivity inci-	on above completes the basic reporting requirements which uded within any of the Standard Industrial Classification (are re Code (S	quired of a	all applicants. Those applicants whose discharge results from a categories listed below must complete Part A of this form a
		CRITICAL INC	USTF	RIAL GR	OUPS
sıc	098	FISH HATCHERIES, FARMS, AND PRESERVES	sıc	285	PAINTS, VARNISHES, LACQUERS, LNAMELS, AND ALLIED PRODUCTS
SIC	10–14	DIVISION B - MINING	SIC	2871	FERTILIZERS
SIC	201	MEAT PRODUCTS			
SIC	202 203	DAIRY PRODUCTS	SIC	2879	AGRICULTURAL PESTICIDES, AND OTHER AGRI- CULTURAL CHEMICALS, NOT ELSEWHERE CLASSIFIED
310	203	CANNED PRESERVED FRUITS, VEGETABLES (EXCEPT SEAFOODS, SIC 2031 AND 2036)	SIC	2891	ADHESIVES AND GELATIN
SIC	2031, 2036	CANNED AND CURED FISH AND SEAFOODS; FRESH OR FROZEN PACKAGED FISH AND	SIC	2892	EXPLOSIVES
	2000	SEAFOODS	SIC	29	PETROLEUM REFINING AND RELATED INDUSTRIE
SIC	204	GRAIN MILL PRODUCTS	SIC	3011,	TIRES AND INNER TUBES; FABRICATED RURBER
SIC	206	SUGAR		3069	PRODUCTS, NOT ELSEWHERE CLASSIFIED
SIC	207	CONFECTIONARY AND RELATED PRODUCTS	SIC	3079	MISCELLANEOUS PLASTICS PRODUCTS
SIC	208	BEVERAGES	SIC	311	LEATHER TANNING AND FINISHING
SIC	209	MISCELLANEOUS FOOD PREPARATIONS AND	SIC	32	STONE, CLAY, GLASS, AND CONCRETE PRODUCTS
SIC	22	TEXTILE MILL PRODUCTS	SIC	331	BLAST FURNACES, STEEL WORKS, AND ROLLING AND FINISHING MILLS
SIC	23	APPAREL AND OTHER FINISHED PRODUCTS	SIC	332	IRON AND STEEL FOUNDRIES
		MADE FROM FABRICS AND SIMILAR MATERIALS	SIC	333, 334	PRIMARY SMELTING AND REFINING OF NON- FERROUS METALS; SECONDARY SMELTING AND
SIC	242	SAWMILLS AND PLANING MILLS			REFINING OF NONFERROUS METALS

SIC

SIC

SIC

SIC

SIC

SIC

SIC

SIC

336

347

35

36

37

3731

491

493

NONFERROUS FOUNDRIES

SUPPLIES

MACHINERY, EXCEPT ELECTRICAL

BUILDING AND REPAIRING, SIC 3731)

ELECTRIC COMPANIES AND SYSTEMS

COMBINATION COMPANIES AND SYSTEMS

SHIP BUILDING AND REPAIRING

COATING, ENGRAVING, AND ALLIED SERVICES

ELECTRICAL MACHINERY, EQUIPMENT, AND

TRANSPORTATION EQUIPMENT (EXCEPT SHIP

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SIC 2432

2491

26

281

2818

282

283

284

SIC

SIC

SIC

SIC

SIC

SIC

SIC

VENEER AND PLYWOOD

PAPER AND ALLIED PRODUCTS

INDUSTRIAL INORGANIC AND ORGANIC CHEMICALS (EXCEPT SIC 2818)

PLASTICS MATERIALS AND SYNTHETIC RESINS, SYNTHETIC RUBBER, SYNTHETIC AND OTHER MAN-MADE FIBERS, EXCEPT

SOAP, DETERGENTS, AND CLEANING PREPARATIONS, PERFUMES, COSMETICS, AND OTHER TOILET PREPARATIONS

INDUSTRIAL ORGANIC CHEMICALS

WOOD PRESERVING

GLASS

DRUGS

PART A

(Note: Submission of Part A is required of all applicants whose processes are listed on page 3 above.)

(Office use only)

Discharge Serial No.

INFORMATION REQUIRED OF SPECIFIED INDUSTRIES

Intake		 	·			scharge	*D09141				
Intake OAIL UNITE TO ALL THE ALC CONCENTRAL ALC CONCENTRAL ALC CONCENTRAL AND CODE ALKALINITY (as Ca CO 00410	A TEO INITA ISE IN TON (1) FROM (1) FRO	MAXIMUM, PERPRINCENTR	MA + IN OUNDS PER CON (3)	CONCENTION DAY			SAMPLE	OF ME OUENCE	THOO NIVER	TINUOUS ORING	
PARAMETER AND CODE	TON (1) PATION	4 7 E A 7 (2)	ON (3)	O _Q , (4)	5 ON (5)	(6)	(7)	(8)	(9)	(10)	(11)
ALKALINITY (as Ca CO	122	NA	120	NA	4,000	<u> </u>	550		OTHER	STD	ABS
B.O.D. 5-DAY 00310	NA	*1	NA	**	NA	NA	NA	NA	NA	NA	NA NA
CHEMICAL OXYGEN DEMAND (C.O.D.) 00340	. 24	11	36	11	875	22	110	COMP	OTHER	STD	ABS
TOTAL SOLIDS	000	11	6,036	11	52,800	4,036	20,200	COMP	OTHER	STD	ABS
TOTAL DISSOLVED SOLIDS	796	11	5,606	11	50,600	3,822	19,100	COMP	OTHER	STD	ABS
TOTAL SUSPENDED SOLIDS	4	ţı	430	11	2,200	216	1,080	COMP	OTHER	STD	ABS
TOTAL VOLATILE SOLIDS 00505	176	11	1,380	11	11,900	968	4,840	COMP	OTHER	STD	ABS
AMMONIA (as N) 00610	ND	11	30		184	7	35	COMP	OTHER	STD	ABS
KJELDAHL NITROGEN 00625	ND	*1	30	11	184	7	35	COMP	OTHER	STD	ABS
NITRATE (as N) 00620	1.0	11	.92	11	31	0.49	2.5	COMP	OTHER	STD	ABS
PHOSPHORUS TOTAL (as P) 00665	0.25	71	.80	ff	12	0.4	2	ССМР	OTHER	STD	ABS

TABLE A Guide for Completion of Par

			REFERENCES	J		
PARAMETER & UNITS	METHOD	STANDÄRD METHODS 13TH ED. 1971	A.S.T.M. STANDARDS Pt. 23 1970	W.Q.O. METHODS 1971	SIGNIFICAN IN REPORTIN DATA	
ALKALINITY AS Ca CO ₃ Mg/liter	ELECTROMETRIC TITRATION TECHNICON METHYL ORANGE METHOD	p. 370	p. 154	p. 6	x.	
B.O.D. 5-DAY Mg/liter	MODIFIED WINKLER METHOD OR PROBE METHOD	p. 489	p. 712	p. 15	x.	
CHEMICAL OXYGEN DEMAND (C.O.D.) Mg/liter	DICHROMATE REFLUX METHOD	p. 495	-	p. 17	x .	
FOTAL SOLIDS Mg/liter	GRAVIMETRIC, 105°C. METHOD	p. 535	_	p. 280	x.	
FOTAL DISSOLVED FILTERABLE) SOLIDS Mg/liter	GLASS FIBER FILTRATION METHOD, 180°C.	p. 539	_	p. 275	x.	
FOTAL SUSPENDED NON-FILTERABLE) SOLIDS Mg/liter	GLASS FIBER FILTRATION METHOD, 103–105°C.	р. 537	-	p. 278	x.	
TOTAL VOLATILE SOLIDS Mg/liter	GRAVIMETRIC METHOD 550°C.	p. 536	-	p. 282	x.	
AMMONIA (as N) Mg/liter	DISTILLATION-NESSLERIZATION METHOD OR TECHNICON-DIGESTION & PHENOLATE METHOD	р. 453	_	p. 134	.xx	
KJELDAHL NITROGEN Mg/liter	DIGESTION-DISTILLATION METHOD OR TECHNICON-DIGESTION & PHENOLATE METHOD	p. 469	-	p. 149	.xx	
NITRATE (as N) Mg/liter	BRUCINE SULFATE METHOD OR TECHNICON-HYDRAZINE REDUCTION METHOD	p. 461		р. 170	.xx	
TOTAL PHOSPHORUS (as P) Mg/liter	PERSULFATE DIGESTION & SINGLE REAGENT METHOD OR TECHNICON-MANUAL DIGESTION & SINGLE REAGENT OR STANNOUS CHLORIDE	р. 526	-	р. 235	.xx	

ENG FORM 4345-1

Discharge Permit Application No. NV 075-0YQ-2-000254
- Discharge Serial No. 001

I certify that I am familiar with the information contained in the attached form B and that to the best of my knowledge and belief, such information is true, complete and accurate.

George H. Cobb

Executive Vice President

GHC:jl Attachment

M CF10/5/11

	rC'	B DIRPH	ARPEE DES	DORIPHTOUN	(
Nitione: Euromissian of Part Brit also required to Submit Part A. On Andicated in the instructions one to			i	ŶC 0 493 0 Ø∏IY)			
			975QYQ2	20002544	ı	Dischargo Sorial I	
B-1. PHYSGGAL AY	PD BIOLDOGICA				NFO DISSIPHIAR	IGEF Seco Table	00) Io B.1)
Intake				Discharge	,		
This control of the c							
		\ ' \ '		S.	CON		
Wrathe	VIAREA	RAGA	MININ OP	AND THE WAY	215	NUOUS N	
WATREATED TO THE REATED	WAKE WATER	RAGE IDAILY,	W.Chi	LING TH	"REQUE.	MONIT	
C #	(A)	15	ANNIMUM OPE	MA TING YEARI	CONT	INUOUS MONITOR	n _c
PARAMETER				$\overline{}$			
AND CODE	(1)	(2)	(3)	(4)	(5)	(6)	(7)
COLOR		27.0				·	
00080 \$;	<5	NA.	₹ 5		< 5	D .	Λ
SPECIFIC CONDUCTANCE 00095	NA -	NA	NA	ИА	NA	па	11/
TURBIDITY							·
00070 🙀	< 4	AM ^a	10		15	U	۸
FECAL STREPTOCOCCI		•					
BACTERIA 74054 .	NA	NA	нА .		NA	::A	HA.
FECAL COLIFORM						 	
BACTERIA 74055	AA	NA .	NA 🦿		Ан	iiΛ	114
TOTAL COLIFORM BACTERIA 74056	NA	NA	NA	\times	NA	ил	NA NA
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ENIG FORM 4345-1

PART B

(Office use only)

NV 075-0YQ-2-000254

Discharge Serial No.

001

R-2

CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

B-2.	CHEMICAL I	PARAMETE	RS OF INT	TAKE WAT	ER AND D	ISCHARGE	(See Table	B-2)					
Intake	Discharge												
UNTREATED INTAKE WA	MAXIMUNA ED INTAKE WATE	CONCENTRATION OF THE PROPERTY	MAXIMALIAN PROCESS UNIT PA	OAIL A OAL OAL	AVERACONCENTRA	Tion State	AN CONTRACTOR	INVOUS ANALYCY	Stioni	ORING			
PARAMETER AND CODE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	ľ		
ACIDITY (as CaCO ₃) 00435	NA .	АИ	АИ	AM	An	АИ	АИ	АИ	НA	AH	11		
TOTAL ORGANIC CARBON (T.O.C.) 00680	А	АИ	- 3	NA	15	2	10	С	D	S	A		
TOTAL HARDNESS	360	NA	1,200	АИ	11,000	1,100	5,500	С	D	0			
NITRITE (as N) 00615	АИ	NA	NA	NA	АИ	NA	NA .	Àи	АИ	NΛ	N		
ORGANIC NITROGEN 00505	АИ	NA	AN	NA.	NA	NA	ΝΛ	NA	АИ	AN	N		
PHOSPHORUS-ORTHO (as P) 70507	NA	ИА	. NA	AM	АИ	NA	NA	NA	М	НA	E		
SULFATE 00945 &	315	NA.	2,500	АИ	13,000	1,700	8,500	С	D	0			
SULFIDE 00745	0.2	NА	1.0	• NA	.5	0.6	3.0 3.6	С	D	S			
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ENG FORM 4345-1

Page 2D c

			PA	ART B							
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			NV 075	-070-2-	000254		Discharge	o Sorial			
B-2. (cont.)	CHEMICAL				TER AND	DISCHARGI	E (See Tab	le B-2			
Intake		·		C	ischarge					•	
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PARAMETER	(1)	(2)	(3)	(4)	(5)	(6)	9 _L (7)	(8)	(9)	(10)	(11
CHLORIDE 00940	110	AM	4,000	NA	20,000	1,200	6,000	С	D	0	R
CYANIDE - 00720	A	NA	0.01	NA	0.06	А	A	С	D	S	Α
FLUORIDE 00951	0.30	NA	0.30	NA	1,5	0.30	1.5 1.8	С	D	S	Α
ALUMINUM-TOTAL 01105	25	NA	100	NA	0.5	60	0.3	С	D	S	А
ANTIMONY-TOTAL 01097	Α	NA	A	NA	А	A	A	С	D	s	A
ARSENIC-TOTAL 01002	A	NA	6	NA	0.03	4	0.02	С	D	s	A
BARIUM-TOTAL 01007	NA	NA	нА	NA	. NA	АИ	NA	ΝΛ	на	An	N
BERYLLIUM-TOTAL 01012	АИ	NA	NA	NA	AN	ΝΑ	AA	нА	NA	IIΛ	H
BORON-TOTAL 01022	. NA	NA	AM	NA	АИ	NA	NA	АИ	нА	ΝΛ	I
CADMIUM-TOTAL 01027	12	NA	100	АИ	0.5	60	0.3	С	D	S	

ENG FORM 4345-1

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				(Offi	co use only)						
			NV O	75-0YQ-	2-0002	5 4	Dischargo	Script	No.		
B-2, (cont.)	CHEMICAL	CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)									
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CALCIUM-TOTAL 00916	100.0	NA	500	NA	2,500	400	2,000	С	D	S	A
CHROMIUM-TOTAL 01034	8	NA .	6,000	NA	30	60	0.3	С	D	S	А
COBALT-TOTAL 01037	-0 -	ΝΑ	500	NA	2.5	300	1.4	C	D	S	Α
COPPER-TOTAL 01042	100	ΝΛ	1,000	NA	ς,0 8.0	800	4.0	С	D	Ş	A
IRON-TOTAL 01045	0 ß	NA	480,000	AN	2,400	220,000	1,100	С	D.	s	Α
LEAD-TOTAL 01051	200	NΑ	1,000	АИ	12.0	800	4.0	С	D	S	Α
MAGNESIUM-TOTAL 00927	28	АИ	40	АИ	1,200	30	150 ′	С	D	S	Α
MANGANESE-TOTAL 01055	0 1	ŊА	600,000	iia	3,000	360,000	1,800	С	D	S	А
MERCURY-TOTAL 71900	Α .	NA	А	NA	A	А	А	С	D	S	A
MOLYEDENUM-TOTAL 01062	10	NA	60	АИ	.03	45	.02	С	D	S	А

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NICKEL-TOTAL	A			•							
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POTASSIUM-TOTAL,	5.00	АИ	480	АИ	2,400	240	1 200	C	<i>D</i>		
	3.00		100	107	2,400	240	1,200	L L	D	0	A
SELENIUM-TOTAL	'										
01147	IIA	NA	NA	АИ	AM	NА	ΝΑ	AM	NA	NA	NA
					-						
SILVER-TOTAL 01077	An .	NA	NA -	AI A	*18	210					
	IIA			NA	AN	NA	АИ	NA	HA	NA	N/
SODIUM-TOTAL											
00929	150	NА	3,000	NA	15,000	1,000	5,000	С	D	S	R
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THALLIUM-TOTAL 01059						_					
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TITANIUM-TOTAL 01152	A	NA	A	NA	A	A	A		D	0	A
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ZINC-TOTAL	12 000	210	30,000	116	505						
01092	12,000	HA	30,000	NA	600	26,000	130	C	D	S	A
OIL AND GREASE				-							
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PART B

(Office use only)

NV 075-0YQ-2-000254

Discharge Serial No.

001

B-2. (cont.)

CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

B-Z. (cont.)		TAIMET				DIOUITATIO	- 1000 101		' —		
Intaka	Discharge										
	Maximum COMTAKE NATE	ANATING PER	TAR AIRTO CASS SEINT ON	OAIL + A	AVERA CONCENTRA	SE POUNOS PER	Constitution of the Property o	STRUOD OF SKAL	S A S A S A S A S A S A S A S A S A S A	ronkis	
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PHENOLS 32730	A	NA	A	NA	. A	Α	А	С	D	s	A
SURFACTANTS 38260	AH	AN	ПA	АИ	na NA	НΑ	АМ	ΝA	RA	NA	11
ALGICIDES® 74051	ΝΑ	АИ	NA	ΝА	АИ	NA	Аи	NА	AM	ил	1.
CHLORINATED HYDRO- CARBONS* (EXCEPT PESTICIDES) 74052	. АИ	Аи	АИ	Аи	АИ	NA	NA	АИ	NA	AN	;
PESTICIDES* 74053	NΛ	NA	NA	NA	АИ	NA	NA	NΑ	ил	на	î
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^{*}Name specific compound(s) and fill in the required data for each. Use extra blanks at the end of the form and the "Romarks" space as necessary.

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itake				Discharge	. !		. ! :
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ALPHA-TOTAL 01501	NA .	ΝΛ	NA		NA	NA NA	NA_
ALPHA COUNTING ERROR 01502	NA	NA.	NA .		NA	AN	NA
SETA-TOTAL 03501	NA	NA	NA		NA_	HA	NA
DETA COUNTING ERROR 03502	NA .	NA	NA		AN	AM	NA
GAMMA-TOTAL 05501	. NA	NA	NA		NA_	NA	NA
GAMMA COUNTING ERROR 05502	NA	NA	NA		NA.	NΛ	, NA
TRITIUM-TOTAL 07000	NA	NΛ	NA	X	NA	NA_	NA
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16.



March 6, 1972

Department of the Army Los Angeles District, Corps of Engineers P. O. Box 2711 Los Angeles, California 90053

Attention: Mr. R. P. Young

Chief, Construction-Operations Division

Re: 075-0YQ-2-000254

Gentlemen:

Returned herewith is above captioned application that provides additional data you requested on the Kerr-McGee Chemical Corp. facility at Henderson, Neyada.

A yellum or reproducible negative copy of the revised discharge drawing will be sent to you as soon as it is available which we expect to be in the next few days.

Sincerely,

T. L. Hurst

Director of Environmental

Services

TLH:j1 Enclosure

bcc: C. B. Armstrong - Henderson w/a

L. E. Craig w/a

M. C. Locke w/a

5. Date	(Office use only)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	075-078-2-000254
6. Chack type of application:	7. Number of original application
a. Original X b. Revision	
8. Name of facility where discharge or construction will occur.	
Henderson, Nevada Pla	
Kerr-McGee Chemical C	Corp.
9. Full mailing address of facility named in item 8 above.	
P. O. Box 55	
Henderson, Nevada 890	15
10. Names and mailing addresses of all adjoining property owners whose property	v also adjoins the waterway
Unnamed drainage ditch discharging to	•
Stauffer Chemical Company - Henderson,	
U. S. Lime - Henderson,	, Nevada
Titanium Metals Corp. of America - Hen	
11. Check to indicate the nature of the proposed activity: a. Dredging b. Construction c. Construction	ion with Discharge D. Discharge only
	······································
12. If activity is temporary in nature, estimate its duration in months.	
PERMOUNT	
PERMOUNT	
PERMINENT If application is for a discharge: 13. List intake sources Estim	nated Volume in Million ons Per day or Fraction
PERMINENT If application is for a discharge: 13. List intoke sources Estim Source Gallo	nated Volume in Million ons Per day or Fraction Thereof 8
PERFINICIO If application is for a discharge: 13. List intoke sources Estim Source Municipal or private water supply system	ons Per day or Fraction
PERMINENT If application is for a discharge: 13. List intoke sources Estim Source Gallo	ons Per day or Fraction
If application is for a discharge: 13. List intoke sources Source Municipal or private water supply system Surface water body	ons Per day or Fraction
If application is for a discharge: 13. List intoke sources Source Municipal or private water supply system Surface water body Ground water	ons Per day or Fraction Thereof 8
If application is for a discharge: 13. List intoke sources Source Municipal or private water supply system Surface water body Ground water Other 14. Describe water usage within the plant Estin	ons Per day or Fraction Thereof 8
If application is for a discharge: 13. List intoke sources Source Municipal or private water supply system Surface water body Ground water Other 14. Describe water usage within the plant Estin	Par. 14 Other** noted Volume in Million ons Per day or Fraction Plan 14 Other **
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If application is for a discharge: 13. List intoke sources Source Municipal or private water supply system Surface water body Ground water Other 14. Describe water usage within the plant Estim Type Cooling water Boiler Feed water Process water Sanitary system*	Par. 14 Other** mated Volume in Million ons Per day or Fraction Thereof 2 2 Cooling .07 3 5 Gland water .01
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COPY

Department of the Army Los Angeles District, Corps of Engineers P. O. Box 2711 Los Angeles, California 90053

Attention: Mr. R. P. Young

Chief, Construction-Operations Division

Re: 075-0YQ-2-000254

Gentlemen:

As mentioned in my letter to you of March 6, 1972, enclosed herewith is an original tracing and four copies of waste water discharge serial 001 from the Kerr-McGee Chemical Corp. facility at Henderson, Nevada.

Very truly yours,

100

T. L. Hurst Director of Environmental Services

TLH:jl Enclosures 5

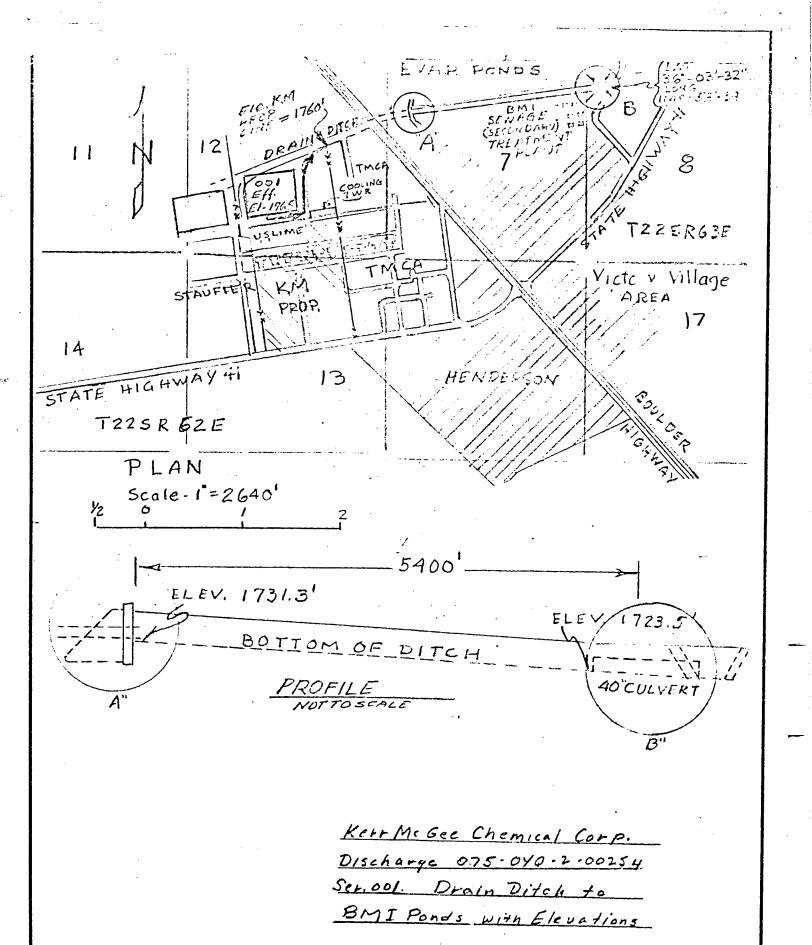
bcc: C. B. Armstrong Henderson w/a

L. E. Craig w/a M. C. Locke w/a

BLIND NOTE TO C. B. Armstrong:

Chuck, you will note the changes that we asked Ralph Vreeland to make to show a commingled outfall 001 that conforms with the data in the original application.

T.L.H.



HENDERSON
DRAWN OF CHECK L APPR.

DATE 7-1-77 SCALE /550 On

NEVADA

NEVADA

| KERR M'GCE CHEM. COK.M.
| PLANT EFFLUENT | DOTEMBLE |]-00-1-31

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On 7:7

7:21

UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION IX

100 CALIFORNIA STREET SAN FRANCISCO, CALIFORNIA 94111

Mr. James J. Kelley, President Kerr-McGee Chemical Corporation

Kerr-McGee Building

Oklahoma City OK 73012

Dear Mr. Kelley:

We have received your letter of May 26, 1972 outlining the measures you intend to take to bring wastewater discharges from your facility at Henderson, Nevada into compliance with State-Federal water quality standards established for Lake Mead and the Colorado River.

As we understand your intentions, these measures include:

- 1. Technical studies, design, and process changes for the chlorate plant, ammonium perchlorate plant, and manganese dioxide plant;
- 2. Design and construction of completely lined and sealed evaporation ponds for potassium wastewaters;
- 3. Design and construction of completely lined and sealed evaporation ponds for wastewaters from the chlorate plant;
- 4. Design and construction of completely lined and sealed evaporation ponds for wastewaters from the ammonium perchlorate plant;
- 5. Design and construction of completely lined and sealed evaporation ponds for blowdown from cooling towers.

We understand further that these measures will result in a complete cessation of wastewater discharges to groundwaters and surface waters and will be taken in accordance with the following schedule:

Date

Item

7/1/72

Initiate item #1 above

10/1/72

Complete item #2 above

9/30/73	Initiate item #4 above
12/31/73	Complete item #1 and initiate item #3 above
3/31/74	Complete item #4 above
6/30/74	Complete item #3 and initiate item #5 above \
12/31/74	Complete all work

We find that your proposed schedule of progress report submission to this office is satisfactory and will, accordingly, expect reports by 1/15/73, 7/15/73, 1/15/74, 7/15/74, and 1/15/75. Please furnish copies of these reports to the Nevada Commission of Environmental Protection, as well.

You are to be commended for your forthright response to the environmental problems in Las Vegas Valley and we will look forward to completion of the pollution abatement facilities you will be installing.

Sincerely,

R. L. O'Connell, Director Enforcement Division

cc: Nevada Commission of Environmental
Protection

U.S. Attorney, Las Vegas Mr. Charles Armstrong



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

100 CALIFORMA STREET
SAN FRANCISCO CALIFORNIA 94111

Mr. George H. Cobb, Executive
Vice President
Kerr McGee Chemical Corporation
133 Robert S. Kerr Drive
Oklahoma City OK 73102

Dear Mr. Cobb:

RECEIVED

GEORGE H. UCLB

In accordance with the provisions of the Federal Water Pollution Control Act (33 USC 1251 et. seq.), the Environmental Protection Agency has reviewed your application (No. 075-0YQ-2-000254) for a National Pollutant Discharge Elimination System permit to discharge waste waters from your Henderson, Nevada facility into Las Vegas Wash. This Agency has published a public notice regarding the application and our proposed action with respect to it, and held a public hearing to receive the views of all interested parties.

After consideration of the expressed views of all interested persons and agencies, pertinent Federal statutes and regulations, and State action regarding certification of this discharge, the enclosed National Pollutant Discharge Elimination System permit has been issued on this date by the Environmental Protection Agency for the discharge referred to above. The permit as issued differs from that proposed at the public hearing in the following significant respect:

1) The requirement for groundwater monitoring has been deleted.

The permit shall take effect thirty days from the date of this notice, unless a valid request for an adjudicatory hearing on this matter is received within twenty days

of the date of this notice. A request for an adjudicatory hearing will be considered to be valid if it complies in all respects with the requirements for such requests as described in pertinent Federal regulations (40 CFR 125.34).

Sincerely,

Paul De Falco, Jr.

Regional Administrator

Enclosure

cc: Nevada Commission

of Environmental Protection

(w/encl.)

Permit No.

NV0000078

Name of permittee Kerr McGee Chemical

Corporation

Effective date

AUG 2 6 1973

Expiration date

January 31, 1975

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

DISCHARGE PERMIT

In reference to application number: 075-0YQ-2-000254 for a permit authorizing a discharge in compliance with the provisions of the Act of Congress enacted October 18, 1972, (86 Stat. 816) entitled the Federal Water Pollution Control Act Amendments of 1972 (hereinafter referred to as "the Act"), Kerr McGee Chemical Corporation is authorized by the Environmental Protection Agency, Region IX, to discharge

from: Henderson, Nevada plant, Basic Management Incorporated Complex, Henderson, Nevada,

to the waters of the United States at: Las Vegas Wash, approximately five miles from its confluence with Las Vegas Bay,

in accordance with the following general and special conditions:

General Conditions

- I. All discharges authorized herein shall be consistent with the terms and conditions of this permit; facility expansions, production increases, or process modifications which result in new or increased discharges of pollutants must be reported by submission of a new NPDES application at least 180 days prior to such changes or modifications or, if such new or increased discharge does not violate the effluent limitations specified in this permit, by notification of the issuing authority of this permit at least 30 days prior to such new or increased discharges of pollutants; the discharge of any pollutant more frequently than or at a level in excess of that identified and authorized by this permit shall constitute a violation of the terms and conditions of this permit.
- II. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
 - a. Violation of any terms or conditions of this permit;
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- III. Notwithstanding (II) above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act, or amendments thereto, for a toxic pollutant which is present in the discharge authorized herein and such standard or prohibition is more stringent than any limitation upon such pollutant in this permit, the issuing authority of this permit shall revise or modify this permit in accordance with the toxic effluent standard or prohibition and so notify the permittee.
- IV. The permittee shall allow the Director of the State water pollution control agency, the Regional Administrator, and/or their authorized representatives, upon presentation of credentials:

a. To enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit;

. 1

- b. To have access to at reasonable times and copy any records required to be kept under the terms and conditions of this permit;
- c. To inspect at reasonable times any monitoring equipment or monitoring method required in this permit; or,
- d. To sample at reasonable times any discharge of pollutants.
- V. The discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste into waters of the United States is prohibited.
- VI. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the permittee, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Regional Administrator.
- VII. The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.
- VIII. The issuance of the permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.
- IX. This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters.
- X. The specific effluent limitations and other pollution controls applicable to the discharge permitted herein are set forth below in the Special Conditions. Also set forth below are self-monitoring and reporting requirements. Unless otherwise specified, the permittee shall submit duplicate original copies of

all reports to the head of the State water pollution control agency and the Regional Administrator. All such reports shall be available for public inspection at the offices of the head of the State water pollution control agency and the Regional Administrator. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act.

Special Conditions

(Special Conditions are specified on the following pages.)

Special Conditions

Kerr McGee Chemical Corporation

1. Effluent Limits.

a. General

Except as specified in 1b below, the permittee is authorized to discharge to Las Vegas Wash a final effluent which shall not exceed the average daily and maximum daily values as specified on the application dated, June 11, 1971, including any modification thereto, including but not limited to any modifications as recorded in the transcript of the public meeting held on May 17, 1973, at Las Vegas, Nevada, for the permit.

b. Specific

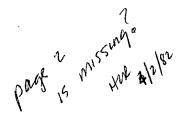
0-2-

(1) After the effective date of this permit and until December 31, 1974, the permittee is authorized to discharge to Las Vegas Wash, an effluent whose characteristics shall not exceed at any time the following limits:

Discharge Serial Number 001

	30-Day Pollu Dischar	tant	Maximum Pollu Dischar	tant	Maximum Concentration
Constituent	(kg/day)	(lbs/day)	(kg/day)	(lbs/day)	(mg/l)
Total Dissolved Solids	8,600	19,000	23,000	51,000	5,600
Chlorides	2,700	6,000	9,100	20,000	4,000

- (2) All discharge of pollutants shall be eliminated by December 31, 1974.
- 2. Implementation Schedule.
 - a. The Schedule



3. Monitoring and Reporting.

A sampling station shall be established for each point of discharge and shall be located where representative samples of effluent can be obtained prior to discharge and where the effluent can be observed.

The permittee shall monitor and record the quality and quantity of each discharge according to the following schedule and other provisions:

a. Monitoring Schedule

Discharge Serial Number	Constituent	Minimum Frequency of Analysis	Sample Type
001	Flow	Once Every Two Weeks	Discrete
001	Total Dissolved Solids	Once Every Two Weeks	Composite
001	Chlorides	Once Every Two Weeks	Composite

b. Quality Control

The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at sufficiently frequent intervals to ensure accuracy of measurements or shall insure that both activities will be conducted.

Samples shall be representative of the volume and quality of effluent discharged over the sampling and reporting period.

All samples are to be taken during normal operating hours.

c. Recording

The permittee shall record for all samples, the date and time of sampling, the sample method used, the date analyses were performed, the identity of the analysts, and the results of all required analyses and measurements.

- (1) All sampling and analysis records mentioned in the preceding paragraph and all original strip-chart recordings from any continuous monitoring instrumentation together with any calibration and maintenance records shall be retained for a minimum of three years. This period will be extended during the course of any unresolved litigation, or when so requested by the Regional Administrator.
- (2) The permittee shall identify and record the effluent sampling point used for each discharge outfall.
- (3) The permittee shall provide the above records and shall demonstrate the accuracy of the flow measuring devices upon request of the Regional Administrator.

d. Sampling and Analysis

The analytical and sampling methods used, must conform to any one of the following reference methods (latest edition) and to any guidelines establishing test procedures for the analysis of pollutants promulgated by the Administrator of the Environmental Protection Agency pursuant to Section 304(g) of the Act. However, different but equivalent methods are allowable if they receive the prior, written approval of the Regional Administrator.

- (1) Standard Methods for the Examination of Water and Wastewaters, 13th Edition, 1971, American Public Health Association, New York, New York 10019
- (2) A.S.T.M. Standards, Part 23, Water; Atmospheric Analysis, 1970, American Society for Testing and Materials, Philadelphia, Pennsylvania 19103
- (3) Methods for Chemical Analysis of Water and Wastes, April 1971, Environmental Protection Agency Water Quality Office, Analytical Quality Control Laboratory, 1014 Broadway, Cincinnati, Ohio 45202

e. Reporting

The results of the above monitoring requirements shall be reported on the Discharge Monitoring Report Form in the units specified. The permittee shall include in this report any previously approved non-standard methods used. Permanent elimination of a discharge should be brought to the attention of the Regional Administrator within 15 days by a special, written notification. A written report should be submitted if there have been any modifications in the waste collection, treatment, and

disposal facilities not provided for in this permit; changes in operational procedures; or other significant activities which alter the nature and frequency of the discharges or otherwise concern the conditions of this permit.

All reports shall be signed by the principal executive officer or corporate official in a corporation, of at least the level of vice president, or by his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the application originates; or a general partner or the proprietor in the case of a partnership or sole proprietorship, respectively.

Compagnation f. Other Provisions

(1) Soil Moisture Monitoring

The permittee shall, by December 31, 1973, submit to the Regional Administrator a plan for monitoring soil moisture and water quality of soil moisture beneath each impermeable pond or an alternative plan which would demonstrate the continuing effectiveness of measures taken to prevent the percolation of waste water from each pond into the underlying soil. The plan shall include:

- (a) description of equipment and installation of the equipment required for monitoring;
 - (b) Tocation of sampling sites; and may include
- (c) analyses of soil moisture extracts for total dissolved solids and chlorides.

The permittee shall implement the plan upon approval of the Regional Administrator including in such implementation any additions or modifications which the Regional Administrator may make in approving the plan.

4. Oil Discharges.

There shall be no discharge of harmful quantities of oil, as defined pursuant to 40 CFR 110, including (1) any amendments or revisions made subsequent hereto, or (2) any more restrictive limitations which may be imposed otherwise by law or regulation. The authorization of this permit does not preclude the institution of any legal action, nor relieve the permittee

from any liabilities, penalties or responsibilities established by Section 311 of the Act, or amendments thereto, or by any superseding Federal or State legislation.

5. Other Materials.

Other materials ordinarily produced or used in the operation of this facility which have been specifically identified in the application for the permit dated June 11, 1971, including any modification thereto, may be discharged at the average and maximum frequencies and average and maximum levels noted in the application, provided:

a. they are not

- (1) designated as hazardous under provisions of Section 311 of the Act, or amendments thereto, or
- (2) known to be hazardous or toxic by the permittee; except that such materials may be discharged in certain limited amounts with the written approval of, and under special conditions established by, the Administrator or his designated representative, if the substances will not pose any imminent hazard to public health or safety;
- b. the discharge of such materials will not violate applicable water quality standards; and
- c. the permittee is not notified by the Regional Administrator to eliminate or reduce the quantity of such materials in the discharge.

6. Solids Disposal.

Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of by the permittee or his agent in such a manner as to prevent entry of such materials into waters of the United States. A report of plans, methods and procedures for such disposal shall be submitted to the Regional Administrator by September 1, 1973. If there is no solids disposal, the report shall so state.

7. Non-Compliance.

In the event the permittee is unable to comply with any of the conditions of this permit, due, among other reasons, to

- a. breakdown of waste treatment equipment,
- b. accidents caused by human error or negligence, or

other causes such as acts of nature,

the permittee shall notify the Regional Administrator in writing, as soon as he or his agents have knowledge of the incident. The written notification shall include pertinent information explaining reasons for the non-compliance and shall indicate what steps were taken to correct the problem, and the dates thereof, and what steps are being taken to prevent the problem from recurring.

In addition, if the non-compliance is with respect to any of the effluent limits (condition 1) of this permit, the permittee shall promptly initiate a monitoring program to analyse the discharge at least once every day for those constituents for which the effluent limits have been violated. Such daily analyses shall continue until compliance with the effluent limits has been attained, or until such time as the Regional Administrator determines to be appropriate. The results of such monitoring programs shall be included in the Discharge Monitoring Reports required by condition 3e.

8. Emergency Action -- Electric Power Failure.

The permittee shall

- a. by December 31, 1974 provide an alternate source of electric power to operate all waste treatment facilities, or
- b. indicate in writing, within thirty (30) days after the effective date of this permit, to the Regional Administrator, that production shall be controlled or the discharge shall be handled in such a manner that, in the event the primary source of electric power to the waste treatment facilities fails, any discharge into the receiving waters will comply with condition 1 requirements.

The alternate power supply, as referred to in (a) above, whether from a generating unit located at the plant site or purchased from an independent producer of electricity, must be separate from the existing power source used to operate the waste treatment facilities. If a separate facility located at the plant site is to be used, the permittee shall certify in writing to the Regional Administrator when the facility is completed and prepared to generate power.

9. Bypass of Waste Treatment Facilities.

There shall be no bypass of waste treatment or disposal facilities at any time.

10. Other Conditions.

a. Spill Prevention and Containment Plan

Within 90 days from the effective date of this permit, the permittee shall prepare and submit to the Regional Administrator and State Agency, a Spill Prevention, Containment, and Countermeasure Plan for the facility covered by this permit. Such plan shall contain information and procedures relative to the prevention of spills and unplanned discharges of oil and hazardous substances including:

- (1) a description of the reporting system which will be used to alert responsible facility management and appropriate legal authorities;
- (2) a description of preventive facilities (including overall facility plot) which prevent, contain or treat spills and unplanned discharges;
- (3) a list of all oil and hazardous materials used, processed, or stored at the facility which may be spilled into the waters of the United States;
- (4) a brief description of recent spills and the measures taken to prevent recurrence; and
- (5) an implementation schedule for additional facilities which might be required for (2) above, but which are not yet operational.

Permittee shall implement and comply with the provisions of such Plan after the Plan has been approved by the Regional Administrator, including in said implementation and compliance any additions or modifications which the Regional Administrator may make in approving the Plan.

b. Holding Pond Conditions

If any waste waters from the permittee's facility are placed in ponds, such ponds shall be located and constructed so as to:

- (1) contain with no discharge the once-in-one-hundred years storm at said location;
- (2) withstand with no discharge the once-in-one-hundred years flood of said location;

where is the wind

(3) prevent escape of waste water by either seepage or leakage.

11. Reapplication.

If the permittee desires to continue to discharge, he shall reapply not later than 180 days before this permit expires, on the application forms then in use.

12. Definitions.

For purposes of this permit, the following definitions shall apply:

Regional Administrator: Regional Administrator

Environmental Protection Agency

Region IX

100 California Street San Francisco CA 94111

State Agency: Commission of Environmental Protection

201 South Fall Street

Nye Building

Carson City NV 89701

Maximum Daily Pollutant Discharge Rate:

The maximum daily pollutant discharge rate shall be the value of M that is obtained from either of the following calculations for any calendar day:

$$M(lbs/day) = \frac{8.34}{N} \sum_{i=1}^{N} Q_iC_i; M(kg/day) = \frac{86.4}{N} \sum_{i=1}^{N} Q_iC_i$$

in which N is the number of samples analyzed in any calendar day, and Q_i and C_i are the flow rate (million gallons per day or cubic meters per second) and the constituent concentration (milligrams per liter), respectively, which are associated with each of the N samples. For any sample concentration, the associated flow rate is the average rate occurring during the period of sampling.

Thirty Day Average Pollutant Discharge Rate:

The thirty (30) day average pollutant discharge rate shall be the arithmetic average of all of the values of M calculated using the results of analyses of all samples collected during any thirty consecutive calendar day period. If fewer than four (4) samples are collected and analyzed during any thirty consecutive calendar day period, compliance with the thirty day average pollutant discharge rate limitation shall not be determined.

Maximum Concentration:

Maximum concentration limits shall be applied to the concentration values (milligrams per liter, mg/l) associated with any single discrete or composite sample.

Discrete Sample:

An individual sample collected in less than 15 minutes.

Composite Sample:

A combination of no fewer than eight individual samples obtained at equal time intervals over the specified sampling period. The volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling. The sampling period shall equal the discharge period, or 24 hours, whichever is shorter.

The Regional Administrator has notified the applicant and interested agencies and persons of his intent to issue a permit for the discharge described in Application No. 075-0YQ-2-000254 and has provided them an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

This permit shall become effective 30 days following the date of the Regional Administrator's signature, below, and shall expire on January 31, 1975.

By authority of the United States Environmental Protection Agency.

JUL 2 7 1973

Date

Regional Administrator



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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

SECTION I. APPLICANT AND FACILITY DESCRIPTION

Unless otherwise specified on this form all items are to be completed. If an item is not applicable indicate 'NA.'

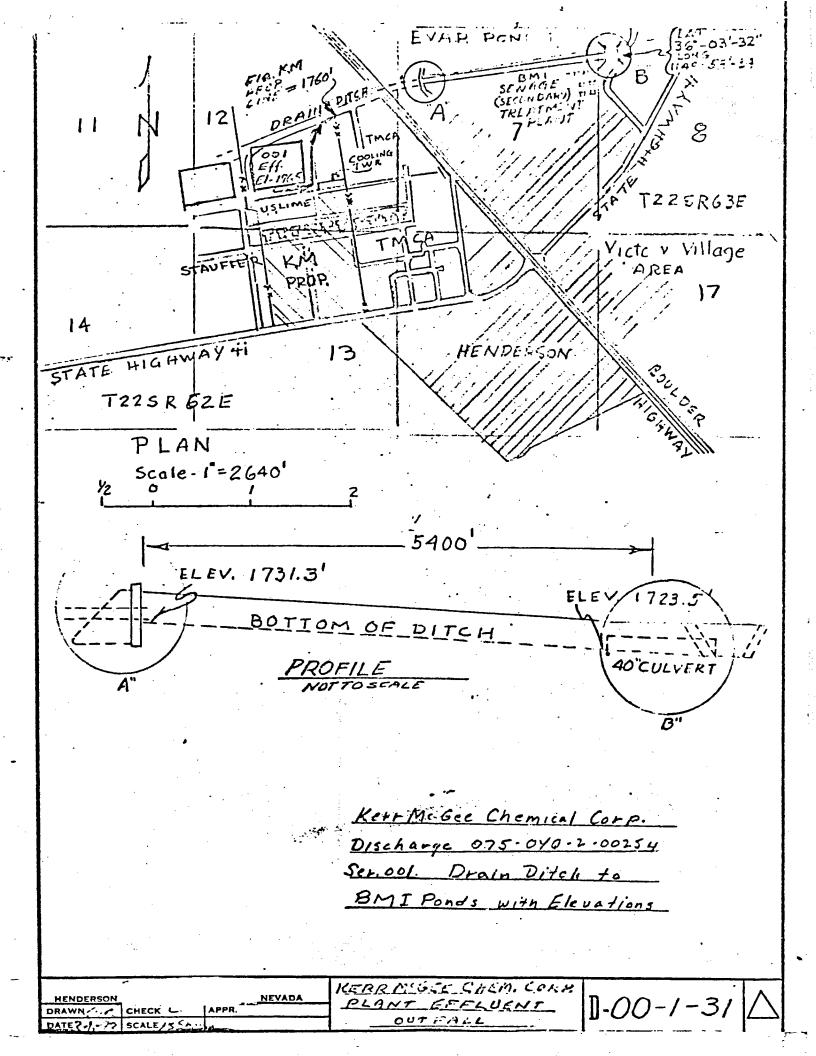
ADDITIONAL INSTRUCTIONS FOR SELECTED ITEMS APPEAR IN SEPARATE INSTRUCTION BOOKLET AS INDICATED. REFER TO

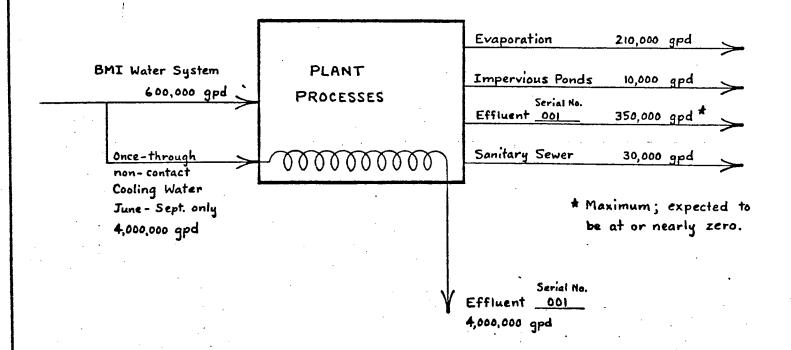
800	KLET BEFORE FILLING OUT THE	, , , , , , , , , , , , , , , , , , ,	Please Print or Type
_	Legal Name of Applicant	101	KERR-McGEE CHEMICAL CORPORATION
1.	(see instructions)		
1	Mailing Address of Applicant		
2.	(see instructions) Number & Street	1022	McGee Tower
	City	102b	Oklahoma City
	State	1020	Oklahoma
	Zip Code	102d	73102
3.	Applicant's Authorized Agent		C. D. Armstrons, Dlant Managan
	(see instructions) Name and Title	103a	C. B. Armstrong, Plant Manager
	Number & Street Address	103b	P. O. Box 55
	City	1035	Henderson
	State	103d	Nevada
	Zip Code	103:	89015
	Telephone	1031	702 565-8901 Area Number
4.	Previous Application If a previous application for a		Code
	National or Federal discharge per- mit has been made, give the date		71 10 5
	of application. Use numeric designation for date.	104	YR MO DAY
		nation cont	tained in this application and that to the best of my knowledge and belief such information
is t	rue, complete, and accurate.		Die A Menagen
	C. B. Armstrong		Plant Manager
	Printed Name of Person	Signing	ort C2
	100		YR MO DAY
	6 Strongle	:n9	1921
	Signature of Applicant or Au	unorized Ag	gent Date Application Signed

18 U.S.C. Section 1001 provides that:

Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly and wilfully falsifies, conceals or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statement or representation, or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than \$10,000 or imprisoned not more than five years, or both.

the categories b	cility according to clow. Estimate per day in thousand							R AGENCY USE
Sanitary wastev		Disc	ber of harge ints		Year Arour Total Volume or Discharge Thousand Gal	Used d,		itional e - Septemb
		100a1		10942	NA			NA
	vater transport .	10951		10952	<u>NA</u>	 .		NA
Storm water tra	ansport system	1CDc1	 .	10962	NA	 .		NA
Combined sanit water transport		10941		10942	NA			NA
Surface impour	ndment with no	10901	1_	10062	10			
Underground p	ercolation	10911	1_	10912	350		4,0	000
Well Injection		10001		10092	NA NA			NA
Waste acceptan	ce firm	309h1]	109h2	30			NA
Evaporation		10911		10912	210	_		NA
-	•			Life 1	NA			NA
Consumption		109/1	·	109J2	NA			NA
Other* Facility discha Total Item 9.	rges and volume	10911	3	10912	600		4,	000
*If there are di				1 miles				
specify.	ischarges to 'Other,'	109m1		NA	· · · · · · · · · · · · · · · · · · ·	- 		······································
Permits, Licen	scharges to "other," ses and Applications g, pending or denied pe	h : 1	d applic		ted to discharge	s from this facill	ity (see instruction	ons).
Permits, Licen	ses and Applications g, pending or denied po	h : 1	1		ted to discharge Date Filed YR/MO/DA	s from this facili Date Issued YR/MO/DA	ty (see instruction Date Denied YR/MO/DA	Expiration Date YR/MO/DA
Permits, Licen List all existing	ses and Applications g, pending or denied po For Agency Use	Type of Permit	IDN	ations rela	Date Filed	Date Issued	Date Denied	Expiration Date
Permits, Licen- List all existing Issuing Agency	ses and Applications g, pending or denied po For Agency Use	Type of Permit or License	IDN	ations relations	Date Filed YR/MO/DA	Date Issued YR/MO/DA	Date Denied YR/MO/DA	Expiration Date YR/MO/DA
Permits, Licentist all existing Agency	ses and Applications g, pending or denied po For Agency Use	Type of Permit or License	IDN	ations relations relations	Date Filed YR/MO/DA	Date Issued YR/MO/DA	Date Denied YR/MO/DA (9) NA	Expiration Date YR/MO/DA (h)
Permits, Licentist all existing Agency	ses and Applications g, pending or denied po For Agency Use	Type of Permit or License	IDN	ations relations relations	Date Filed YR/MO/DA	Date Issued YR/MO/DA	Date Denied YR/MO/DA	Expiration Date YR/MO/DA (h) 75/1/31
Permits, Licentist all existing Agency	ses and Applications g, pending or denied po For Agency Use	Type of Permit or License	IDN	ations relations relations	Date Filed YR/MO/DA	Date Issued YR/MO/DA	Date Denied YR/MO/DA (9) NA	Expiration Date YR/MO/DA (h) 75/1/31
Permits, Licentist all existing Agency	ses and Applications g, pending or denied po For Agency Use	Type of Permit or License	IDN	ations relations relations	Date Filed YR/MO/DA	Date Issued YR/MO/DA	Date Denied YR/MO/DA (9) NA	Expiration Date YR/MO/DA (h) 75/1/31





	KERR-McC	GEE CHEMICAL CORP. HENDERSON, NEVADA	
ENGR. K.D. Heine	JOB NO.		DRWG. NO.
SCALE	A.F.E.	WATER FLOW SCHEMATIC	
DATE 8-12-74	APP.		p.l of l

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

FOR	AGE	NCY	USE

SECTION II. BASIC DISCHARGE DESCRIPTION

Complete this section for each discharge indicated in Section I, Item 9, that is to surface waters. This includes discharges to municipal sewerage systems in which the wastewater does not go through a treatment works prior to being discharged to surface waters. Discharges to wells must be described where there are also discharges to surface waters from this facility. SEPARATE DESCRIPTIONS OF EACH DISCHARGE ARE REQUIRED EVEN IF SEVERAL DISCHARGES ORIGINATE IN THE SAME FACILITY. All values for an existing discharge should be representative of the twelve previous months of operation. If this is a proposed discharge, values should reflect best engineering estimates.

ADDITIONAL INSTRUCTIONS FOR SELECTED ITEMS APPEAR IN SEPARATE INSTRUCTION BOOKLET AS INDICATED. REFER TO BOOKLET BEFORE FILLING OUT THESE ITEMS.

1.	Discharge Serial No. and Name	001
	a. Discharge Serial No. (see Instructions)	113
	b. Discharge Name Give name of discharge, if any. (see instructions)	Unnamed drainage ditch to BHI ponds
	c. Previous Discharge Serial No. If previous permit application was made for this discharge (see Item 4, Section I), provide previous discharge serial number.	ne <u>NA</u>
2.	Discharge Operating Dates	
	a. Discharge Began Date If the discharge described below is in operation, give the date (within best estimate) the discharge began.	92* 46 - YR MO
	b. Discharge to Begin Date If the discharge has never occurred but is planned for some future date, give the date (within best estimate) the discharge will begin.	NA NO NO
	c. Discharge to End Date If discharge is scheduled to be discontinued within the next 5 years, give the date (within best estimate) the discharge will end.	77 12 (For once through noncontact cooling water) 75 12 (For process effluent)
3.	Engineering Report Available Check if an engineering report is available to reviewing agency upon request. (see instructions)	Q3
4.	Discharge Location Name the political boundaries within which the point of discharge is located.	Agency Use Nevada
	State	Z046
	County	04b Clark 204e
-	(if applicable) City or Town	104¢ NA 204f
5.	Discharge Point Description Discharge is into (check one); (see instructions)	
	Stream (includes ditches, arroyos, and other intermittent watercourses)	2052 ☐STR
	Lake	
	Ocean	□oce ·
	Municipal Sanitary Wastewater Transport System	□мтs
	Municipal Combined Sanitary and Storm Transport System	□mcs

	Municipal Storm Water Transport System	□STS
	Well (Injection)	□ WEL
	Other	₩отн
	If 'other' is checked, specify 2055	Combination evaporation and percolation ponds
6.	Discharge Point — Lat/Long Give the precise location of the point of discharge to the nearest second.	36 DEG 03 MIN 32 SEC
	Latitude 206a	<u> </u>
	Longitude 205t	114 DEG 58 MIN 34 SEC
7.	Oischarge Receiving Water Name Name the waterway at the point of discharge.(see instructions)	BMI ponds near Las Vegas Valley drainage to Lake Mead
fali line	the discharge is through an out- that extends beyond the shore- tor is below the mean low ter line, complete Item 8.	For Agency Use Major Minor Sub 207c For Agency Use 303e
8.	Offshore Discharge	
	a. Discharge Distance from Shore 208:	NAfeet
	b. Discharge Depth Below Water Surface 208	NAfeet
9.	Discharge Type and Occurrence	
	a. Type of Discharge Check whether the discharge is continuous or intermittent. (see instructions)	☐ (int) Intermittent
	b. Discharge Occurrence Days per Week Enter the average num- ber of days per week (during periods of discharge) this dis-	Z_days per week
	charge occurs.	
	c. Discharge Occurrence —Months If this discharge normally operates (either intermittently, or continuously) on less than a year-around basis (excluding shutdowns for routine mainte-	☐JAN ☐FEB ☐MAR ☐APR The summer use of noncontact cooling water will be from Jun through September at a rate of 4,000,000 gallons per day.
	nance), check the months dur- ing the year when the discharge	7,000,000 garrons per day,
	is operating. (see instructions)	
m	omplete Items 10 and 11 if "inter- ittent" is checked in Item 9.a. therwise, proceed to Item 12.	
10	Intermittent Discharge Quantity State the average volume per dis- 210	NAthousand gallons per discharge occurrence.
	State the average volume per discharge occurrence in thousands of gallons.	thousand gamons per discharge occurrence.
\$1	Intermittent Discharge Duration and Frequency	
	a. Intermittent Discharge Duration Per Day State the average number of hours per day the discharge is operating.	NA hours per day
	b. Intermittent Discharge Frequency State the average number of discharge occur- rences per day during days when discharging.	NA_discharge occurrences per day

11.7

12. Maximum Flow Period Give the time period in which the maximum flow of this discharge occurs.

EPA Form 7550-23 (7-73)

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13. Activity Description Give a narrative description of activity producing this discharge-(see instructions)

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	e.	ċ	24.	

Production of various chlorates and perchlorates by
electrolysis and subsequent double decomposition.
Electrolytic production of battery active manganese
dioxide.
•
•

14. Activity Causing Discharge For each SIC Code which describes the activity causing this discharge, supply the type and maximum amount of either the raw material consumed (Item 14a) or the product produced (Item 14b) in the units specified in Table I of the Instruction Booklet. For SIC Codes not listed in Table I, use raw material or production units normally used for measuring production.(see instructions)

a. Raw Materials

	SIC Code	Name	Maximum Amount/Day	Unit (See Table I)	Shared Discharges (Serial Number)
2144	<u>(1)</u> 2819	NaC1	(3) 52	(4) K-1	(5) NA
	2819	NH3	9	K-1	NA NA
	2819	31% HC1	33	K-1	NA
	2819	MnO ₂ Ore	55	K-1	NA

	SIC Code	Name	Maximum Amount/Day	Unit (See Table I)	Shared Discharges (Serial Number)
2140	(1)	(2)	(3)	(4)	(5)
	NA				
			· · · · · · · · · · · · · · · · · · ·		
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15. Waste Abatement

a. Waste Abatement Practices

Describe the waste abatement practices used on this discharge with a brief narrative. (see instructions)

b. Waste Abatement Codes
Using the codes listed in Table
II of the Instruction Booklet,
describe the waste abatement
processes for this discharge in
the order in which they occur
If possible.

215a	Narrative: The following practices are routinely followed:									
	1. Washing of	filter cakes to remove soluble material.								
	2. Ponding of	effluents for evaporation								
	3. Use of rec	irculated cooling water.								
	4. Use of mechanical seal pumps.									
	5. Reuse of b	yproducts as raw materials								
Z155	(1) ESEGRE	. (2) EMERGE (3) ECOUNT								
	(4) EPUMPS	, (5) DREACT (6) DSTUPD								
	(7) RECOVE	, (8) RDOWNG (9) RUSFOR ,								
	(10) RECYCL	, (11) <u>OMONIT</u> , (12),								
	(13)	, (14), (15),								
	(16)									
	(19)									
		, (23), (24),								
	(25)	•								

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FOR AGENCY USE										

16. Wastewater Characteristics

Check the box beside each constituent which is present in the effluent (discharge water). This determination is to be based on actual analysis or best estimate. (see instructions)

Parameter 216	Present	Parameter 216	Present
Color 00080	x	Copper 01042	Х
Ammonia 00610		Iron 01045	
Organic nitrogen 00605		Lead 01051	Х
Nitrate 00620		Magnesium 00927	х
Nitrite 00615		Manganese 01055	Х
Phosphorus	Х	Mercury 71900	
Sulfate 00945	Х	Molybdenum 01062	χ.
Sulfide 00745	Х	Nickel 01067	
Sulfite 00740		Selenium 01147	
Bromide 71870		Silver 01077	
Chloride 00940	Х	Potassium 00937	Х
Cyanide 00720		Sodium 00929	Х
Fluoride 00951		Thallium 01059	
Aluminum 01105	Х	Titanium 01152	
Antimony 01097		Tin 01102	
Arsenic 01002		Zinc 01092	Х
Beryllium 01012		Algicides* 74051	
Barium 01007		Chlorinated organic compounds* 74052	
Boron 01022	¥ .	Pesticides* 74053	
Cadmium 01027	. X	Oil and grease 00550	
Calcium 00916	X	Phenols 32730	
Cobalt 01037		Surfactants 38260	
Chromium 01034	X	Chlorine)
Fecal coliform bacteria 74055		Radioactivity* 74050	

^{*}Specify substances, compounds and/or elements in Item 26.

Pesticides (insecticides, fungicides, and rodenticides) must be reported in terms of the acceptable common names specified in Acceptable Common Names and Chemical Names for the Ingredient Statement on Pesticide Labels, 2nd Edition, Environmental Protection Agency, Washington, D.C. 20250, June 1972, as required by Subsection 162.7(b) of the Regulations for the Enforcement of the Federal Insecticide, Fungicide, and Rodenticide Act.

DISCHARGE SERIAL NUMBER

001

F	FOR AGENCY USE										

17. Description of Intake and Discharge

For each of the parameters listed below, enter in the appropriate box the value or code letter answer called for (see instructions)

In addition, enter the parameter name and code and all required values for any of the following parameters if they were checked in Item 16; ammonia, cyanide, aluminum, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, phenois, oil and grease, and chlorine (residual).

	Influent				Effluent			
Parameter and Code	Untreated Intake (I) Water (Daily Average)	In-Plant Treated (Daily Average)	© Daily Average	Minimum Value Observed or Expected During Discharge Activity	Maximum Value Observed or Expected During Discharge Activity	Frequency of Analysis	Number of Analyses	® Sample Type
Flow* Gallons per day 00056	600,000	N A	350,000	0	4,350,000	1/1	365	2 4
pH Units 00400	8	NA		6	10	1/1	365	24
Temperature (winter) F 74028	55	NA	65	60	70	None	NA	NA
Temperature (summer) F 74027	65	NA	75	70	80	None	NA	NA
Biochemical Oxygen Demand (BOD 5-day) mg/l 00310	A	NA	A	A	A	NA	NA	NA
Chemical Oxygen Demand (COD) mg/1 00340	24	NA	22	15	30	None	NA	NA
Total Suspended (nonfilterable) Solids mg/l 00530	4	NA	150	100	300	None	NA	NA
Specific Conductance micromhos/cm at 25° C @ 995			U	NDET	ERMIN	E D		-
Settleable Matter (residue) ml/1 00545			U	NDET	ERMIN	E D		-

^{*}Other discharges sharing intake flow (serial numbers).(see instructions)

FOR AGENCY USE										

17. (Cont'd.)

		Influ	ient			Effluent			
Parameter and Code	Untreated Intake Water (Daily Average)	In-Plant Treated Suntake Water (Daily Average)	© Daily Average	Minimum Value * Observed or Expected During Discharge Activity	** Maximum Value Cobserved or Expected During Discharge Activity	Frequency of Analysis	S Number of Analyses	® Sample Type	
Aluminum u g/l	01105	25	NA	60	25	100	None	NA	NA
Cadmium u g/l	01027	12	NA	60	12	100	None	NA	NA
Chromium u g/1	01034	8	NA	60	8 .	6,000	None	NA	NA
Copper u g/1	01042	100	NA	150	100	200	None	NA	NA
Lead u g/l	01051	200	NA	200	150	250	None	NA	NA
Zinc u g/l	01092	12,000	NA	24,000	12,000	36,000	None	NA	NA
			L	1	<u> </u>		1	1	$oxed{oxed}$

* With cooling water only.
** With process water only.

18.	Plant Controls Check if the fol- lowing plant controls are available for this discharge.	218								. ·
	Alternate power source for major pumping facility.		☐ APS	NA						
	Alarm or emergency procedure for power or equipment failure		ALM	•	•			٠.,		
	Complete Item 19 if discharge is from cooling and/or steam water generation and water treatment additives are used.			•				•		:
19.	Water Treatment Additives If the discharge is treated with any conditioner, inhibitor, or algicide, answer the following:			NA						
	a. Name of Material(s)	219a			.				·	
							· · · · · · · · ·			
	b. Name and address of manu- facturer	219b		·	•		<u>.</u>		 	
				-						
	•					· · · · · · · · · · · · · · · · · · ·				
	 Quantity (pounds added per million gallons of water treated). 	21 9 c]							

-		•	•
	nn	1	l

F	FOR AGENCY USE								
		\prod				Γ.			

Chemical composition of ti	
additives (see instructions).	

2194

220

NA

Complete Items 20-25 if there is a thermal discharge (e.g., associated with a steam and/or power generation plant, steel mill, petroleum refinery, or any other manufacturing process) and the total discharge flow is 10 million gallons per day or more. (see instructions)

20. Thermal Discharge Source Check the appropriate item(s) indicating the source of the discharge. (see instructions)

Boiler, Blowdown

Boiler Chemical Cleaning

Ash Pond Overflow

Boiler Water Treatment - Evaporator Blowdown

Oil or Coal Fired Plants — Effluent from Air Pollution Control Devices

Condense Cooling Water

Cooling Tower Blowdown

Manufacturing Process

Other

21. Discharge/Receiving Water Temperature Difference

> Give the maximum temperature difference between the discharge and receiving waters for summer and winter operating conditions. (see instructions)

Summer

Winter

22. Discharge Temperature, Rate of Change Per Hour

> Give the maximum possible rate of temperature change per hour of discharge under operating conditions. (see instructions)

23. Water Temperature, Percentile Report (Frequency of Occurrence) In the table below, enter the temperature which is exceeded 10% of the year, 5% of the year, 1% of the year and not at all (maximum

yearly temperature). (see instructions) Frequency of occurrence

- a. Intake Water Temperature (Subject to natural changes)
- b. Discharge Water Temperature
- 24. Water Intake Velocity (see instructions)
- 25. Retention Time Give the length of time, in minutes, from start of water temperature rise to discharge of cooling water. (see instructions)

BCCL

□APOF □ EPBD

NA

OCFP

☐ COND

□ ство MFPR

□ OTHR

۰F. 2211 NA 221b

222

224

225

°F.

NA ^OF./hour

5% 1% Maximum 10% ٥F ٥F o_F o_F 2232 ٥F ٥F ٥F ٥F 223b

NA

feet/sec.

NA ,minutes

II-8

BISCHARREE SERMAL NUMBER

001

FOR AGENCY USE							
1	1	1	1	1	1	1	

26. Additional Information

2226

item	Information
	NA
	•
	•
<u></u>	

FOR A	٩G	E١	IC.	YI	JS	E
				100		

FOR AGENCY USE

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

SECTION III. WASTE ABATEMENT REQUIREMENTS & IMPLEMENTATION (CONSTRUCTION) SCHEDULE

This section requires information on any uncompleted implementation schedule which may have been imposed for construction of waste abatement facilities. Such requirements and implementation schedules may have been established by local, State, or Federal agencies or by court action. In addition to completing the following items, a copy of an official implementation schedule should be attached to this application. IF YOU ARE SUBJECT TO SEVERAL DIFFERENT IMPLEMENTATION SCHEDULES, EITHER BECAUSE OF DIFFERENT LEVELS OF AUTHORITY IMPOSING DIFFERENT SCHEDULES (Item 1a.) AND/OR STAGED CONSTRUCTION OF SEPARATE OPERATION UNITS (Item 1c), SUBMIT A SEPARATE SECTION III FOR EACH ONE.

Improvements	300		SCHED, NO.	
a. Discharge Serial Number Affected List the discharge serial numbers, assigned in Section II, that are covered by this implementation schedule.	30 ta	001		
b. Authority imposing Requirements Check the appropriate item indicating the authority for implementation schedule. If the identical implementation schedule has been ordered by more than one authority, check the appropriate items. (see instructions)				· .
Locally developed plan	3015	Loc		**
Areawide Plan		□ARE		
Basic Plan		□BAS		
State approved implementa- tion schedule		□sqs		,
Federal approved water quality standards implementa- tion plan.		⊠wqs		
Federal enforcement proced- ure or action		□ENF		
State court order		□CRT		
Federal court order		□ FED	4	
c. Facility Requirement. Specify the 3-character code of those listed below that best describes in general terms the require-		3-character (general)		•
ment of the implementation schedule and the applicable six- character abatement code(s)	3016	ELI		
from Table II of the Instruction booklet. If more than one schedule applies to the facility because of a staged construction schedule, state the stage of con-	3014	6-character (specific) (see Table II)		
struction being described here with the appropriate general action code. Submit a separate Section III for each stage of construction planned.		DSTOPD		

New Facility	NEW
Modification (no increase in capacity or treatment)	MOD
Increase in Capacity	INC
Increase in Treatment Level	INT
Both increase in Treatment Level and Capacity	ICT
Process Change	PRO
Flimination of Discharge	ELI

FO	R AG	ENC	Υl	JSE

2. Implementation Schedule and 3. Actual Completion Dates

Provide dates imposed by schedule and any actual dates of completion for implementation steps listed below. Indicate dates as accurately as possible. (see instructions)

Implementation Steps

- a. Preliminary plan complete
- b. Final plan submission
- c. Final plan complete
- d. Financing complete & contract awarded
- . Site acquired
- f. Begin action (e.g., construction)
- g. End action (e.g., construction)
- h. Discharge Began
- L Operational level attained

2. Schedule (Yr./Mo./Day)

3024	6	, 23	
302b	6	<u>, 23</u>	72
3020	_8_	,15	, 74
302d		NA	/
302e		, NA	/
302f	10	<u>,1 </u>	<u>, 73</u>
3029	12	<u>,31</u>	<u>, 74</u>
302h		NA	./
3021	1	,31	, 75
	ļ		

3. Actual Completion (Yr./Mo./Day)

303a	5 , 26 , 72
303b	5 ,26 ,72
303c	9,1,74
303d	, <u>NA</u>
30 3 6	
303f	10 , 1 , 73
3039	12 ,31 ,74
302h	,NA
3031	12 ,31 ,75
V.V.V.V.V.V.V.V.V.V.V.V.V.V.V.V.V.V.V.	

RERE MCGEE BUILDING . OKLAHOMA CITY, OKLAHOMA 73102

October 5, 1971

District Engineer
Department of the Army
Los Angeles District, Corps of Engineers
P. O. Box 2711
Los Angeles, California 90053

Re: Discharge Permit Application NV 075-0YQ-2-000254 Discharge Serial No. 001

Dear Sir;

Forwarded herewith is part B of the above captioned water discharge permit application covering the Kerr-McGee Chemical Corp. facility at Henderson, Nevada, together with a certification statement.

Data are not yet complete for some of the required parameters. These will be submitted as soon as they are available.

Please contact me for permit application coordination and any additional information that you may need.

Very truly yours,

7214

T. L. Hurst Director of Environmental Services

TLH:j1 Enclosures 2

bcc: C. B. Armstrong w/a - Henderson

M. C. Locke w/a

KERR-McGEE CORPORATION

INTERNAL CORRESPONDENCE



TO A. L. Anderson

DATE

May 17, 1979

FROM

R. E. Harris

SUBJECT ·

Analysis of Henderson Plant

EIMCO Tails for RCRA Leach

Test; Project 1526

This is to confirm the results given to you today by Wil Robertson in a preliminary report. The sample of EIMCO tails submitted with your memo of March 5, 1979 to Dr. Long has been analyzed according to the RCRA extraction procedure given in Fed. Register 43 No. 243, December 18, 1978, pp. 58956 and 58957. The organics were assayed by ARRO Laboratories in Joliet, Illinois.

As can be seen in the attached table of results, all of the values are well below the RCRA Limit except Cd and it is 1/2 the limit. On this basis the sample of material sent to us would not be considered a hazardous waste on the basis of toxic substances as defined in Section 250.13(d) of the proposed regulations.

R. E. Harris

REH/nvb

Attachment

cc: C. H. Long

TABLE I

EXTRACTION PROCEDURE EXTRACT

Section 250.13(f)

Extract: Solid Ratio = 20:1 (wt.)

	Sple 2/24 to 2/28/79	RCRA Limit
As	0.007 mg/1	0.50 mg/1
Ba	0.021	10.0
Cd	0.049	0.10
Cr	0.002	0.50
Pb	0.002	0.50
Нg	<.001	0.02
Se	0.012	0.10
Ag	<.001	0.50
Endrin	<.001	0.002
Lindane	<.001	0.040
Methoxychlor	<.001	1.0
Toxaphene	<.001	0.050
2,4-D	<.001	1.0
2,4,5-TP	<.001	0.1

P.O. Box 686 Caton Farm Road Joliet, Illinois 60434 Telephone (815) 727-5436 Telex 723421 UAR JOL

Attention of Mr. D.G. Biechler	P.O. Number
Company Kerr McGee Corporation	Date Received March 22, 1979
Company NETT. 1446 MES. WATHOUGH	Date Completed April 11, 1979
Address P.O. Box 25861	
City/State/Zip Oklahoma City, OK 73125	************

ARRO NO.	SAMPLE DESCRIPTION	ARRO PICK-UP	ARRO SAMPLING	DATE
42746E	552-REH-1-147 Le	achate		3/22

WASTE WATER ANALYSIS

	42746	1	1	1
	12.13			
BOD, 5-day				
Cadmium				
COD				
Chlorides				
Chlorine, Total Residual				
Chromium, Hex				
Chromium, Tri				
Chromium, Total				
Copper				
Cyanide, Total				
Iron, Total				
Lead				
Nitrogen, Total as N				
Nitrogen, Ammonia as N				
Nitrogen, Organic as N				
Oils & Grease				
рн				<u> </u>
Phenols	(
Phosphate, Total (as PO4)				
Phosphorus (as P)				
Solids, Total				<u> </u>
Solids,Dissolved				
Solids, Total Suspended				
Solids, Volatile Suspended				
Sulfate (as SO ₄)				
Zinc				
Endrin	<0.1 ppB			
Lindane	< 0.1 nnB			
Methoxychlor	<0.1 ppB			
Toxaphene	<0.1 ppB			ļ
2.4-D	<0.1 ppB			<u> </u>
2,4,5-TP	<0.1 ppB			ļ
				<u> </u>
	SAMPLE COLLECTION D	ATA		
Type of Sampling				



STATE OF NEVADA

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES DIVISION OF ENVIRONMENTAL PROTECTION

CAPITOL COMPLEX
CARSON CITY, NEVADA 89710

February 23, 1979

PURCES (10)

TELEPHONE (702) 885-4670

Mr. C. B. Armstrong Kerr McGee Chemical Company P.O. Box 55 Henderson, NV 89015

RE: Kerr McGee Chemical Company NPDES Permit No. NV000078

Dear Mr. Armstrong:

The enclosed <u>Order</u> is issued by the Administrator of the Division of Environmental Protection pursuant to Nevada Revised Statutes (NRS) Chapter 445.214 Section 1, 2, 3, 7, and 12 and in accordance with NRS 445.307, NRS 445.317 subsection 1(a) and NRS 445.324.

The Order is requesting that you provide certain information on the lined and unlined impoundments on your property.

Your cooperation with the State in providing this information is appreciated. Should you have any questions, please call at 885-4670.

Sincerely,

W. Marvin Tebeau

Environmental Scientist

gc

cc: Greg Fischer E-5-2
EPA, Region IX

IN THE MATTER OF)
Kerr McGee Chemical Company)
NV000078)

ORDER

The following Order is issued this date pursuant to the powers and duties vested in the Director by Nevada Revised Statutes (NRS) Chapter 445.214 subsection 1, 2, 3, 7 and 12 and in accordance with NRS 445.307 and NRS 445.317, subsection 1(a) and NRS 445.324.

In the recent past the Division of Environmental Protection has sampled discharges of process waste at the BMI siphon prior to entering the upper BMI ponds and in the influent domestic waste at the Henderson treatment plant.

In order for the Division of Environmental Protection to develop and administer a compreshensive plan and program for preventing, reducing or eliminating these discharges and their subsequent impact on the ground water and surface water of the State, your cooperation is needed in providing certain information on the lined and unlined ponds and the process waste they recieve.

On the basis of the findings listed above the Administrator of the Division of Environmental Protection requires Kerr McGee Chemical Company to provide the following information by March 26, 1979.

LINED AND UNLINED IMPOUNDMENT DATA

- I. Depict on a USGS map or provide a drawing of:
 - Impoundments in relation to the plant
 - Piping schematic of the process waste from the production areas to the impoundment
 - c. Any monitoring well on your property

- II. Concerning each impoundment provide information on:
 - a. Type of liner used, if clay give thickness
 - b. Surface area
 - c. Volume
 - d. Name of process waste and daily average volume being stored or disposed of
 - e. Is the impoundment presently in use, if not last year of operation and age
- III. Concerning each monitoring well:
 - a. Depth to ground water if known
 - b. Frequency of sampling and copy of any analysis of the ground water
 - c. Copy of any well logs or test hole logs taken in the immediate area if available.

DATED 7-27-79

E.G. Gregory, Administrator

Division of Environmental Protection

March 22, 1979

Mr. W. Marvin Tebeau, Environmental Scientist State of Nevada Department of Conservation and Natural Resources Division of Environmental Protection Capitol Complex Carson City, NV 89710

Reference: NPDES Permit No. NV0000078

Dear Mr. Tebeau:

In accordance with your letter of February 23, 1979. the following are attached:

- A listing of our ponds with the questions in Item II of the request answered. The answers are designated by the same letter as the subquestions under Item II.
- A drawing of the BMI Complex with the ponds and the pipelines to them superimposed in color.

We do not have any monitoring wells.

I believe this completes the requirements of the order. If you require any other information, please contact me.

Sincerely,

C. B. Armstrong

Plant Manager

CBA: jc

Attachments

WBHayes/RJVreeland-OKC bcc:

TLHurst-OKC RFWohletz

DATA ON LINED PONDS

POND C-1

- a. Liner PVC bottom, reinforced butyl side
- b. Surface area 69,000 ft.²
- c. Volume 415,000 ft.³
- d. Process waste and average volume:

Boiler house wastes - 4,000 gallons/day

Main cooling tower waste) - 15,000 gallons/day

Cleaning liquor waste - 1,500 gallons/day

e. Impoundment currently in use.

POND AP-1

- a. Liner PVC bottom, CPE side
- b. Surface area 14,000 ft.²
- c. Volume 58,000 ft.³
- d. Sodium perchlorate purification and ammonium perchlorate process purification filter wash liquor; total recycle; no addition other than that required to maintain volume.
- e. Impoundment currently in use.

POND AP-2

Same as Pond AP-1

POND AP-3

- a. Liner PVC
- b. Surface area 2,000 ft.²
- c. Volume 6,500 ft.³
- d. Pump basin for AP-1 and AP-2. No flow.
- e. Impoundment currently in use.

POND AP-4

- a. Liner PVC bottom, CPE side
- b. Surface area 20,000 ft.²
- c. Volume 115,000 ft.³
- d. Ammonium perchlorate cooling tower waste; emergency only. Salt crystallizer washout 500 gallons/day.
- e. Impoundment currently in use.

DATA ON LINED PONDS Page 2 March 19, 1979

POND P-1

- a. Liner PVC bottom, CPE side
- b. Surface area 26,000 ft.2
- c. Volume 125,000 ft.³
- d. No process waste at this time.
- e. Impoundment abandoned July, 1975.

POND P-2

- a. Liner reinforced butyl rubber
- b. Surface area 12,000 ft.²
- c. Volume 47,000 ft.³
- d. Process waste: sodium chlorate solution; this pond for emergency use only, and all solution is recycled. Caustic scrubber solution from ammonium perchlorate plant 500 gallons/day.
- e. Impoundment currently in use.

POND P-3

- a. Liner reinforced butyl rubber
- b. Surface area 12,000 ft.²
- c. Volume $47,000 \text{ ft.}^3$
- d. Process waste: sodium chlorate solution; this pond for emergency use only, and all solution is recycled. No regular flows to pond.
- e. Impoundment currently in use.

POND S-1

- a. Liner PVC bottom, CPE side
- b. Surface area 47,500 ft.2
- c. Volume $270,000 \text{ ft.}^3$
- d. Process waste: potassium perchlorate process tailings 5,000 gallons/day; boron leach liquor 1,000 gallons/day.
- e. Impoundment currently in use.

FORM A: GENERAL FACILITY INFORMATION

Спиць	any Name: _	Kerr-McGee Corporation
Divi Faci	Stur /Subsidia lity Name:	'y Kerr-McGee Chemical Corporation, Henderson Plant
Addr		P. O. Box 55
	_	No. Street
		Henderson, NV 89015
		City State Zip Code
Name	of Person	Completing Form: R. B. Chase
Posi	tion: Ma	nager, Production
Phon	e Number: _	(702) 565-8901
1.	Year Facili	ty Opened
		C Code
3.	1 J E	ne total amounts of process wastes (excluding wastes se) generated by this facility during 1978:
	use only.	tik if possible right justify response thousand gallons
		hundred tons
		thousand cubic yards
4.	Estimate (in whole percents) how these process wastes in 1978 were disposed of:
	generates .	in landfill
		in pit/pond/lagoon
		in deep well
		incinerated
		reprocessed/recycled
		evaporated
		unknown
		other (Specify)[1]0](63-65)
5.	property w	the total number of known sites (including disposal on the where this facility is located as one site) that have been the disposal of process wastes from this facility since
		ONE FORM "B" FOR EACH OF THE SITES
6.	Have any o	of the process wastes generated at this facility been emoved) from this facility for disposal? (Yes=1; no=2)
	IF YES,	COMPLETE FORM "C"
7.	hauled fro	the disposal site locations of all of the process waste om your facility since 1950? (Yes=1; no=2)
	OOT OHW	COMPLETE ONE FORM "ID" FOR EACH FIRM OR CONTRACTOR (WASTE TO AN UNKNOWN LOCATION
	or facilit	ne earliest year represented by information from company ty records supplied on this and other forms
9.	Specify the knowledge	he earliest year represented by information from employee

(DO NOT USE) (1-8)

COMPLETE THIS FORM FOR EVERY SITE (INCLUDING THE LOCATION OF THIS FACILITY AS ONE SITE) USED FOR THE DISPOSAL OF PROCESS WASTES GENERATED BY THIS FACILITY SINCE 1950.

Sab Fa	ompany Name: acility Name ame of Site:	Kerr-McGee Kerr-McGee BMI Dump	Corporat Chemical	ion Corporat	ion				
Ac	dress of Si	te:							
		no.	street						
		Henderson	<u>, </u>	NV		89015			
		city		state	zip	code			
Na Ad	ume of Owner ldress:	(while used by	facility):	Basic Ma	nagement	Incorp	orated	(BMI)	
		no.	street						
	н	enderson		NV	90	0015			
		city		state	zip	0015 code			
Cu Ad	rrent Owner dress:	(if different :	from above)	·	· <u>-</u>				
		no.	street						
		city	··-	state	zip	code			
3. 4. 5.	Company ow Current st Year first Year last is still in u Total amounts right just Specify typ	l= the property at time of use nership) 3=publ atus (1= closed IF CLOSED, specused for processed for	ic ownershi ; 2= still ify year cl iss waste fro s waste from thousa hundre thousa al method(s tly in use;	in use; 9= osed om this fac m this fac his facili nd gallons d tons) used at	don't know don't know cility ility (ent ty dispose ards site and w er in use;	er "79" d at sin	19 19 if	. [2] (1; . [2] (1; . [2] (1; . [1] . [1] . [1] . [1] . [2] . [34]	1) 2) 3-14 5-16 7-18 9-26 7-33 1-41
8.	Users of the	is site (l≃this only; 3≃this co	landfi landfi pits/p deep w land f incine treatm reproce other	il, mixed ill, drummed ill, municip onds/lagoor ell injecti arming ration ent (eg. neessing/rec) (specify)	industrial d waste val refuse is eutralizing ycling	co-disp	posed	(43 (44 (47 (47 (49 (49 (50 (51 (52 (52) (52)	
		AND ADDRESSES							
	Stauffer Flintkote Montrose Jones Che Buckles (Basic Mar	enderson, NV Chemical Compar Lime Compar Chemical Compar Construction Lagement Inco	mpany, Hender mpany, Hender mpany, Hender Company, erporated,	son, NV derson, N son, NV 541 Natio Henderso	89015 W 8901 89015	5 et He	nderson,	NV.	890

FOR:	B	-	Page	P 2
rene.			Lag	

(DO NOT USE) (1-8)

Combany Name:	Kerr-McGee Corporation	 L	
company name.	Kerr Hedee Gorpotation	 L	

Facility Name: Kerr-McGee Chemical Corporation, Henderson Plant

Site Name: BMI Dump

 Components (or characteristics) of process waste from this facility disposed at site: (1-present in waste; 2-not present in waste; 9-don't know)

FILL IN EVERY BLOCK SPACE

THE IN FIGURE DECEMBER		
Acid solutions, with pH<3	121	(10)
mickling liming		(* *)
metal plating waste	21	(12)
circuit etchings	21	(13)
inorganic acid manufacture	2	(14)
organic acid manufacture	2	(15)
Base solutions, with pH>12	뒶	(16)
Base solutions, with phola	당.	(17)
caustic soda manufacture	묽	(18)
nylon and similar polymer generation	5.	(10)
scrubber residual	Ę.	(20)
U f trace metals (bonded organically & inorganically)	111	(40)
arsenic, selenium, antimony	Ž	(21)
	121	(44)
manganaca magnacitm	111	(43) -
ring cadmium conner Chromium (LTIValent)	141	(47)
chaomium (havayalant)	1 7 1	(43)
land	141	(20)
Delicative recidence Series curies/liter	121	(27)
	121	(40)
lastanide comics elements and rate earth Salts	121	(29)
mhoomhata slag	141	(30)
madism	141	(34)
alaba bata f gamma emitters	121	(33)
0	121	[34]
in a chicidae & intermediates	1 4	(55)
hashicidas E intermediates	141	(30)
Empiridae F intermediates	121	(3/)
inidar f intermediates	121	(30)
1.1and alimbetics	121	(33)
belogged oromatics	1 41	(40)
lance f lator omileions	1 4 1	(41)
non (nnn t	1 2 1	1441
· · · · · · · · · · · · · · · · · · ·	1/1	1431
plastizers	121	(44)
resins	121	(45)
elastomers	121	(46)
	121	(47)
solvents polar (except water)carbontetrachloride	121	(48)
trichloroethylene	121	(49)
other solvents nonpolar	121	(50)
solvents halogenated aliphatic	121	(51)
solvents halogenated aromatic	12	(52)
oils and oil sludges	12	(53)
esters and ethers	2	(54)
esters and ethers	2	(55)
esters and ethers alcohols	3	(56)
ketones & aldehydesdioxins	3	(57)
dioxins Inorganics	1	(58)-
Inorganics	H	(59)~
salts	15	(60)
mercaptans	۲	(61)
Misc	12	(62)
pharmaceutical wastes	15	(63)
paints & pigments	15	(64)
paints & pigments	냙	(65)
achactae	1 4	1 (02)
shock sensitive wastes (eg. nitrated toluenes)	12	(67)
air water reactive wastes (eg. Pd., aluminum chloride)	15	1 (68)
wastes with flash point below 1000 F	<u> </u>	, (00)

FORM B:	DISPOSAL	SITE	INFORMATION

Jukub.

L	L	J	1		1	1	(1-8)
	ſΙX) N	$\overline{\Omega}$	TIS	10		

OXBILETE THIS FORM FOR EVERY SITE (INCLUDING THE LOCATION OF THIS FACILITY AS ONE SITE) USED FOR THE DISPOSAL OF PROCESS WASTES GENERATED BY THIS FACILITY SINCE 1950.

Company Name:	Kerr-McGee	Corporatio:	n			
Facility Name:	Kerr-McGee (Chemical Co	orporation	, Henderso	n Plant	
Name of Site:	brit Fonds				-	
Address of Sit	·· — — — — — — — — — — — — — — — — — —				-	
		street				
	Henderson,	NA		89015		
	city	5	tate	zip code	-	
None of 0	6441			-		
Address:	(while used by fa	cility): <u>Ba</u>	sic Manage	ment Incom	porated (BMI)
,muress	no.	street			_	
	no.	street				
	Henderson,	NV 89	9015			
	city	S	tate	zip code	•	
Current Owner	(if different from	m above):	_			
Address:					•	
	no.	street			•	
	city	s	tate	zip code		
1. Location ()						
2. Ownership a	= the property or	n Which faci	lity is loc	ated; 2= off	-site)	[2] (10)
company ow	at time of use (1: mership) 3=public	- company ow	nersnip; Z=	private but	not	1
3. Current sta	tus (1= closed;	2= still in	use: 9≃don'	t know)	• • • • • • • • • • • • • • • • • • • •	[2] (11)
	r www. specir	v vear close	o .		101	(77 74
4. Year first	used for process	waste from	this facili	ty	191	in (15-16
5. Year last u	used for process	vaste from t	nis facilit	y (enter "79	"if	101 (==
SCIII III US		. 			1017	16] (17-18
use tons	it of process wast	thousand	facility d	isposed at s	ite:	
right jus	tify response.	hundred to	galions	· · · · · · · · · · · · · · · · · · ·		19-26
	J	Liousana e	CUDIC VARIOS			1/1 (2/-33
Specify typ	e(s) of disposal	me thoots: 119	SEA ST SITE	and whether	method	1-1 (24-41
15 St111 1n	use (1=currently	/ in use; 2=1	no longer in	n use; 3≕neve	er used;	
9=don't kno	w)					
		landfill,	mono indust	trial waste	• • • • • • • • • •	[3] (42)
		landrill,	mixed indus	strial waste	•••••	[3] (43)
		landfill	mmicinal	ste refuse co-dis	roced	[왕(선)
		pits/ponds	/lagoons .		sposeu	③ (45) 山 (46)
		deeb well	injection .			3 (47)
		land farmi	ing	. 		31 (48)
		incinerati	ion	. .		i 31 (49)
		treatment	(eg. neutra	lizing)		[3] (50)
		reprocessi	ng/recyclin	ng	• • • • • • • • •	ট্র (S1)
8. Users of th	is site (l=this f	other (spe acility: 2=1	his facilii	ar and other	COMMONY	<u>3</u> (52)
facilities	only; 3=this comp	any and other	rs: 9=don't	y and other	company	31 (57)
					•••••	[3] (33)
LIST NAMES	AND ADDRESSES OF	OTHER KNOWN	USERS BELC	W		
						
Timet, He	nderson, NV	89015				
Stauffer	Chemical Compa	ny, Hender	rson, NV	89015		
	Lime Company,					
City of L	Chemical Compa	Hy, Render	. 50H , NV	09013	00015	

FORM B - Page 2

Company Name: Kerr-McGee Corpor

	LL (DO N			<u></u> ∫(1-8)
ı	(DO N	OT US	E)	

acility Name:	Kerr-McGee	Chemical	Corporation,	Henderson	Plant
---------------	------------	----------	--------------	-----------	-------

Site Name: ___ BMI Ponds

 Components (or characteristics) of process waste from this facility disposed at site: (l=present in waste; 2=not present in waste; 9=don't know)

FILL IN EVERY BLOCK SPACE

Acid solutions, with pH<3	lo t	(10)	
metal plating waste circuit etchings inorganic acid manufacture	بي	(11)	
circuit etchings	بكا	(12)	
Base solutions, with pH>12	الإ	(15)	
caustic soda manufacture nylon and similar polymer generation	2	(17)	
scrubber residual	2]	(18)	
scrubber residual Heavy metals & trace metals (bonded organically & inorganically) arsenic selenim antimony	2	(19)	
arsenic selenium antimony	<u>. (1</u>	(20)	-
mercury	2)	(21)	
arsenic, selenium, antimony	ا ر2	(22)	
			-
zinc, cadmium, copper, chromium (trivalent)	2j ((24)	
chromium (hexavalent)	<u>1</u> ((25)~	-
144104CL11C 1C3144C3. 200 D1C0 CHF16C/11T6F	~ 4	0.77	
halogenated aliphatics	շյ(39)	
halogenated aromatics) ر2	40)	
acrylates & latex emulsions	2] (41)	
PCB/PBB's	2] (42)	
amides, amines, imides	2] (43)	
plastizers	2] (44)	
resins	2j (45)	
elastomers [2] solvents polar (except water) [2]	<u>u</u> (46)	
carbontetrachloride	<u>2</u> j (•	47)	
trichloroethylene	יַן נַיַּ	48)	
other solvents nonpolar	<u>د</u> ا (ب	19)	
solvents halogenated aliphatic	<u>)</u>	50)	
solvents halogenated aromatic	. (:	1)	
Misc	אַ נו	įψ	
pharmaceutical wastes	ו נס	1)	
Catalysts (eg. vanadium, platinim, palladium)		43	
wastes with flash point below 1000 F	י נפ	47	
12	1 (0	o j	

· FORM B: DISPOSAL SITE INFORMATION

Ju /50b.

COMPLETE THIS FORM FOR EVERY SITE (INCLUDING THE LOCATION OF THIS FACILITY AS ONE SITE) USED FOR THE DISPOSAL OF PROCESS WASTES GENERATED BY THIS FACILITY SINCE 1950.

Compa	any Name:	Kerr-McGee	Corporati	on		
	lity Name:	Kerr-McGee	Chemical	Corporation	on, Henderso	n Plant
	of Site:		lant Site			
Addr	ess of Site:	P. O. Box 5		Mead Dri	/e	•
	-		street			
		Henderson, 1	NV	89	9015	
		city		state	zip code	
				As Above		
Name	of Owner (w	hile used by fa	cility): _			-
Addr	ess:	no.	street			•
		110.	Stitut			
						_
	-	city		state	zip code	
Curr	ent Owner (i	f different fro	om above):	-		
Addr						•
		no.	street			
		city		state	zip code	
		,			-	
 3. 4. 6. 	Ownership at company owne Current stat IF Year first u Year last us still in use Total amount use tons credit just	time of use () rship) 3=public us (1= closed; closed, special sed for process ed for process of process was light focusible response es of disposa use (1=current	l= company c ownership 2= still fy year clo s waste from waste from thousan hundre thousan l method(s	ownership; in use; 9=do sed om this facil nis facility nd gallons i toms used at si	Z=private but KMCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	site: (19-26 (27-33 (34-41 r method
8.	facilities o	is site (l=this only; 3=this co	landfi landfi landfi pits/p deep w land f incine treatm reproc other facility;	11, mixed in 11, drummed 11, municipa onds/lagoons ell injectic arming ration ent (eg. net essing/recy (specify) 2=this fac others; 9=d	on't know)	e
	LIST NAMES	AND ADDRESSES	OF OTHER K	NOWN USERS	BELOW	

FOR4 B - Page 2	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Company Name: Kerr-McGee Corpora	(DO NOT USE) (1-8)
Facility Name: Kerr-McGee Chemical (poration, He	enderson Plant
Site Name: Plant Site	
 Components (or characteristics) of process waste from disposed at site: (1=present in waste; 2=not present in 9=don't know) 	this facility in waste;
FILL IN EVERY BLOCK SPACE	
Acid solutions, with pH<3. pickling liquor metal plating waste circuit etchings inorganic acid manufacture organic acid manufacture Base solutions, with pH>12 caustic soda manufacture nylon and similar polymer generation scrubber residual Heavy metals & trace metals (bonded organically & inorganically & ino	
arsenic, selenium, antimony	·····[1] (20)
zinc, cadmium, copper, chromium (trivalent) chromium (hexavalent)	······ [1] (23) ······ [2] (24) ····· [1] (25)
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rodenticides & intermediates halogenated aliphatics halogenated aromatics	
PCB/PBB's amides, amines, imides plastizers	
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trichloroethylene other solvents nonpolar solvents halogenated alighbatic	
oils and oil sludges esters and ethers alcohols	····· <u>[2]</u> (52) ····· <u>[2]</u> (53) ····· <u>[2]</u> (54)
dioxins	
saltsmercaptans	

dioxins	121 (57)
Inorganics	111 (58)
salts	111 (58)
mercaptans	111 (59)
Misc	121 (60)
pharmaceutical wastes	121 (62)
paints & pigments	121 (62)
catalysts (eg. vanadium, platinum, palladium)	121 (63)
asbestos	121 (65)

shock sensitive wastes (eg. nitrated toluenes) 12 (65) shock sensitive wastes (eg. P4, aluminum chloride) 12 (66) wastes with flash point below 100° F. 12 (68)

FINC: HAVEER INFONTATION

LUILLY (1-5)

PREMITE A COMPANY AND ITS AFFILIATES AND SUBSIDIARIES, USED TO REMITE PROCESS WASTES FROM THIS FACILITY STACE 1950.

Company Name:	Kerr™Me€ee	Corporate			
Division/Subsidiary: Facility Name:				Hendseson	Plant
Name of Firm or C	ont ract or	Addre	ss	ICC♥ (Uff Known)	Years Used
KenrMM@€ee	折	landerson.	NV		30



August 6, 1982

RECEIVED

AUG 9 - 1982

ENVIRONMENTAL PROTECTION

CERTIFIED MAIL NO. P26 0233706

Mr. H. Laverne Rosse Program Director - Waste Management State of Nevada Division of Environmental Protection Capitol Complex Carson City, NV 89710

Dear Mr. Rosse:

Enclosed is Kerr-McGee Chemical Corporation's first quarter 1982 RCRA groundwater monitoring data. Through an oversight, this report was not mailed to you when it was issued.

Sincerely,

C. B. Armstrong Plant Manager

CBA:jc Enclosure May 14, 1982

CERTIFIED MAIL - NO. P26 0233534 RETURN RECEIPT REQUESTED

Mr. Bill Wilson, Chief
Technical Assessment Section
Toxics and Waste Programs Branch
U. S. Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, CA 94105

Re: First Quarter 1982 RCRA Groundwater Monitoring Data

Dear Mr. Wilson:

Please find attached in Table I, first quarter 1982 RCRA groundwater monitoring data for the Kerr-McGee Chemical Corporation facility in Henderson, Nevada. This data summary is supplied in accordance with 40 CFR 265.94(2)(i).

The arsenic concentration in downgradient well H-28 exceeds the EPA National Interim Primary Drinking Water Standard (NIPDWS) of 0.05 mg/l. The NIPDWS level of 0.01 for cadmium is exceeded in all wells except downgradient well M-4, while the NIPDWS level for chromium of 0.05 mg/l is exceeded in all wells except downgradient well H-28. The silver concentration in downgradient well M-3 also exceeds the NIPDWS level of 0.05 mg/l.

Additionally, the NIPDWS gross alpha level of 15 PCI/l is exceeded in well H-28. At this time we are investigating possible causes for these exceedances. No other values exceed NIPDWS levels.

Sincerely,

C. B. Armstrong Plant Manager

CBA:jc Attachment

cc: H. L. Rosse - Certified Mail No. P26 0233706 Division of Environmental Protection Carson City, NV 89710

TABLE I

FIRST QUARTER 1982 RCRA GROUNDWATER MONITORING DATA

DRINKING WATER PARAMETERS

KERR-McGEE CHEMICAL CORPORATION Henderson, Nevada Facility

	Upgradient Well		Downgradi	ent Wells	
Parameter	M-1	M-2	M-3	M-4	H-28
Arsenic (mg/1)	0.01	0.02	0.02	<0.01	0.47
Barium	0.21	0.18	0.37	<0.12	0.08
Cadmium	0.03	0.04	0.06	0.01	0.02
Chromium	12,2	9.0	31.1	0.18	0.03
Fluoride	1.00	0.95	1.00	1.00	0.55
Lead .	<0.01	<0.01	<0.01	<0.01	<0.01
Mercury	0.001	<0.001	0.001	0.001	<0.001
Nitrate (as N)	0.91	0.45	<0.10	0.80	<0.10
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	0.04	0.05	0.06	0.02	0.02
Endrin	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Lindane	<0.004	<0.004	<0.004	<0.004	<0.004
Methoxychlor	<0.01	<0.1	<0.1	< 0.1	<0.1
Toxaphene	<0.005	<0.005	< 0.005	<0.005	<0.005
2, 4-D	<0.10	<0.10	<0.10	<0.10	<0.10
2, 4, 5-TP Silvex	<0.01	<0.01	<0.01	<0.01	<0.01
Total Radium (PCI/1)	<2	<3	<2	<2	<2
Gross Alpha (PCI/1)	<15	<15	<15	<15	81
Gross Beta (PCI/1)	<20	<20	<20	<20	<40
Coliform Bacteria (#/100 ml)	<2.2	<2.2	<2.2	<2.2	<2.2
рН	7.3, 7.3 7.3, 7.3	7.3	7.3	7.6	7.0

HzW Permit applications



July 14, 1982

CERTIFIED MAIL NO. P26 0233690

RECEIVED

JUL 1 9 1982

ENVIRONMENTAL PROTECTION

Mr. William D. Wilson, Chief Technical Assessment Section and Waste Management Division U. S. Environmental Protection Agency Region IX 215 Fremont Street San Francisco, CA 94105

Subject: Revised Part A Permit Application

Kerr-McGee Chemical Corporation

EPA ID No. NVD 008290330

Dear Mr. Wilson:

On November 14, 1982, a Part A, Application for a Hazardous Waste Permit, was filed for Kerr-McGee Chemical Corporation's (KMCC) Henderson, Nevada operations. This application was filed, based on our understanding of the RCRA regulations then in force.

In this application to EPA, KMCC identified certain units incorrectly or unnecessarily as being subject to RCRA interim status requirements. Therefore, we are submitting a Part A application revised to incorporate these changes as follows:

Form 1 - pages 1 through 3 with USGS topographical map

Form 3 - pages 1 through 5, including a revised facility drawing

These revisions amend the original Part A application and reflect the latest regulatory changes to RCRA. It is our understanding that interim status will still be in effect for this facility after these revisions.

These changes are listed below:

Mr. William D. Wilson Page 2 July 14, 1982

- 1. Capacities of existing surface impoundments, P-1 and S-1, as shown on facility diagram are hereby corrected from 960,000 to 2,660,000 gallons.
- 2. A process tank used solely for neutralization of a corrosive liquid was incorrectly listed and has been deleted in the revised permit application.
- 3. The chlorate cell vacuum filtration unit from which liquids are recycled back to the facility was incorrectly listed as a hazardous waste processing unit and has been deleted in the revised permit application.
- 4. Lined ponds P-2 and P-3 receive dilute solutions from the sodium chlorate and perchlorate electrolytic cell buildings and recycle to chlorate process. These are not within the definition of solid waste and have been deleted from the revised permit application.
- 5. Other storage ponds (AP-1, AP-2, AP-4) were reported because preliminary in-house testing indicated they might contain Cr in excess of the EP toxicity test levels. Sampling and testing by the Desert Research Institute of the liquid and sludge in those ponds determined that all eight metals were well below the EP toxicity test limits (copy, summary attached).

Please contact me if you have any questions on this subject.

Sincerely,

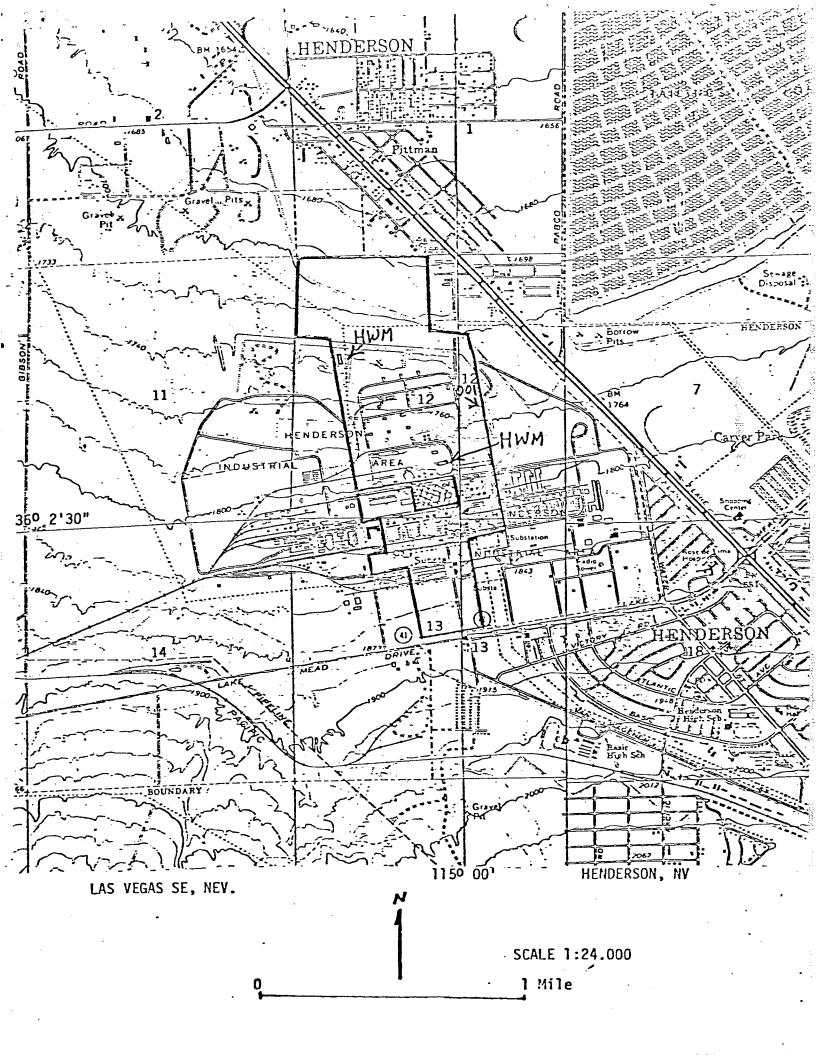
C. B. Armstrong Plant Manager

CBA: jc Attachments

xc: H. LaVerne Rosse, PE Director
Waste Management Program
Nevada Dept. of Conservation
and Natural Resources
Carson City, NV 89710

Please print or type in the una (fill—in areas are spaced for eli	te type, i.e., 12 characters/inch)				Form Ap	proved OMB No. 1	58 RO1	75	بالماسعة الأراجي
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C. Is this a facility which	currently results in discharges							V	-
A or B above? (FORM 2	odier than those describes in	22 23	24 : .: *	waters of the U.S.?	(FORM 2D)		25	2	· *270 %
E Does or will this facil	ity treat, store, or dispose of	x		municipal effluent	below the lowers	nost stratum con-	1	x	
hazardous wastes? (FOI	(M 3)		-				31	<u>,, </u>	33
G. Do you or will you inje	ct at this facility any produced			H. Do you or will you	inject at this fac	ility fluids for spe-		₩.	
in connection with con-	ventional oil or natural gas pro-:	X		cial processes such process, solution m	as mining of sultaining of mineral	fur by the Frasch s, in situ combus-		^	
oil or natural gas, or in	ject fluids for storage of liquid				or recovery of g	othermal energy?		\perp	
hydrocarbons? (FORM	4) sed stationary source which is		38.61.0	J. Is this facility a pr	oposed stationar	y source which is	1 37	***	- 390 ₆
one of the 28 industr	ial categories listed in the in-			instructions and wi	nich will potentia	illy emit 250 tons		.	
Ther Wear of any Bir	pollutant regulated under the	X	İ	Air Act and may a	ffect or be locate	d in an attainment		^	
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	ions from Proposed Sources	
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B. UIC (Underground Injection of Fluids) E. OT		wen 22 Permits Issued by
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XI. MAP		entre en en en en en en en en en en en en en
Attach to this application a topographic map of the area extending	ig to at least one mile beyond pro- d proposed intake and discharge	operty bounderies. I he map must snow structures, each of its hazardous waste
treatment, storage, or disposal facilities, and each well where it	injects fluids underground Inclu	ide all springs, rivers and other surface 🍇
water bodies in the map area. See instructions for precise requirem	ents.	
XII. NATURE OF BUSINESS (provide a brief description)		
w forther of industrial chamicals including	og sodium chlorate, am	monium perchlorate.
notessium perchlorate, manganese dioxide, bor	on trichloride, boron	tribromide, elemental
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attachments and that, based on my inquiry of those persons inapplication. I believe that the information is true, accurate and	immediately responsible for obta complete. I am aware that there	aining the information contained in the
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I. R. Kelley, Vice President/ Gen. Mgr.	1 11/11	
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evise	d ar	oplicat	i the appropriate box in A or ion. If this is your first appl per in Item I above.	ication and yo	u already k	now your f	acility's	S EPA I.D	. Number, or	if this is a revised	application, e	nter your	Tacility's
A. F	IRS	TAP	PLICATION (place an "X	" below and pr	ovide the a	ppropriate	date)			☐2 NEW FAC	ILITY (Compl	ete item l	elow.)
- 5-4		1. EXI		te item below.	,		-1 1 1			71	FOR	NEW FA	CILITIES,
딁	F	r.	OPERATIO	ING FACILIT N BEGAN OR es to the left)	IES, PROV THE DAT	E CONSTR	UCTIO	yr., mo., N COMM	ENCED	¥8. MO.	TIO	N BEGAN	y) OPERA- I OR IS O BEGIN
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9. K	\mathbf{x}	1. FA	CILITY HAS INTERIM STA	TUS		The state				2. FACILIT	/ HAS A RCR	A PERMI	Т
			SES – CODES AND DES										
		•	CODE — Enter the code from des. If more lines are needed	enter the cod	ers) in the	space provi	cea. II	a proces	s will be used	be used at the fa that is not includ	cility. Ten line ed in the list o	es are prov f codes be	rided for low, then
∵d	escr	ibe the	e process (including its design	<i>capacity)</i> in t	ne space pr	ovided on t	ine torr	n (Item II	7-67.			1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
			DESIGN CAPACITY — For out — Enter the amount.										
2	11	NIT O	NT — Enter the amount. F MEASURE — For each and used. Only the units of mea	nount entered i	n column t	3(1), enter	the cod	e from th	e list of unit	measure codes bel	ow that descri	bes the un	it of
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othe	er ca	n hold	1400 gallons. The facility al	so has an incin	erator that	can burn u	p to 20	gallons p	er hour.		1 1 X	\ \ \	X
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1 2			B. PROCESS DESI	GN CAPACI	TY	3×20 0	, R	A. PRO	B. PR	OCESS DESIG	N CAPACIT	Y]	
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IV	DESCRIPTION	OF HAZARDOUS WAST	ES

- A EPA HAZARDOUS WASTE NUMBER Enter the four-digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. Livou handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.
- B. ESTIMATED ANNUAL QUANTITY For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.
- C. UNIT OF MEASURE For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate

POUNDS.
TONS.
ODE = = =

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1 PROCESS CODES:
For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility. For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant. Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the

extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.

2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter

'included with above" and make no other entries on that line.

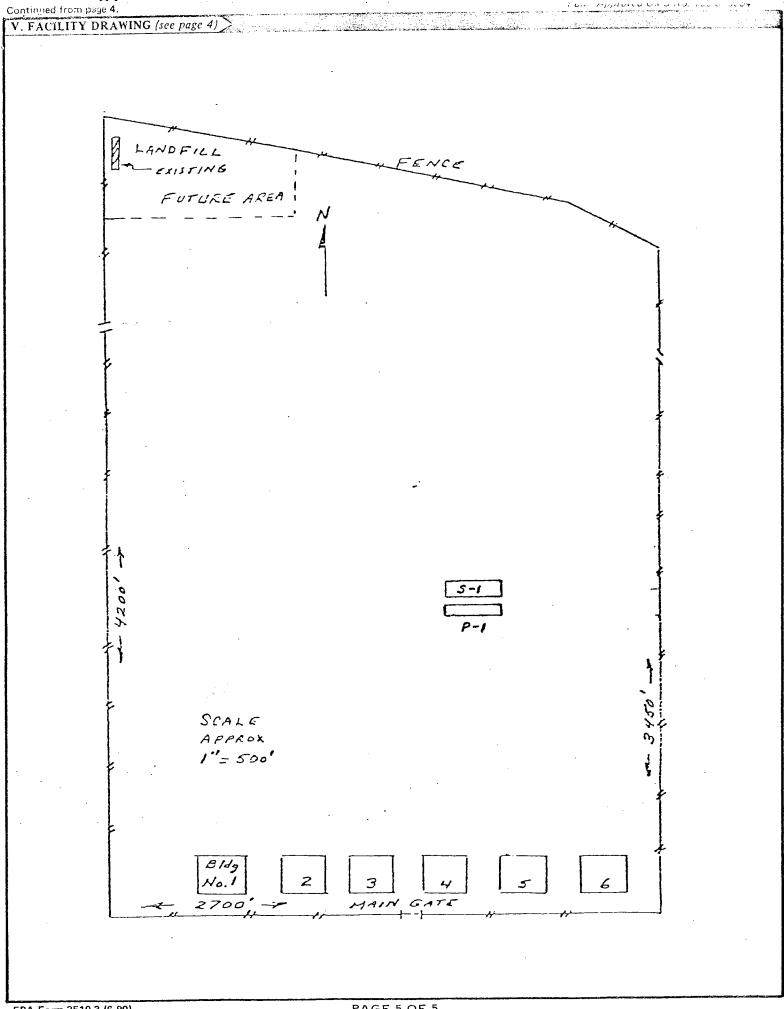
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV (shown in line numbers X-1, X-2, X-3, and X-4 below) — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Zó	H / W A (en	AZ	E1	D.	B. ESTIMATED ANNUAL QUANTITY OF WASTE	OF S	UNIT MEA- URE enter ode)			· .		ROC	ES	S CODE	s	D. PROCES	SSES 2. PROCESS DESCRIPT (if a code is not entered in	
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X-2	D	0	0	2	400		P	T	0	3	D	8	o				• * • •	
X-3	D	0	0	1	100		P	T	0	3	D	8	0			1974 (<u>197</u> 0)	The second of the second	
X-4	D	0	0	2					1	•		,					included with abo	ve

NOTE:	Pho	oto	cop	-	is page before completing if y and a	have	mo	e t	han 2	6 wa			ICIAL USE	Form Approved OMB No. 158-S80004
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. DI SCRIPTION OF HAZARDOUS WASTES (co	ontinued)	And the second second second second second second		
E. USE THIS SPACE TO LIST ADDITIONAL	OCESS CODES FROM ITEM	D(I) ON PAGE		
	•			
			-	
EPA I.D. NO. (enter from page 1)				
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FNVD008290330 6				
V. FACILITY DRAWING				d L
All existing facilities must include in the space provided o	n page 5 a scale drawing of the fac	cility (see instructions for mo	re detail).	
VI PHOTOGRAPHS		"我们我们		
All existing facilities must include photographs (as	erial or ground—level) that cle	arly delineate all existing	structures; existing stor	age,
treatment and disposal areas; and sites of future st	orage, treatment or disposal a	reas (see instructions for i	more detail).	
VII. FACILITY GEOGRAPHIC LOCATION				
LATITUDE (degrees, minutes, & secon	ds)	LONGITUDE (degre	ees, minutes, & seconds)	
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63 56 67 68 69 - 21		72 - 74	75 76 77 - 79	
VIII. FACILITY OWNER		tion of the second of the seco	es es "Y" is the box to th	a loft and
A. If the facility owner is also the facility operator a skip to Section IX below.	is listed in Section VIII on Form 1	General Information , pla	ice an A in the box to th	e lett allu
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B. If the facility owner is not the facility operator a	s listed in Section VIII on Form 1	, complete the following iten	ns:	
1. NAME OF FAC	CILITY'S LEGAL OWNER		2. PHONE NO. (are	ea code & no.)
<u>e</u> _				
E	-		55 56 - 58 59 - 61	62 - 65
3. STREET OR P.O. BOX		Y OR TOWN	5. ST. 6. ZIP	CODE
C C	G			
15 . 16	45 15 16	40	41 42 47 -	51
IX. OWNER CERTIFICATION				
I certify under penalty of law that I have personal	ly examined and am familiar v	with the information subn	nitted in this and all att	ached hat the
documents, and that based on my inquiry of those submitted information is true, accurate, and comp	e individuais immediately resp Note I am aware that there are	onsible for obtaining the l e significant penalties for	submittina false inform	ation.
submitted information is true, accurate, and companies including the possibility of fine and imprisonment	t	s significant panaretee to		
	B. SPONATURE		C. DATE SIGNED	
J. R. Kelley, Vice President	()1/1/1/1	1	i	1/
Electrolytic Division	AR Helle	Cel	7-12-8	
X, OPERATOR CERTIFICATION	the analysis of and are familiar	with the information subv	nitted in this and all att	ached
I certify under penalty of law that I have personal documents, and that based on my inquiry of those	ny examineu anu am rammar (e individuals immediately resp	with the information subh consible for obtaining the	information, I believe t	hat the
submitted information is true, accurate, and comp	olete. I am aware that there an	e significant penalties for	submitting false inform	atio n,
including the possibility of fine and imprisonment	t.			· .
A. NAME (print or type)	B. SIGNATURE		C. DATE SIGNED	
			1	
	PAGE 4 OF 5		CONTIN	IUE ON PAGE 5



G DESERT RESEARCH INSTITUTE UNIVERSITY OF NEVADA SYSTEM

Kerr-McGee Pond Sampling Program

Ву

E. N. Cooper B. Elliott R. H. French

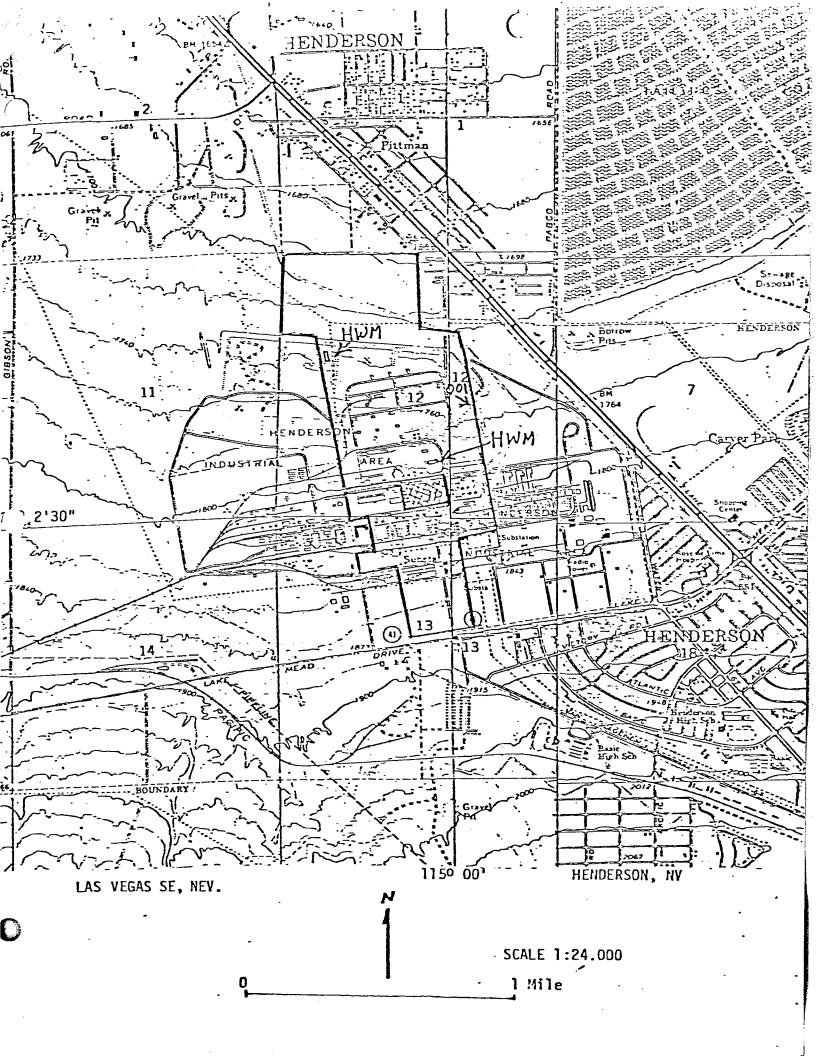
May, 1982

Table 1: Summary of Laboratory Analyses

Sample Sito	Sample Type	AS mg/R	Se mg/k	Ba mg/k	Cd mg/k	Total Cr mg/k	Cr+6 mg/k	Ag mg/k	Pb mg/g	Hg mg/2
AP1	Liquor Sludge	0.05<	0.04	0.8	0.05<	0.30	0.2<	0.32	0.5<	0.005<
AP2	Liquor Sludge	0.05<	0.06	0.8	0.08	0.48	0.2<	0.63	0.5<	0.005<
ЛР4	Liquor Sludĝe	0.05<	0.04<	0.0	0.05<	0.20	0.2<	0.2< 0.15 0.2< 0.05<	0.5<	0.005<

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17.7	MINDER			If a preprinted label has b	
I. EPA I.D	MOWBEL /			it in the designated space, ation carefully; if any of i	
	1-11-1			through it and enter the	correct data in the
VIII. FACIL	ITY NAME			appropriate fill-in area be	
	1:1:1 1			the preprinted data is abselleft of the label space list	
V FACILI	NG ADDRESS	PLEASE PLACE LABEL IN THIS SPACE	$I \setminus I \setminus I$	that should appear), pleas	
/ WAITI	AG ADDVERS	PLEASE LLACE LABEL IN THIS 3 ACE	1 / /	proper fill-in area(s) belo	ow, If the label is
//	++++			complete and correct, you	
/ / /	///		, , ,,	Items 1, III, V, and VI (must be completed regard	
FACIL	/*/ / /		$\langle \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	items if no label has been	provided, Refer to
VI. LOCA				the instructions for deta	
/ / /	111	X		tions and for the legal a which this data is collected.	
	/ <i>/</i>				
II. POLLUT	FANT CHARACT	ERISTICS			
		As & shough I to determine whether you need to submit any permi	it application f	forms to the EPA. If you ans	swer "yes" to any
		Late form and the euchlemental term listed in the natedinesis (UIII)	wing the unest	inn, mark a in ine dux in	me uma commo -
		a attached it wall spewer on in each nifestilli villillery but subili	in any in mese	TOTAL TOTAL	O IL AOMI UCIIALIA .
in the sup	d from permit sen	quirements; see Section C of the instructions. See also, Section D of the	e instructions f	or definitions of bold-faced	i terms.
15 EXCIDUE	u trom permit	MARK 'X'	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		MARK 'X'
	SPECIFIC	QUESTIONS YES NO ATTACHED	SPECIFIC QU	ESTIONS - E	YES NO FORM
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A. Is this	s facility a publ	licty owned treatment works	oncentrated an	imal feeding operation or	X
JFOR!	M 2A)	aduatic anim		facility which results in a J.S.? (FORM 2B)	~
2 1 Sec. 25	- SAME AND THE PROPERTY OF	와 는 상유학자(A) A(A) 지난 전에 2011년 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		other than those described	19 20 - 21
C. Is this	a facility which	other than those described in V in A or B al	bove) which w	vill result in a discharge to	X
A or E	above? (FORM 2		U.S.? (FORM	2D)	25 26 27
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E. Does	or will this facili lous wastes? (FOF	lity treat, store, or dispose of X municipal ef	muent below t	the lowermost stratum con- ter mile of the well bore,	X
, and an		underground		nking water? (FORM 4)	31 32 33
G Do vo	u or will you inte	ect at this facility any produced H. Do you or w	will you inject o	et this facility flyids for one	
tar	or other fluids w	which are prought to the surface.		at this facility fluids for spe- ing of sulfur by the Frasch	
in 000	paction with con	process, solu	ution mining o	of minerals, in situ combus-	
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hudro	corbons? (FORM	4】是一直是我们的我们就是我们的时间,我们就不会的人们,我们有一个的人。 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	enditalines de son		37 38 29
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2	inne and which	will potentially emit 100 tons		I potentially emit 250 tons	4 1
	and of nour bir	nominant requirated under the Late Late Det year Or o		nt regulated under the Clean	
W. College	Air Act and m	INV RESECT OF DE LOCATED IN BILL C AIT ACT BILL		be located in an attainment	
III. NAME	OF FACILITY				
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18 16 - 20 3					50 C 1
IV. FACIL	ITY CONTACT				
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	<u>M, S, T, R, O, 1</u>	N.G., C.B., P.L.A.N.T. M.A.N.A.G.E.	K / / U , 4	2 3 , 0 , 3 8 , 9 , 0 , 1	
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III. OPERATOR INFORMATION		B. Is the name listed in
III. OPERATOR		Item VIII-A also the owner?
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· · · · · · · · · · · · · · · · · · ·		D. PHONE (area code & no.)
STATUS OF OPERATOR (Enter the appropriate letter into the ansi	wer box; if "Other", specify.	B. PHONE (Med code d 1104)
M = PUBLIC (other than Jederal or State)	(specify)	A 7 0 2 5 6 5 8 9 0 1
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C. RCRA (Hazardous Wastes)	1 1 1 1 1 1 1 1 1 1	(specify)
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XI, MAP	illo bayone	property bounderies. The man must show
asset to this application a topographic map of the area extending	d proposed intake and disch	arge structures, each of its hazardous waste
the outline of the facility, the location of each of its existing all	injects fluids underground.	nclude all springs, rivers and other surface
A-antmont etorage of disposal labilities, allo		
water bodies in the map area. See instruction		
XII. NATURE OF BUSINESS (provide a brief description)		
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XIII. CERTIFICATION (see Instructions)	the same of the same	
I certify under penalty of law that I have personally examined a	and am familiar with the info	rmation submitted in this application and all
I certify under penalty of law that I have personally examined a attachments and that, based on my inquiry of those persons	immediately responsible for	obtaining the information contained in the
		there are significant penalties for submitting
application, I believe that the information, Including the possibility of fine and imprisonnt	ment.	C. DATE SIGNED
B. SIG	HATURE	C. DATE SIGNED
J. R. Kelley, Vice President/ Gen. Mgr.	1 10 1/001	7-12.8-1
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EPA HAZARDOUS WASTE NUMBER - Enter the four-digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four—digit number(s) from 40 CFR, Subpart C that describes the characterishandle hazardous wastes which as those hazardous wastes tics and/or the toxic contaminants of those hazardous wastes

ESTIMATED ANNUAL QUANTITY - For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste/s/ that will be handled basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed wastels/ that will be handled which possess that characteristic or contaminant.

UNIT OF MEASURE — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate

codes are:

	ENGLISH UNIT OF MEASURE	CODE -	METRIC UNIT OF MEASURE	CODE
	POUNDS.		KILOGRAMS.	K
÷.		いたごう あんしゃく 一会 ガリール	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

PROCESSES PROCESSES
1. PROCESS CODES:

- For listed hazardous waste: For each listed hazardous waste entered in column A select the code/s/ from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility. to indicate how the waste will be stored, treated, and/or disposed of at the facility.

 For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code/s/ from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

 Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).
- 2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.
- IOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER Hazardous wastes that can be described by 1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual
 - quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.

 In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter
 - "included with above" and make no other entries on that line. "included with above" and make no other entries on that line.

 3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

XAMPLE FOR COMPLETING ITEM IV Ishown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds er year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes re corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 00 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

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EPA Form 3510-3 (6-80)

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J3 14 J5				
7. FACILITY DRAWING All existing facilities must include in the space provided on p	age 5 a scale drawin	g of the facility (see instructions	for more detail).	
VI. PHOTOGRAPHS				
All existing facilities must include photographs (aeria	l or ground—level	that clearly delineate all ex	isting structures;	existing storage,
treatment and disposal areas; and sites of future stora	ige, treatment or o	disposal areas <i>(see instructio</i>	ns for more detail,	
VII. FACILITY GEOGRAPHIC LOCATION				
LATITUDE (degrees, minutes, & seconds)		LONGITUDI	E (degrees, minutes,	seconds)
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VIII. FACILITY OWNER				
A. If the facility owner is also the facility operator as lisskip to Section IX below. B. If the facility owner is not the facility operator as list.	sted in Section VIII	on Form 1, complete the follow	ring items:	ONE NO. (area code & no.)
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3. STREET OR P.O. BOX	•	4. CITY OR TOWN	5.ST.	6. ZIP CODE
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IX. OWNER CERTIFICATION				
I certify under penalty of law that I have personally of documents, and that based on my inquiry of those in submitted information is true, accurate, and complet including the possibility of fine and imprisonment.	idividuals immedia	ately responsible for obtainii	ng the information	, I believe that the
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A. NAME (print or type)	B. SIGNATURE	/ .1	C. DATE	SIGNED
A. NAME (print or type) J. R. Kelley, Vice President	B. SIGNATURE	Mey	1	SIGNED
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T. DI SCRUE TO OF HAZARDOUS WASTES (CERTIFICATION FROM ITEM D(1) ON PAGE 3.

LANDFILL FENCE EXISTING FUTURE AREA SCALE APPROX 1"= 500' EPA Form 3510-3 (6-80) PAGE 5 OF 5

V. FACILITY DR AWING (see page 4)



STATE OF NEVADA

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES DIVISION OF ENVIRONMENTAL PROTECTION

CARSON CITY, NEVADA 89710

TELEPHONE (702) 885-4670

May 5, 1982

Mr. George Stewart President Basic Management, Inc. P.O. Box 2065 Henderson, Nevada 89015

Dear Mr. Stewart:

The submittals from the industries located at the BMI Complex required for Items 1, 2, and 3 of the Division's Order dated February 25, 1982, have been received and reviewed. In most cases, the submittals were adequate, but have raised some questions which must be answered in order to fully complete Item 3. The additional information needed is indicated below for the specific industry. This information shall be submitted by May 21, 1982.

Genstar Cement and Lime Company

The Genstar response was complete.

Jones Chemicals, Inc.

Jones reported that an evaporation tank is used for the disposal of wash down water from the cleaning of drums, bottles, and delivery trucks. Jones shall submit an analysis of the chemical constituents of the waste wash water, a description of the tank (construction, buried, above ground, etc.), the leak detection system, and how the waste wash water is transported to the tank.

Kerr-McGee Chemical Corporation

Kerr-McGee responded to the Order assuming the ground water contamination of the area only regarded organic chemicals. Kerr-McGee shall supplement their response to include information on inorganic wastes; particularly those containing heavy metals.

Sampling and analyses conducted by the State have reported cyanide, arsenic, chromium, selenium, and antimony. The levels of these chemicals found in the ground water and surface water significantly exceed the drinking water standards.

Mr. George Stewart
May 5, 1982
Page -2-

Kerr-McGee shall include in their response:

- (1) Whether the above named chemicals or other hazardous inorganic chemicals are used in their processes;
- (2) Whether their wastes ever contained those chemicals, where the wastes were disposed, and how much has been disposed; and
- (3) At what rate those chemicals are being generated presently and where the wastes are being disposed.

Montrose Chemical Corporation of California

The Montrose response is being handled through a separate order to Stauffer.

State Industries, Inc.

State Industries submitted a laboratory analysis of their ponded waste. A check with the laboratory conducting the analysis resulted in a determination that the signing chemist could not verify the analysis. A recognized laboratory should be used to analyze the waste impoundment samples.

State Industries reported using cyanide from June 1970 to October 1971. How much was wasted and where was it disposed?

The BMI acid drain was reportedly used. Describe State Industries' access to the acid drain and show its location on a scaled map.

Was the BMI Dump used for materials other than trash; and what was disposed and how much?

What is the present waste generation rate?

Stauffer Chemical Company

The Stauffer response is being handled through a separate order.

Titanium Metals Corporation of America (TIMET)

The TIMET response was complete.

As was agreed during the March 11, 1982, meeting, Items 4 and 5 of the Order were to be answered within thirty (30) days after the Division notified the industries to respond. The industries are hereby notified to respond to Item 5 only at this time and to submit their reports by June 7, 1982.

Mr. George Stewart
May 5, 1982
Page -3-

Item 4 of the Order is not requested at this time. The Division is proposing to modify this Item, if warranted, by new data from monitoring wells which have been constructed in the area by the Bureau of Reclamation, TIMET, Kerr-McGee, and Stauffer. Until the Division completes its review of this data, Item 4 is hereby not required of the industries.

If you have any questions, please contact me.

Sincerely,

H. LaVerne Rosse, P.E.

Program Director Waste Management

de

CC: L. H. Dodgion, Administrator
Division of Environmental Protection
Genstar Cement and Lime Company
Jones Chemicals, Inc.
Kerr-McGee Chemical Corporation
Montrose Chemical Corporation of California
State Industries, Inc.
Stauffer Chemical Company
Titanium Metals Corporation of America (TIMET)

DESERT RESEARCH INSTITUTE UNIVERSITY OF NEVADA SYSTEM

Kerr-McGee Pond Sampling Program

By

E. N. Cooper
B. Elliott
R. H. French

May, 1982

Table 1: Summary of Laboratory Analyses

					•	Total	•		_	
Sample	Sample	SA	Se	Ва	Cd	Cr.	Cr+6	Λg	Pb	Нg
Sirc	Type	%/em	mg/8	mg/8	mg/g	mg/g	mg/g	mg/g	mg/g	mg/8
7 p 1	Lignor	> 0 0	0.04	0.8	0.05<	0.30	0.2<	0.32	0.5	0.005<
	Sludge	0.05<	> 0 0 0	0.5<	0.05<	0.30	0.2<	0.05<	0.5<	0.005<
AP2	Liguor	0.05<	90.0	0.8		0.48	0.2<	0.63		0.005<
	Sludge	0.05<	0.04<	0,5<	0.05<	09.0	0.2<	0.05<	0.5<	0.005<
AP4	Liguor	0.05<	0.04<	9.0	0.05<	.0.20	0.2<	0.15	0.5<	0.005<
	Sludĝe	0.05<	0.04<	0.0	0.05<	0.20	0.2<	0.05<	0.5<	0.005<

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March 31, 1982

CERTIFIED MAIL NO. P26 0233539

Mr. L. H. Dodgion, Administrator Division of Environmental Protection Capitol Complex Carson City, NV 89710



Dear Mr. Dodgion:

Your Order of February 25, 1982, as clarified and modified by Messrs. Tebeau and Rosse March 11, 1982, at a meeting in the Basic Management, Inc., conference room with representatives of companies operating facilities within the BMI Complex, requires coordinated responses from the various entities addressed by the Order inasmuch as the total information requested is not in the possession of each of the entities. Accordingly, Kerr-McGee Chemical Corporation has, as requested, assembled and transmits herewith the pertinent information of which it has knowledge and possession, and comments as follows with respect to the Order as clarified and modified:

Item 1.

Basic Management, Inc. (BMI) is in possession of an original drawing (print) which shows the design of the french drains which are located at the northern toe of the "Trade Effluent" impoundments dike. A copy of the drawing and pertinent comments are being forwarded as part of BMI's response.

Item 2

Closure of the BMI dump was effected in February, 1980 by Basic Management, Inc., at the request of the four owner companies. The requested information is included in BMI's response.

Item 3(a)

Kerr-McGee Chemical Corporation is not in possession of design data and dates of use of the various trenches within the BND disposal area. Basic Management, Inc., does have information Mr. L. H. Dodgion Page 2 March 31, 1982

relating to this matter which is being included in its response. Information on the one solid waste disposal trench located on KMCC property and solid waste disposal practices carried out in the areas of KMCC property is included in our response. Additionally, we include information concerning KMCC's waste disposal in the BMI trenches.

Item 3(b)

Comments about KMCC's (and predecessor companies') usage of the identified ditch is included in our response.

Item 3(c)

The general area of the closed BMI dump set aside for KMCC's use is identified on a drawing being submitted as part of Basic Management, Inc.'s response. Our best information on quantity and quality of wastes disposed of in that area is included in our response.

Item 3(d)

Detailed information concerning the BMI ponds which received KMCC effluents is not known to us inasmuch as pond usage was managed by Basic Management, Inc. However, we include information concerning quality, quantity, and discharge routes in our response.

In accordance with the clarification and modification of your Order by Messrs. Tebeau and Rosse on March 11, 1982, we were not at this time to develop the information described in Items 4 and 5 of the written Order. Instead, we were instructed to await your study and evaluation of the data and information submitted herewith, along with the submissions of the other responding companies, and the determination by you as to what further action, if any, is required, specifically as it relates to Kerr McGee Chemical Corporation.

Within 30 days of receipt of written notification by you of the action requested as it specifically relates to Kerr-McGee Chemical Corporation, we shall submit our required response.

Very truly yours,

KERR-McGEE CHEMICAL CORPORATION

C. B. Armstrong

Plant Manager

CBA:jc Attachments Response to DEP Order Page 2 March 31, 1982

By 1975, in accordance with the NPDES Permit, and the EPA-KMCC agreement letter dated July 21, 1972, these surface discharges had been completely eliminated. All waste process liquors were thereafter contained in impervious lined ponds on Kerr-McGee property. Subsequently, only once-through, noncontact cooling water was discharged to the ditch under conditions of the NPDES Permit.

For many years prior to 1975, insoluble residues from the processing of manganese ores were sluiced to surface impoundment areas on the plantsite. The sluicing water either evaporated or percolated into the soil leaving the solids behind. This water could have contained some manganese sulfate and magnesium sulfate with minor quantities of calcium sulfate and other relatively insoluble materials.

In February, 1975 as required by the July 21, 1972 KMCC-EPA agreement, the major sodium chlorate and manganese dioxide filtering operations were converted to semi-dry, solid-cake discharges. The ore tailings residues from the manganese dioxide process continued to be accumulated on KMCC property. These were determined to be nonhazardous, according to RCRA EP tests and criteria (Item 5, attached) and therefore do not create a source of groundwater contamination. Filter cake from the sodium chlorate operations, averaging 1-1/2 to 2 tons per operating day, has been placed in the BMI dump or in the KMCC disposal trench since February, 1975. This waste contains minor (~5%) quantities of soluble chloride and chlorate salts, and approximately 0.05% chromium. Closure and stabilization of the BMI dump area in 1980 assures against leaching and underground percolation of these materials by rainfall. The existing disposal trench on KMCC property is currently being used instead of the BMI dump for this purpose and was reported in RCRA Permit A application form.

Prior to 1970, housekeeping wastes, such as paper, cartons, bags, drums, and plastics, were periodically burned at their disposal site in the BMI dump. Thereafter they were buried by landfill procedures in the BMI dump until it was closed. Since 1980, these wastes have been hauled by commercial waste handlers to a county landfill.

Item 3(a) of Order - Trenches

Occasionally, KMCC utilized trenches on BMI property to dispose of housekeeping wastes as described above, particularly to prevent dispersal by the wind. In February, 1980 when the

Response to DEP Order Page 3 March 31, 1982

BMI dump was closed, KMCC constructed a similar trench on KM property for the disposal of sodium chlorate filter cake. This trench, identified and located on the Notification of Hazardous Waste Activity (RCRA) form is approximately 400 feet long, 32 feet wide, and a maximum of 20 feet deep. The filter cake is predominantly diatomaceous earth with small amounts of carbon, calcium sulfate, calcium carbonate, and soluble salts previously described.

Item 3(b) of Order - Liquid Wastes

By letter dated May 2, 1980 to Mr. Eller, Region IX, EPA, KMCC provided detailed information on liquid wastes which originated since 1945. As previously described, those wastes were disposed of in the BMI pond area. Since 1971, none has gone directly to the lower ponds by way of the identified ditch. The data submitted to the Corps of Engineers (Item 1) also describe the quality and quantity of this effluent as of 1970-71.

Item 3(c) of Order - Waste to BMI Dumps

The area of the BMI dump utilized by KMCC is identified on a drawing submitted by Basic Management, Inc., as part of its response. Chlorate filter cake and small quantities of carbon powder from our boron products operations were deposited in that area from 1975 to February, 1980. No other process wastes were sent to that location. KMCC utilized the BMI dump primarily to dispose of housekeeping wastes, such as papers, containers, pallets, etc. Since February, 1980, these wastes have been hauled to a Clark County sanitary landfill by Silver State Disposal Service, Inc. Approximately 15 yards per day of loose trash is handled in this manner.

Item 3(d) of Order - BMI Pond Usage

Until 1975, KMCC discharged liquid process wastes and sluiced filter cake via the siphon route to the BMI upper ponds in the amounts and qualities previously described. These waste streams became commingled in the ditch with streams from other companies within the BMI Complex. We have no knowledge or records concerning the exact locations and time periods of final disposal. Basic Management, Inc., in its response will provide available information on pond usage. We believe that very little KMCC waste went to the lower BMI ponds.

Response to DEP Order Page 4 March 31, 1982

Conclusions

To the best of our knowledge, the KMCC manufacturing facility has never discharged, leaked, or otherwise released any significant quantities of organic chemicals which could have entered underground waters. Until 1975, aqueous waste streams containing soluble inorganic salts, such as chlorides, chlorates, perchlorates, and sulfates, were discharged via surface ditches and ponds. Since 1975, following completion of KMCC's total containment "zero discharge" waste management system, these soluble salts have been contained in impervious lined impoundments for concentration by solar evaporation and recycle to the plant processes. Only once-through cooling water has been discharged to the ditch under the conditions of our NPDES Permit.

Chromium is the only RCRA hazardous waste constituent that was routinely discharged prior to 1975. The various attached documents, particularly the information supplied with our NPDES Permit application, identify chromium as a low level constituent in the waste water. We have attached the analysis of waters from Lake Mead and Las Vegas Wash that show no significant presence of chromium. Since discharges containing chromium ceased in 1975, any remaining effect of chromium should be indiscernible in those waters.

The insoluble residues from manganese ores used to produce manganese dioxide are nonhazardous as determined by RCRA EP toxicity tests (see data in Item 5). Therefore, these wastes are not a source of groundwater contamination by the Kerr-McGee facility.

Prepared by:

C. B. Armstrong, Plant Manager KERR-McGEE CHEMICAL CORPORATION Response to Department of Environmental Protection Order of February 28, 1982

(as Modified March 11, 1982 by Messrs. Tebeau and Rosse)

KERR-McGEE CHEMICAL CORPORATION

General Comments

The chemical manufacturing facilities presently owned and operated by Kerr-McGee Chemical Corporation (KMCC) and formerly by its predecessor companies, American Potash & Chemical Corporation and Western Electrochemical Company, produce several inorganic chemical products from natural ores and other inorganic chemical raw materials. These products and their respective raw materials are identified in the attached documents, particularly the May 2, 1980 letter to Mr. Eller, Region IX, EPA. Only small and incidental quantities of organic chemicals, such as paints, cleaning solvents, lubricants, petroleum fuels, flocculating agents, and resins, have been utilized in these operations. There have been no known spills, leakages or releases of significant amounts of any organic substances during the life of the Kerr-McGee and predecessor operations. Accordingly, there has been no reason or opportunity for surface or groundwaters to be adversely impacted by organic chemicals from Kerr-McGee chemical Corporation facilities.

The manufacture of chlorate and perchlorate products has generated aqueous waste streams containing soluble salts, such as sodium chlorate, sodium chloride, potassium chloride, and ammonium perchlorate, along with less soluble salts, such as calcium carbonate and calcium sulfate and insoluble materials, such as carbon and diatomaceous earth filter aid.

From the inception of these operations in 1945 until 1975, waste streams containing salts and filter cake sluicings were discharged via open surface ditches from the plant to the BMI pond system. Until 1975, the main route for this discharge was the east/west drainage ditch located just north of our ammonium perchlorate facility (June, 1971 application for discharge permit to Corps of Engineers), thence to the underground "siphon," and then to the upper BMI ponds located east of the Boulder Highway. We understand that from time to time those discharges were routed to the BMI lower ponds via the surface ditch mentioned in paragraph 3(b) of the Order. It is believed, however, that such discharges from the KMCC plant were small and infrequent. main drainage ditch (through the siphon) also carried aqueous waste streams from neighborning BMI plants, storm drains, cleanup and housekeeping washings, boiler blowdown, cooling tower blowdown, once-through cooling water, etc. All these streams were commingled by the time they reached the siphon.

ATTACHMENTS

- Discharge Permit Application, Corps of Engineers, NV075-0YQ-2-000254 - Original Application June 11, 1971.
 - a. Supplemental Application, October 5, 1971
 - b. Supplemental Application, March 6, 1972
 - c. Supplemental Application, March 9, 1972
- Letter, R. L. O'Connell, EPA Region IX, to J. J. Kelley, KMCC, July 21, 1972.
- 3. Permit to Discharge No. NV0000078, August 26, 1973.
- 4. NPDES Application (Renewal), August 2, 1974.
- 5. IOC, R. E. Harris/A. L. Andersen, Analysis of Eimco (MnO₂) Tails, May 17, 1979.
- 6. a. Correspondence, Re: Pond Utilization, Nevada DEP (Marvin Tebeau) and KMCC (C. B. Armstrong), March 23, 1979.
 - b. Corresponsence, Re: Pond Utilization, KMCC (C. B. Armstrong) and Nevada DEP (Marvin Tebeau), March 22, 1979.
- 7. Eckhardt Committee Questionnaire, June 6, 1979.
- 8. Notification of Hazardous Waste Activity (RCRA) August 12, 1980.
- 9. Application for a Hazardous Waste Permit, Forms 1 and 3, November 14, 1980.
- a. Correspondence Re: Waste Disposal Practices, EPA, Region IX (Clyde Eller) and KMCC (C. B. Armstrong), March 25, 1980.
 - Corresponsence Re: Waste Disposal Practices, KMCC (C. B. Armstrong) and EPA, Region IX (Clyde Eller), May 2, 1980
 - c. Corresponsence, Re: Waste Disposal Practices, EPA, Region IX (Clyde Eller) and KMCC (C. B. Armstrong), June 17, 1980.
 - d. Corresponsence, Re: Waste Disposal Practices, KMCC (C. B. Armstrong) and EPA, Region IX (Clyde Eller), July 18, 1980

Attachments Page 2 March 31, 1980

- 11. a. Lake Mead and Las Vegas Wash Water Analysis, Southern Nevada System, 1972-1974.
 - b. Lake Mead and Las Vegas Wash Water Analysis, Southern Nevada System, Sample No. 20-9, March 9, 1981.
 - c. Lake Mead and Las Vegas Wash Water Analysis, Southern Nevada System, Sample No. 19-34, March 9, 1981.
 - d. Lake Mead and Las Vegas Wash Water Analysis, Southern Nevada System, May 11, 1981

KERR-McGEE CORPORATION

INTERNAL CORRESPONDENCE

TO Distribution

DATE

November 18, 1981

FROM T. L. Bentley/S. M. Logan SUBJECT

RCRA Groundwater Quality Assessment Outline

A written outline for a groundwater quality assessment program is required by RCRA for hazardous waste surface impoundments, landfills and landfarms by November 19, 1981 (45 FR 33241). This outline would be used if a groundwater quality assessment is ever required.

Attached is an outline to be kept on file at each of your facilities.

T. L. Bentley

Environmental Affairs

S. M. Logan

Engineering Services

TLB/SML/dp

Distribution

B. J. Montgomery/S. Livingston

R. A. Clark

P. C. Gaskin (6)

R. A. Napier

M. W. Merrill/K. J. Cox

J. E. Warn/W. L. Hoelscher

uS. Pia

cc: G. E. Adam

C. B. Armstrong/R. F. Wohletz

E. A. Anglada

W. J. Broussard

S. W. Foster/H. A. Perkins

W. B. Hayes

B. Hoffman

....T. L. Hurst

J. R. Kelley

D. F. Schiesz

M. Moore

D. R. Oakes

D. G. Bond

J. H. Stallings

K. Brothers

F. W. McCann

L. H. Albright

F. D. Lyons

W. J. Ganus

GROUNDWATER QUALITY ASSESSMENT PROGRAM OUTLINE

- Evaluate Actual and Potential Migration of Hazardous Waste (HW) from the Existing HW Management Area.
 - A. Evaluate physical and chemical characteristics of groundwater from monitoring well data.
 - B. Identify and characterize alternate sources of HW that may influence the site.
 - 1. Existing and Historical on-site
 - 2. Existing and Historical off-site
 - C. Evaluate construction details, operating procedures and operating history of the HW facility.
 - D. Perform a water balance (if possible) around the HW management area.

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E. Examine water levels adjacent to the HW facility.

II. Define Hydrogeologic Environment

- A. Potentially impacted aquifer(s):
 - 1. Depth
 - 2. Thickness
 - 3. Areal Extent
 - a. local recharge and discharge points
 - b. determine groundwater usage of aquifer(s)
- B. Estimate aquifer parameters:
 - 1. Transmissivity
 - 2. Storage coefficient
 - 3. Hydraulic conductivity
 - 4. Effective porosity
- C. Estimate local and regional directions and average velocities of groundwater flow:
 - Develop potentiometric maps of aquifer systems using water levels from current monitoring points.
 - 2: Develop depth-to-water maps.

III. Define an Expanded Monitoring Well System

- A. Review historical groundwater data (if any).
- B. Establish locations and depths for new monitoring wells to delineate boundaries of impacted areas.
- C. Sample and analyze monitoring wells for the HW constituents at the facility.

- 1. Determine parameters
- 2. Determine sampling and analysis procedures
- 3. Determine frequency of sampling

IV. Evaluate Impact from Existing HW Management Area

- A. Evaluate physical and chemical characteristics of groundwater and determine concentrations of HW constituents.
- B. Estimate rate of HW migration.
- C. Estimate extent of HW migration.
- D. Interpret analytical results in terms of water quality criteria and other applicable regulations.
- E. Assess significance of analytical data in terms of compliance requirements.

V. Prepare Schedule of Implementation

- A. Submit assessment plan of EPA or to the State if it has obtained RCRA interim authorization.
- B. Install additional monitoring wells.
- C. Initiate sampling and analysis.
- D. Evaluate analytical and physical data.
- E. Install additional wells, if necessary, and monitor.
- F. Estimate area impacted from existing HW Management Area.
- G. Submit assessment report to EPA or to the State if it has obtained RCRA interim authorization.

GROUNDWATER SAMPLING AND ANALYSIS PLAN

Groundwater System

The groundwater monitoring system consists of eight wells. Four wells each are located around the pond (P-1) and landfill with one well hydraulically upgradient and three wells downgradient of each operational unit. The following sampling and analysis plan is based on the attached corporate outline by T. Bentley, et al, April 1, 1981.

Sample Collection

Groundwater samples shall be collected of all wells on a quarterly basis for one year and analyzed for parameters listed below. After the first year, wells around active and closed waste management units shall be sampled semi-annually and analyzed for groundwater quality or indicator parameters as is appropriate. When possible, samples shall be collected by pumping. At least one case volume shall be removed if samples are collected by bailing. At the time of sampling, water elevations shall be determined.

Sample Preservation and Shipment

Samples for pesticides, herbicides, and phenol shall be collected at the well and preserved in glass bottles. Preservation for pesticides and herbicides is cooling to 4°C and for phenols 1 g CuSO_4 and adjusting pH to below 2 with phosphoric acid using methyl red as an indicator and storage at 4°C .

Samples for the remaining parameters listed in 40 CFR 265.92, b-1, -3, shall be taken from a five-gallon sample collected from each well. The following parameter shall be preserved as indicated below:

Parameter	Sample Container	Preservation
Metals, As Radiological	Plastic (P) or Glass (G)	Acidify to pH <2 with ${\rm HNO_3}$
F, Cl, SO ₄ , NO ₃ (N), Coliform, Specific Conductance	11	Cool to 4°C
Total Organic Carbon, Total Organic Halogen	T tt	Acidify to pH <2 with H ₂ SO ₄ or HCl

Chain of custody shall be indicated by a form specifically to accompany samples and/or some other equivalent documents which indicate that samples arrived at laboratory undisturbed and in good condition, e.g., shipping documents or statements in laboratory report. Samples shall be packed for shipment in suitable containers (e.g., in chests to preserve temperature) and sent to a commercial laboratory for analysis.

Sample Analysis

The laboratory shall indicate that all analyses were performed using methods in the EPA publication, Methods for Chemical Analysis of Water and Wastes, a recognized equivalent, or shall produce such evidence upon request. Analysis of pH and specific conductance shall be done on site using suitable standards to calibrate instruments. For specific conductance, measurement shall be taken at 25°C.

Several parameters listed in 40 CFR 265.92 must be determined in quadruplicate on upgradient well(s). They are specific conductance, pH, total organic carbon, and total organic halogen.

The results of analyses shall be summarized in a report to the Region IX Administrator with a copy sent to the Nevada State Department of Environmental Protection, not later than 15 days after receipt of complete laboratory report.

EXPLANATION OF GEOLOGICAL AND WELL CONSTRUCTION DATA

KERR-McGEE HENDERSON FACILITY

RCRA INTERIM STATUS GROUNDWATER MONITORING PROGRAM

Enclosed are: 1) Map showing RCRA Interim Status Monitor Well location.

- 2) Well construction diagrams for RCRA Interim Status Groundwater Monitoring Wells M-1, M-2, M-5, M-6, M-7, M-8, and M-9. (Note: No construction diagram is shown for Well H-28; however, well construction details are enclosed.)
- 3) Tables showing detailed lithological description of Wells M-5, M-6, M-7, M-8, M-9, and H-28. (Note: The detailed lithological descriptions for Wells M-1 and M-2 are shown on the well construction diagrams.)
- 4) Well construction and completion tables for Wells M-5, M-6, M-7, M-8, and M-9. (Note: The detailed well construction and completion tables for Wells M-1 and M-2 were not made. Details of construction are shown on the well construction diagrams.)

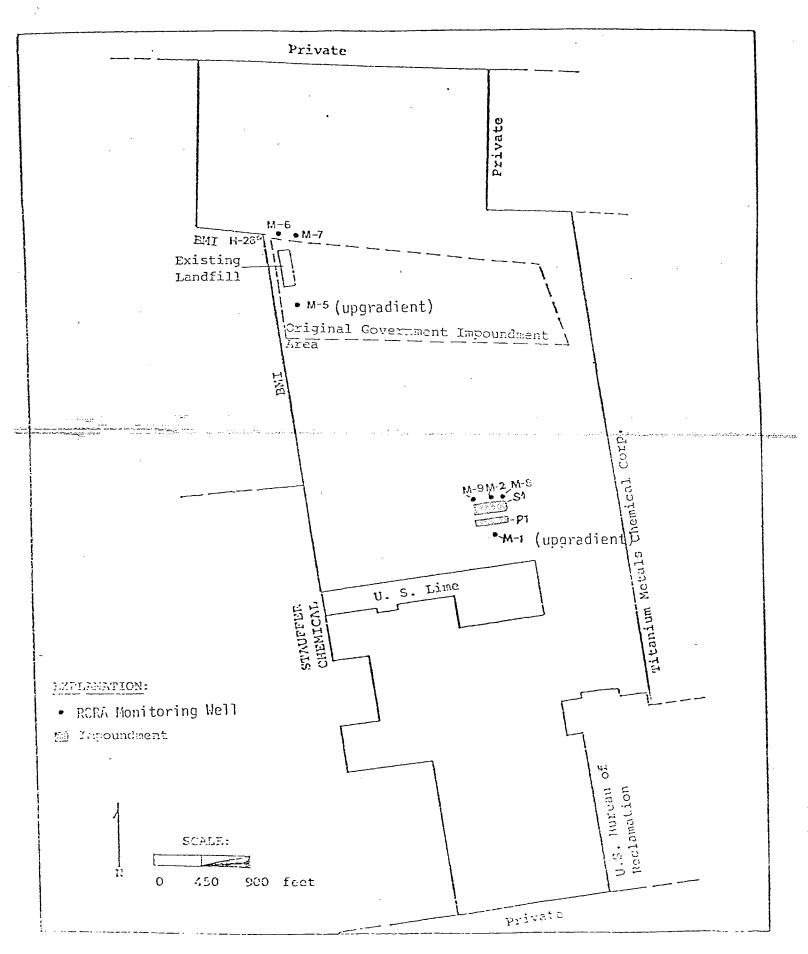
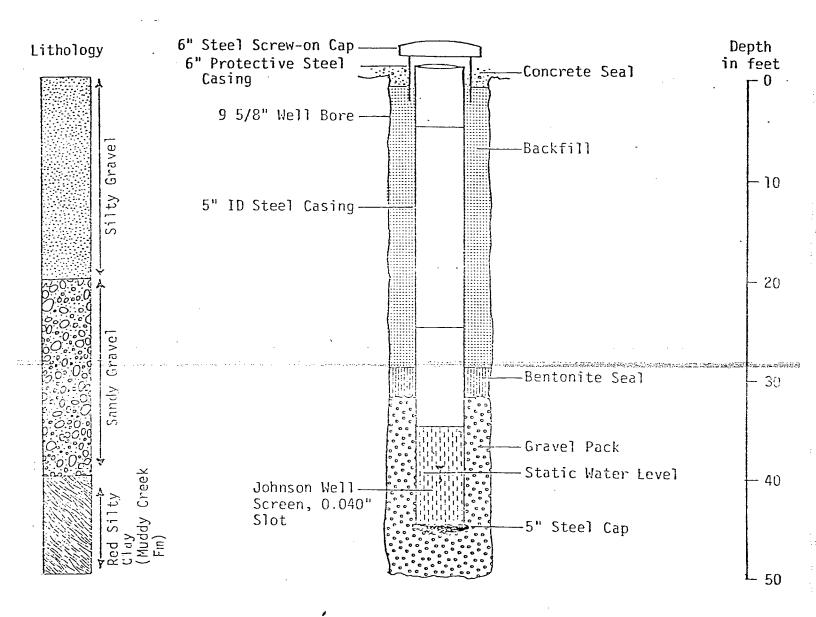


Figure 1.

K-M CHEMICAL CORPORATION Henderson, Nevada Facility Well No. M-l

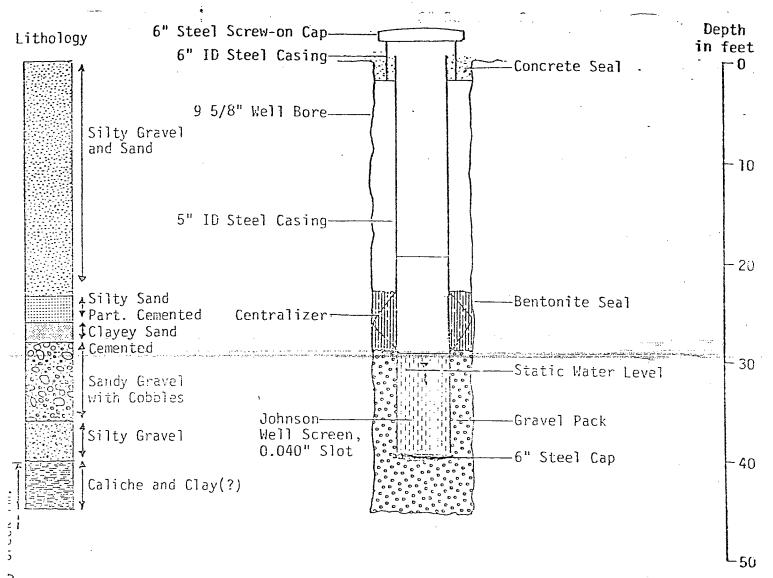


Well Yield: Approximately 1/2 gpm

Water Level on 1-14-82: 41.05' (from protector pipe top)

Casing Elevation: 1792.68' above MSL

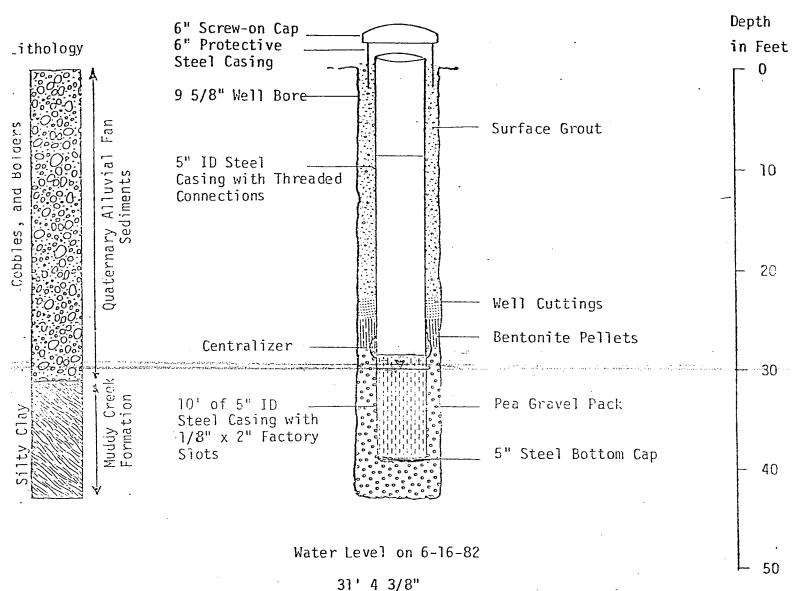
Geological and Well Construction Data from Converse Consultants 81-3258, 11-13-81.



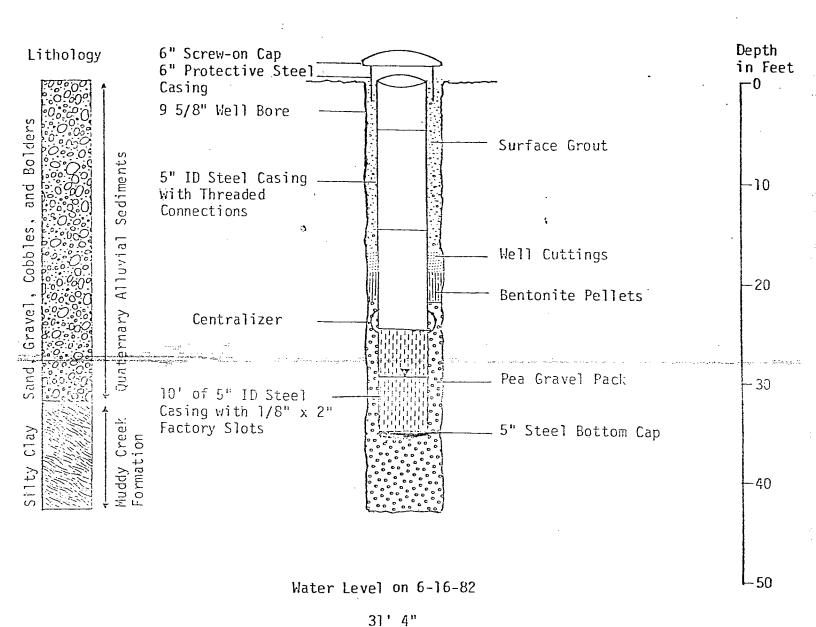
Well Yield: Approximately 15 gpm Water Level on 1-14-82 : 33.25' (from protector pipe top)

Casing Elevation: 1780.02 ft. above MSL

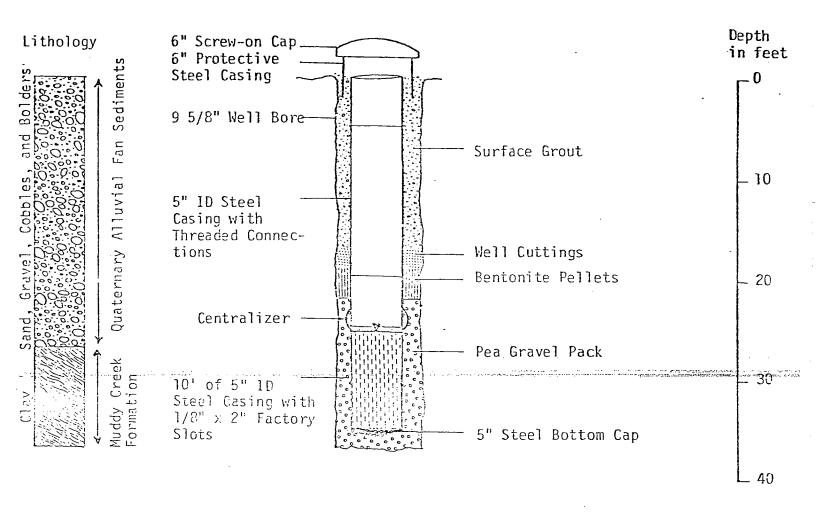
Geological and Well Construction Data from Converse Consultants 81-3258, 11-13-81.



Measured from Top of Protective Casing



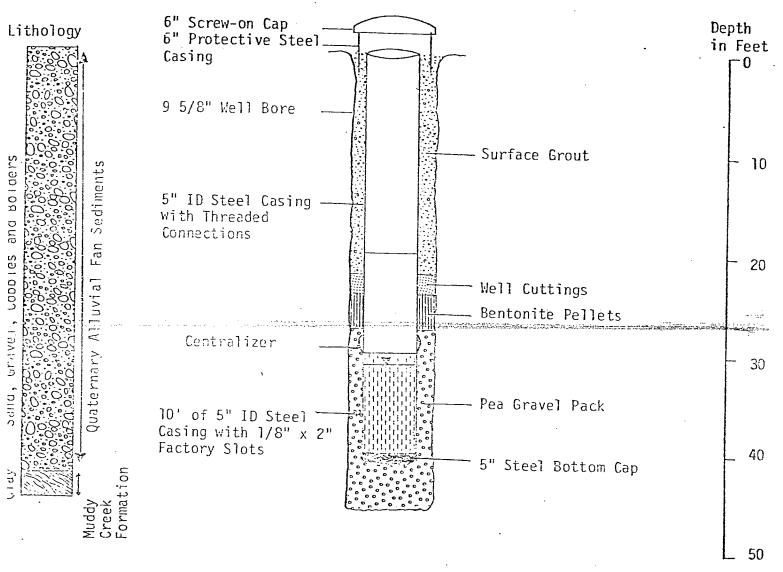
Measured from Top of Protective Casing



Water Level on 6-16-82

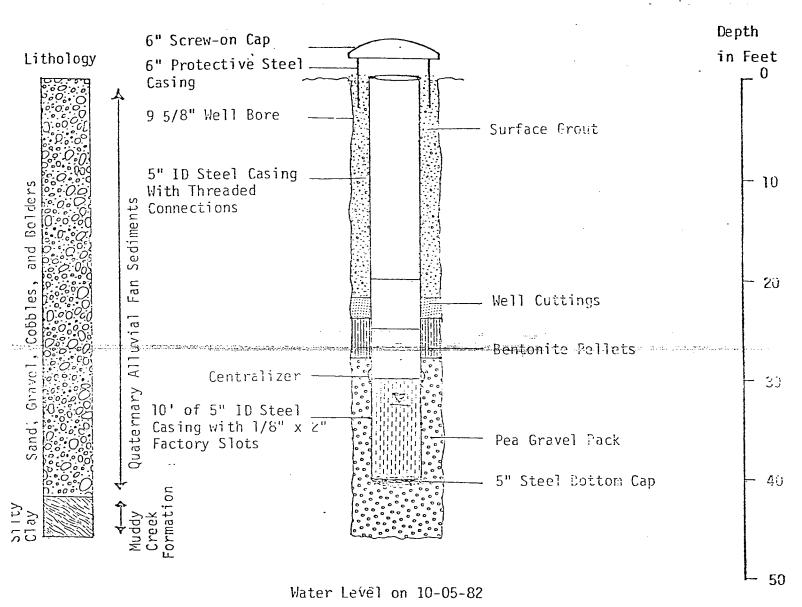
27' 11 3/4"

Measured from Top of Protective Casing



Water Level on 6-16-82 33' 8"

Measured from Top of Protective Casing



33' 9"
Measured from Top of Protective Casing

	Depth in Feet	lithology Description
		Lithology Description
	0-12.0	Silty sandy gravel
	12.0-15.0	Partially cemented sand and gravel
	15.0-20.0	Cobbles
	20.0-23.0	Silty sand and gravel
	23.0-24.5	Gravel and sand with cobbles
	24.5-25.5	White clay and gravel with gypsum and cobbles
	25.5-28.0	Brown clayey silt with about 50% gypsum
	28.0-31.0	Brown clayey silt with sand and gravel and white streaks
To	31.0-43.0	Brown clay with occasional thin caliche lenses

Top of Muddy Creek at 31 feet

Depth in Feet	Lithology Description
0-29.0	Silty gravel and sand; slightly cemented from 12' - 13'
29.0-32.0	Silty sand and gravel with gypsum
32.0-32.5	Brown silty clay
32.5-34.0	Silty sand and gravel
34.0-38.0	Brown silty clay
38.0-43.0	Brown clay with sand and gravel

Top of Muddy Creek at 32 feet

Depth in Feet	Lithology Description
0-15.0	Silty gravel and sand
15.0-18.0	Silty gravel and sand with gypsum
18.0-22.5	Silty gravel and sand with abundant gypsum; approximately 40% gypsum
22.5-28.0	Light brown silty clay with thin beds of caliche. Cemented from 27' - 27.5'
28.0-29.5	Clayey gravel (Not cemented)
29.5-37.0	Brown silty clay.

Top of Muddy Creek at 29.5'

Depth in Feet	Lithology Description
0-25.0	Silty sandy gravel
25.0-25.5	White dry clayey sand
25.5-33.0	Silty sandy gravel with cobbles; gypsum stringer at 27'
33.0-40.5	Caliche-cemented sand and gravel
40.5-42.5	Sandy gravel slightly cemented
42.5-45.0	Silty clay

Top of Muddy Creek at 42.5'

Depth in Feet	Lithology Description
0-19.0	Sand and gravel; unconsolidated
19.0-20.0	Harder sand and gravel with some caliche cementation
20.0-35.0	Sand and gravel; not as hard. Some cementation
35.0-42.0	Gravel, sand, clay, and silt; clay reddish brown; some gypsum at 37'
42.0-45.0	Silty clay and sand

Top of Muddy Creek @ 42.0

LITHOLOGY LOG

FOR HENDERSON

WELL NO. H-28

Description

Sand, silty to clayey, grayish-brown very fine to very coarse (poorly sorted), and gravel, pebbles, cobbles and boulders, rounded to subangular; also with layers of caliche and caliche-cemented sand and gravel

Depth Below Land Surface (feet)

 $0 - 44\frac{1}{2}$

Clay, silty, to silt, clayey, light brown with traces of sand and gravel in matrix; also, with occasional thin layers of sand, reworked caliche, and caliche (Muddy Creek Formation)

 $44\frac{1}{2} - 51$

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Data from Geraghty and Miller, Inc., October, 1980.

GROUNDWATER ASSESSMENT OUTLINE

The objective of the following summary is to provide the operator of this facility with guidance should groundwater analysis prescribed by 40 CFR 265.92 - 93 indicate groundwater contamination is occurring or has occurred. This summary is based on the attached corporate outline prepared by T. Bentley November 18, 1981.

After the first year, groundwater monitoring sampling will continue on a semiannual basis for groundwater quality or groundwater contamination parameters, as is appropriate. Each well sampled shall have the indicator parameters, pH, specific conductance, total organic carbon, and total organic halogen, analyzed in quadruplicate and the mean and variance compared with the initial background mean and variance. If there is a statistically significant increase (or decrease in case of pH), the operator shall do the following:

- 1. Resample and analyze to determine if variation was the result of laboratory error.
- 2. Should resampling confirm difference
- annual report to the administrator.
 - b. On downgradient wells report the results within seven days of receipt of complete laboratory report to administrator that facility may be affecting groundwater.
- 3. Within 15 days of initial notification, develop and submit to administrator a groundwater assessment program. The details to be included in the assessment plan are spelled out in the corporate outline attached to this summary.

It is understood that suggestions and recommendations of the administrator may change the initial plan outline and implementation schedule but every effort will be made to fulfill the regulatory requirements in a timely manner.

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questions, you must submit this form and the supplement if the supplemental form is attached. If you answer "no"											
is excluded from permit requirements; see Section C of the											
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A. Is this facility a publicly owned treatment works	 		ATT ACT ES		(either existing or proposed)	ATTACAGE					
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	22	73	24	waters of the U.S.? (FOR! F. Do you or will you inject	t at this facility industrial or	25 26 27					
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	Х		X		the lowermost stratum con- rter mile of the well bore,	x					
G. Do you or will you inject at this facility any produced	28	29	30	underground sources of d		31 32 33					
water or other fluids which are brought to the surface					at this facility fluids for spe- ining of sulfur by the Frasch						
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oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)	34	35	36	(FORM 4)	overy or geothermar energy?	X 37 38 39					
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C. STATUS OF OPERATOR (Enter the appropriate letter into the answer	r box; if "Other", specify.)	PHONE (area code & no.)
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RCRA (This inform	mation is required under Se	ction 3095 of RCRA.)	
FOR OFFICIAL USE ONLY APPLICATION DATE RECEIVED			
APPROVED (yr., mo., & day)		COMMENTS	
23 24 29			
II. FIRST OR REVISED APPLICATION			
Place an "X" in the appropriate box in A or B below revised application. If this is your first application a EPA I.D. Number in Item I above.	nd you already know your t	dicate whether this is the first a facility's EPA I.D. Number, or	application you are subroitting for your facility as
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B. REVISED APPLICATION (place an "X" bel	ow and complete Item I abo	ove)	2. FACILITY HAS A RCRA PERMIT
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III. PROCESSES (continued)

- C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.
 - Line 5. Filtration of sodium chlorate waste solids. Slurry is thickened in 2,500-gallon cone-bottomed settling tank and filtered on a 3' x 4' rotary vacuum filter. Cake is sent to landfill. Filtrate is returned to process.

V. DESCRIPTION OF HAZARDOUS WASTES

- LEPA HAZARDOUS WASTE NUMBER Enter the four-digit number from 40 CFR, Suppart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.
- ESTIMATED ANNUAL QUANTITY For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste/s/ that will be handled which possess that characteristic or contaminant.
- . UNIT OF MEASURE For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	, P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

OTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER — Hazardous wastes that can be described by ore than one EPA Hazardous Waste Number shall be described on the form as follows:

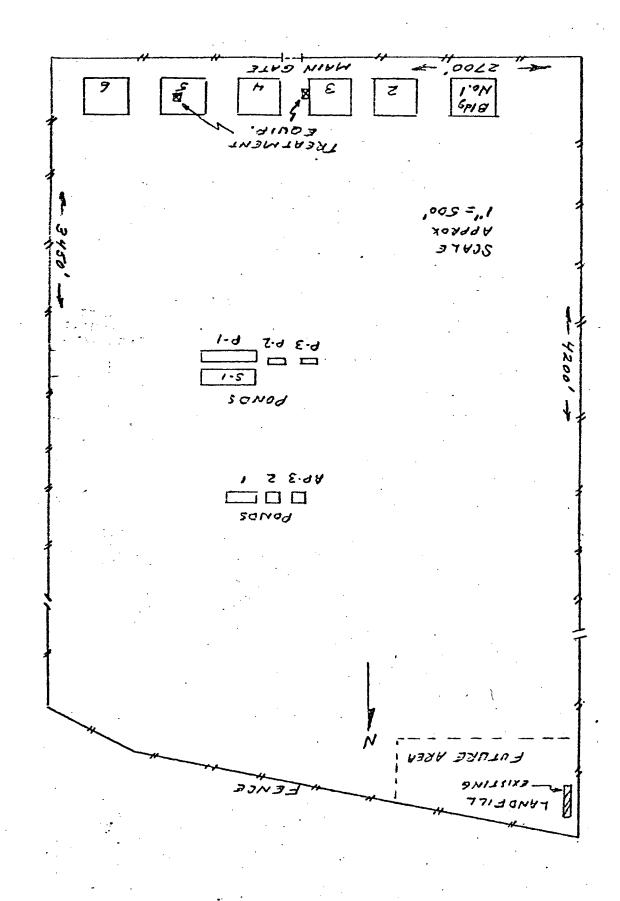
- 1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
- 2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
- 3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

XAMPLE FOR COMPLETING ITEM IV (shown in line numbers X-1, X-2, X-3, and X-4 below) — A facility will treat and dispose of an estimated 900 pounds are year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non—listed wastes. Two wastes a corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 30 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

				PA			C. OF	UN														D. PROCESSES
0	W	AS	T	EΝ	D. IO e)		51	UR ente ode	E				1. 1	PR		ES nte		ODE	S			2. PROCESS DESCRIPTION (if a code is not entered in D(1))
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-2	L	0	7	0	2	400		P		T	0	3	L	7	8 (0	1	-1		T	3	
:-3	D		7	0	1	100		P		T	0	3	D	3 (3 (0	1	1		T	1	
<u>-4</u>	L	0)	0	2						τ-	1		1	7			F		1	1	included with above

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continued from the front.					•
V. DESCRIPTION OF HAZARDOUS S	ontinued)				
E. USE THIS SPACE TO LIST ADDITIONAL FR	OCESS CODES FROM	ITEM D(1) ON PA	42 -		
				-	
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					. *
EPA I.D. NO. (enter from page 1)	÷				
$NVD008290330^{\frac{17A}{6}}$	•				
13 13 15					
'. FACILITY DRAWING					
All existing facilities must include in the space provided on T. PHOTOGRAPHS	n page 5 a scale drawing of	the facility (see instruction	ns for more d	etail).	
	riol or ground I awall th				
All existing facilities must include photographs (ae. reatment and disposal areas; and sites of future sto	<i>rial or ground—level)</i> in brade, treatment or disp	at clearly delineate all e osal areas (see instructi	existing stru ions for moi	ictures; existing s re details	torage,
II. FACILITY GEOGRAPHIC LOCATION					
LATITUDE (degrees, minutes, & second	s)	LONGITU	DE (degrees, i	ninutes, & seconds)	
360230		1	150		
65 66 67 63 69 - 71		72		76 77 - 79	
III. FACILITY OWNER					100
X A. If the facility owner is also the facility operator as	listed in Section VIII on F	orm 1, "General Informat	ion", place a	n "X" in the box to	the left and
skip to Section IX below.			•		
B. If the facility owner is not the facility operator as	listed in Section VIII on F	orm 1, complete the follo	wing items:		
1. NAME OF FACE	LITY'S LEGAL OWNER	·		2. PHONE NO.	'area code & no.)
16	•	· · · · · · · · · · · · · · · · · · ·		56 - 58 59 -	61 62 - 6
3. STREET OR P.O. BOX	4	. CITY OR TOWN			P. CODE
	Ġ				
16	45 15 16		40 41	<u> </u>	
X. OWNER CERTIFICATION					
certify under penalty of law that I have personally	examined and am fam	iliar with the information	on submitte	d in this and all a	ittached
ocuments, and that based on my inquiry of those a abmitted information is true, accurate, and complete	individuals immediately ete. I am aware that the	' responsible for obtaini re are significant penali	ing the info	rmation, I believe mitting false info	that the
icluding the possibility of fine and imprisonment.		re are significant penalt	iles for subfi	nitung raise imul	macion,
. NAME (print or type)	B. SIGNATURE	\	l c	. DATE SIGNED	
I P Vollow Tries Person land	/	101/01		1. 1	_
J. R. Kelley, Vice President Gen. Mgr. Electrolytic Produ	hts Div CA	IC Millieus		11/18/8	80
OPERATOR CERTIFICATION					
certify under penalty of law that I have personally	examined and am fami	iliar with the information	on submitte	d in this and all a	ttached
ocuments, and that based on my inquiry of those is	individuals immediately	responsible for obtaini	ing the infol	rmation. I believe	that the
ubmitted information is true, accurate, and completeluding the possibility of fine and imprisonment.	ete. I am aware that the	re are significant penalt	ies for subn	nitting false infor	mation,
					99.5
NAME (print or type)	B. SIGNATURE		C	. DATE SIGNED	



N V D C C 8 2 9 0 3 3 0

A. FACILITY DRAWING (see page a,

(TIII—II) areas are spaced for ente type, i.e., i.c.iid	THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.		Form Approved UMB No.	158-R0175								
FORM CONTRACTOR	S. ENVIRONMENTAL INF		I. EPA I.D. NUMBER									
	Consolidated Pa	rraits Program	FNV D0082) 0 3 3 0								
GENERAL CABELITEMS	Read the "General Instru	ctions" before starting.)		13 14 1								
I. EPA I.D. NUMBER	//////		GENERAL INST									
I. EPA I.D. NUMBER			It in the designated space.	Review the inform								
III. FACILITY HAME			ation carefully; if any of it is incorrect through it and enter the correct date									
1111111			appropriate fill—in area below. Also if an									
FACILITY			the preprinted data is absent (the area to the left of the label space lists the information									
	SE PLACE LABE	L IŅ THÌS SPẠCE	that should appear), pleas	e provide it in the								
7-1-1-1			proper fill-in area(s) bel complete and correct, you	OW. If the label is								
V / / / / / X / / / /	'		ltems I, III, V, and VI	(except VI-B which								
FACILITY		3. 8 WEN 1380	must be completed regardless). Complete a									
VI. LOCATION		1 2 4 0X 1280 /	the instructions for detail	tems if no label has been provided. Refer to he instructions for detailed item descrip-								
			tions and for the legal a	uthorizations under								
		and the same of th	which this data is collected.									
II. POLLUTANT CHARACTERISTICS												
INSTRUCTIONS: Complete A through J to de	etermine whether you ne	red to submit any permit applicat	tion forms to the EPA. If you ans	wer "yes" to any								
questions, you must submit this form and the	supplemental form listed	in the parenthesis following the c	question. Mark "X" in the box in	the third column								
if the supplemental form is attached. If you an is excluded from permit requirements; see Section	swer no to each quest n C of the instructions S	ton, you need not submit any of the	hese forms. You may answer "no	" if your activity								
<u> </u>			our for definitions of dots—18086									
SPECIFIC QUESTIONS	YES NO ATT		QUESTIONS	YES NO ATTACHES								
A. Is this facility a publicly owned treatme		B. Does or will this facili	ty (either existing or proposed)	ATTACHER								
which results in a discharge to waters of	the U.S.?	include a concentrate	d animal feeding operation or									
(FORM 2A)	 	discharge to waters of t	tion facility which results in a he U.S.? (FORM 2B)	X								
C. Is this a facility which currently results in	lischarges 37	D. Is this a proposed facil	ity lother than those described	19 20 25								
to waters of the U.S. other than those des A or B above? (FORM 2C)	Cribed III	in A or B above) which waters of the U.S.? (FC	ch will result in a discharge to	X								
E. Does or will this facility treat, store, or d		F. Do you or will you in	ect at this facility industrial or	25 26 27								
hazardous wastes? (FORM 3)	Ispose of X	municipal effluent belo	ow the lowermost stratum con-									
	ļ	underground cources of	uarter mile of the well bore, for drinking water? (FORM 4)	X								
G. Do you or will you inject at this facility any	produced	· · · · · · · · · · · · · · · · · · ·	ect at this facility fluids for spe-	31 32 33								
water or other fluids which are brought to the in connection with conventional oil or nature	lass pro-	i cial processes such as	mining of sulfur by the Frasch									
duction, inject fluids used for enhanced rec	overy of	process, solution minis	ng of minerals, in situ combus-	_								
oil or natural gas, or inject fluids for storage hydrocarbons? (FORM 4)	or right.	(FORM 4)	ecovery of geothermal energy?	X								
I. Is this facility a proposed stationary source	which is	J. Is this facility a propo	sed stationary source which is	27 38 39								
one of the 28 industrial categories listed i structions and which will potentially emit	n the in-	NOT one of the 28 in	dustrial categories listed in the									
per year of any air pollutant regulated in	nder the	per year of any air poll	will potentially amit 250 tons utant regulated under the Clean									
Clean Air Act and may affect or be locat attainment area? (FORM 5)		Air Act and may affect area? (FORM 5)	t or be located in an attainment	X								
III. NAME OF FACILITY	40 41	2 (aleas (FONM 5)		43 44 45								
1 SKIP KERR-MCGEE C												
1 KERR - MCGEE C	H_E_M_I_C_A_L_	_C_O_R_P_O_R_A_T_I_(),N,									
IV. FACILITY CONTACT		CANAL PROPERTY OF THE PROPERTY										
	E (last, first, & title)		B. PHONE (area code & no.)	et die Admidikan in School de								
2 ARMSTRONG, C. B.		1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									
12 A K II D I K O N G, C. B.	PLANT MA	AN A G E R 7.0	0,2 5,6,5 8,9,0,1									
V. FACILITY MAILING ADDRESS		THE PERSON NAMED IN THE PE	49	777								
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B. CITY OR TOW	N	C.STATE D. ZIP CO	DE									
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VI. FACILITY LOCATION			and the same of th	www.marunosa.								
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B. COUNTY NAME		•••										
CLARK	1 1 1 1 1 1			1								
46 A A A A		70										
C. CITY OR TOW	N .	D.STATE E. ZIP CO	DE F. COUNTY CODE									
6 HENDERSON	1 1 1 1 1 1 1	N V 8 9 0 1	(if known)	agencia.								
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EPA Form 3510-1 (6-80)		361.37	CONTIN	LIF ON REVERSE								

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ONTINUED FROM THE FRONT	
/II. SIC CODES (4-digit, in order of priority)	
A. FIRST	B. SECOND
[2] 8 1 9 (specify) See Item XII below	c (specify)
9 16 - 19	15 16 - 19
C. THIRD	D. FOURTH
(specify)	(specify)
5 16 - 19	19 16 - 19
/III. OPERATOR INFORMATION	
A. NAME	B. Is the name listed
TEDD M. CTE OTHER CAT COR	Item VIII-A aiso t
KERR-MCGEE CHEMICAL COR	PORATION YES - NO
3 16	55 66
C. STATUS OF OPERATOR (Enter the appropriate letter into the answer	r box; if "Other", specify.) D. PHONE (area code & no.)
F = FEDERAL M = PUBLIC (other than federal or state) S = STATE O = OTHER (specify)	pecify) c
S = STATE O = OTHER (specify) P = PRIVATE	A 702 565 8901
E. STREET OR P.O. BOX	15 16 - 18 19 - 21 22 - 28
. O. BOX 55	
F. CITY OR TOWN	G.STATE H. ZIP CODE IX, INDIAN LAND
	Is the facility located on Indian lands?
HENDERSON	NV 8 9 0 1 5 S WE NO
	40 41 42 47 - 51
EXISTING ENVIRONMENTAL PERMITS	
	from Proposed Sources
	from Proposed Sources)
N N V 0 0 0 0 7 8 9 P	
B. UIC (Underground Injection of Fluids) E. OTHER	30
B. OIC (Underground Injection of Fluids) E. OTHER	
	(specify) 22 permits issued by APCD
16 17 18 30 15 16 17 18	Clark County Health District
C. RCRA (Hazardous Wastes) E. OTHER	
TRIT	(specify)
15 17 15	land and and and and and and and and and
THE RESERVE OF THE PARTY OF THE	
I. MAP	
I. MAP Attach to this application a topographic map of the area extending to	at least one mile heyand property boundaries. The man must at
Attach to this application a topographic map of the area extending to the outline of the facility, the location of each of its existing and or	at least one mile beyond property boundaries. The map must show
Attach to this application a topographic map of the area extending to the outline of the facility, the location of each of its existing and preatment, storage, or disposal facilities, and each well where it injury.	at least one mile beyond property boundaries. The map must show oposed intake and discharge structures, each of its hazardous waste ts fluids underground. Include all springs, rivers and other surface.
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Form 3510-1 (6-80)

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III. PROCESSES (continued) SPACE FOR ADDITIONAL PROCESS CC INCLUDE DESIGN CAPACITY.

DESCRIBING OTHER PROCESSES (co

OR EACH PROCESS ENTERED HERE

Filtration of sodium chlorate waste solids. Line 5. Slurry is thickened in 2,500-gallon cone-bottomed settling tank and filtered on a 3' x 4' rotary vacuum filter. Cake is sent to landfill. is returned to process.

FPA HAZARDOUS WASTE NUMBER — Enter the four-digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

ESTIMATED ANNUAL QUANTITY - For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

UNIT OF MEASURE -- For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	`	KILOGRAMS	K

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

PROCESSES:

PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code/s/ from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code/s/ from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

)TE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by ore than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.

In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter

'included with above" and make no other entries on that line.

3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

AMPLE FOR COMPLETING ITEM IV (shown in line numbers X-1, X-2, X-3, and X-4 below) — A facility will treat and dispose of an estimated 900 pounds year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

	H	٩z	A	A ₹D.	B. F	TSTIM	ATEDA	NNUAL	C.		IIT FA-	D. PROCESSES												
) [W A	۱s:	ΤE	NO de)	Q!	JANT	ITY OF	WASTE	16	UR ente ode	E ?r		1. PROCESS CODES (enter)					ES	;			2. PROCESS DESCRIPTION (if a code is not entered in D(1))		
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	D	0	0	2			400			P		T	0	3	D	8	0		1		7		r	
	D	0	0	1			100			P		T	0	3	D	8	0				1	-1	٠.	
	D	0	0	2									1	-			-	7	1					included with above

. Form 3510-3 (6-80)

NOTE: Photocopy this page before completing if you	have more t		Form Approved OMB No. 158-S80004
EPA I.D. NUMBER (enter from page 1)	', \ \	FOR OFFICIA. "ISE	O. A
WNVD008290336, 1		b U P	DUP
IV. DESCRIPTION OF HAZARDOUS WAST		ued)	13 (4 (5) 2) 3
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EPA I.D. NO. (enter from page 1)		•				
NVD008290330 6		·			•	
/. FACILITY DRAWING						
All existing facilities must include in the space provided on /I.PHOTOGRAPHS	n page 5 a scale draw	ing of the facility <i>(see in</i>	nstructions for mo	re oetail).		
All existing facilities must include photographs (ae.	rial or ground—lev	el) that clearly deline	eate all existing	structures	s; existing storage,	
treatment and disposal areas; and sites of future sto 'II. FACILITY GEOGRAPHIC LOCATION	orage, treatment o	r disposal areas <i>(see i</i>	instructions for i	nore deta	il).	
LATITUDE (degrees, minutes, & second	ls)	L.C	NGITUDE (degre	es, minutes	s, & seconds)	
360230			1 1 5	00	0 0	
III. FACILITY OWNER			72 - 74	75 75 77	77	
A. If the facility owner is also the facility operator as skip to Section IX below.	listed in Section VI	II on Form 1, "General	Information", plac	ce an "X" i	in the box to the left	t and
B. If the facility owner is not the facility operator as	listed in Section VII	Lon Form 1 complete	the following item	·c.		
	ILITY'S LEGAL OW		the tonowng item		HONE NO. (area coo	de & no.i
3. STREET OR P.O. BOX		4. CITY OR TOW	N	55 56 -	58 59 - 61 62 6. ZIP CODE	<u> </u>
	Ġ G	4. c		3.31	6. ZIP COD.	<u>-</u>
X. OWNER CERTIFICATION	45 16					+
certify under penalty of law that I have personally	v examined and an	n familiar with the in	formation subm	itted in t	his and all attache	d d
ocuments, and that based on my inquiry of those ubmitted information is true, accurate, and complete	individuals immed ete. I am aware tha	iately responsible for at there are significan	r obtaining the in at penalties for s	nformatio ubmitting	n, I believe that to false information	he 1
ncluding the possibility of fine and imprisonment.				aonn en 19	·	'/
NAME (print or type)	B. SIGNATURE	()21/	11	C. DATE	E SIGNED	
J. R. Kelley, Vice President Gen. Mgr. Electrolytic Produ	cts Div.	SHE KILL	Key	11	118/80	
OPERATOR CERTIFICATION						
certify under penalty of law that I have personally ocuments, and that based on my inquiry of those in the control of the cont	individuals immed	iately responsible for	obtaining the in	nformatio	n. I believe that ti	he
ubmitted information is true, accurate, and completeluding the possibility of fine and imprisonment.	ete: I am aware tha	at there are significan	t penalties for s	ubmitting	false information	1,
NAME (print or type)	B. SIGNATURE		<u></u>	C. DATE	E SIGNED	
A Form 3510-3 (6-80)	2.00	4055	~. ·		CONTINUE	MPAGE

cess codes from Item D(1) OI

Continued from the front.

V. DESCRIPTION OF HAZARDOUS WASTES E. USE THIS SPACE TO LIST ADDIT



November 14, 1980

Mr. Bill Wilson
Permit Contact
EPA Region KX
Attention A-3-2
215 Fremont Street
San Francisco, CA 94105

Dear Mr. Wilson:

Enclosed are Forms 1 and 3 for Application for a Hazardous Waste Permit for Kerr-McGee Chemical Corporation's Henderson, Nevada, operations. These forms are consistent with our "Notification of Hazardous Waste Activity" with the following exceptions:

- 1. We are deleting hazardous waste No. U129, having disposed of all the remaining quantities of this material and not expecting to use it in the future.
- 2. We are deleting hazardous waste No. U160, having determined that we generate no waste that is defined as hazardous from the use of this material.
- We are adding hazardous waste No. D002.
 This was inadvertently omitted in the notification since it is treated onsite and thus rendered nonhazardous.

We trust this meets with your satisfaction.

Sincerely,

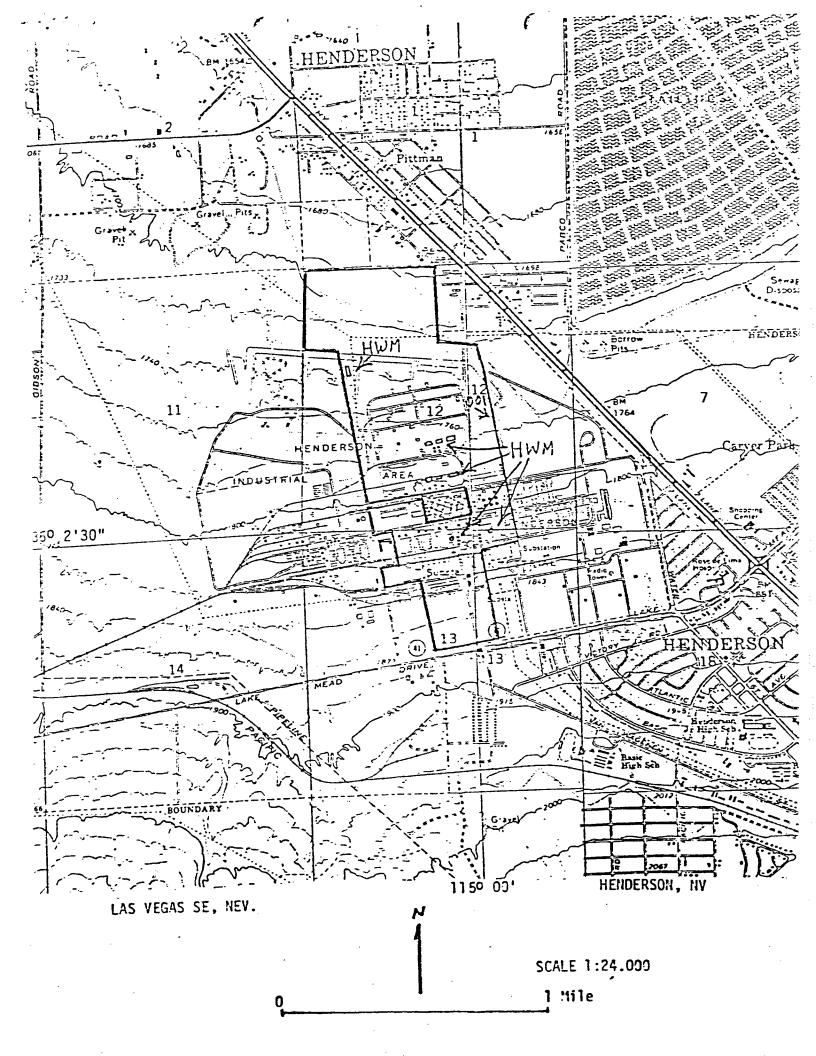
灯. R. Kelley

Vice President Electrolytic Division

Enclosures

Steame of the or type in the unshaded acts only the characters finch).	·		Form Approved Units 110, 150-H0115
			I. EPA I.D. NUMBER
	RAL INFORM	param	FNV D008290330
(Read the "G	eneral Instructions	before starting.)	GENERAL INSTRUCTIONS
EASELTIEMS		/////	If a preprinted label has been provided, affix
I. EPA I.D. NUMBER		//////	it in the designated space. Review the information carefully; if any of it is incorrect, cross
++++++	/////	//////	through it and enter the correct data in the
III. FACILITY NAME	//////	//////	appropriate fill—in area below. Also, if any or the preprinted data is absent (the area to the
FACILITY			left of the label space lists the information that should appear), please provide it in the
V. MAILING ADDRESS PLA	CE LABEL IN	THIS SPACE	proper fill—in area(s) below, if the label is
77777	////	/ / / / / / /	complets and correct, you need not complete Items I, III, V, and VI (except VI-B which
	/ / / / /	//////	must be completed regardless). Complete at items if no label has been provided. Refer to
VI FACILITY	/////		the instructions for detailed item descrip
VI. LOCATION			tions and for the legal authorizations unde which this data is collected.
II. POLLUTANT CHARACTERISTICS		t -isit applies	tion forms to the EPA If you answer "ves" to any
INSTRUCTIONS: Complete A through J to datermine we questions, you must submit this form and the supplement of the supple	thether you need to the	submit any permit applica naranthesis following the	question. Mark "X" in the box in the third column
I must one you must submit this torm and the supplement	id, form more		three forms. You may snewer "no" if your activity
if the supplemental form is attached. If you answer "no" is excluded from permit requirements; see Section C of the	instructions. See also	o, Section D of the instruct	tions for definitions of bold—faced terms.
	MARK	SPECIF	IC QUESTIONS YES NO ATTACH
SPECIFIC QUESTIONS	YES NO ATTACHED	B. Does or will this facil	lity (either existing or proposed)
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.?	x	include a concentrat	ad animal feeding operation or section facility which results in a
(FORM 2A)	A	discharge to waters of	f the U.S.? (FORM 28)-
hab currently results in discharges		D. Is this a proposed fac	citity (other than those described hich will result in a discharge to X
to waters of the U.S. other trian tribse describes	22 23 24	waters of the U.S.? (F	ORM 2D) 29 24 27
A or B above? (FORM 2C)		municipal effluent b	inject at this facility industrial or elow the lowermost stratum con-
E. Does or will this facility treat; store, or dispose of hazardous wastes? (FORM 3)	X	taining within one	quarter mile of the well-bore, X
and the second s	26 29 36	<u> </u>	inject at this facility fluids for spe-
Do you or will you inject at this facility any produced water or other fluids which are brought to the surface		rial processes such t	es mining of sulfur by the Frasch (
in connection with conventional-oil or natural gas pro- duction, inject fluids used for enhanced recovery of		process, solution mi	ning of minerals, in situ combus- or recovery of geothermal energy?
i of natural cas, or inject fluids for storage of the	34 38 34	(FORM 4)	37 30 30
hydrocarbons? (FORM 4)		J. Is this facility a pro	oposed stationary source which is industrial categories listed in the
one of the 28 industrial ententially emit 100 tons	s	instructions and whi	ich will potentially emit 250 tons
per year of any air pollutant regulated under the	X	Air Act and may aff	fect or be located in an attainment
clean Air Act and may affect or be located in an attainment area? (FORM 5)	40 41 42	area? (FORM 5)	
III. NAME OF FACILITY			
SKIPKERR-MCGEE CHE	MICAL C	ORPORAT	I,O,N,
12 10 - 22 30			
IV. FACILITY CONTACT	first, & title)		B. PHONE (area code & no.)
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2 ARMSTRONG, C. B. PLF	NI MAN	A G L K	
V. FACILITY MAILING ADDRESS			
A. STREET OR P.C	S. BOX		
3P. O. BOX 55			
31		C.STATE D. ZI	P CODE
a. CITY OR TOWN	-1-1-1-1-1	N V 3 9	015
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VI. FACILITY LOCATION	为一种,	CHIEF CONTRACTOR	
A. STREET, ROUTE NO. OR OTHER	SPECIFIC IDENTI	FIER	
ELAKE MEAD DRIVE			
		46)	
B. COUNTY NAME		1 1 1 1 1 1 1 1 1	
CLARK			The second secon
C. CITY OR TOWN		D.STATE E.Z	IP CODE F. COUNTY CODE
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6 HENDERSON			· · · · · · · · · · · · · · · · · · ·

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THE C. THIRD.			·	FOURTH	T
((specify)		7 (5;	pecify)		
		73 76 2 10			
II. OPERATOR INFORMATION					B. Is the name listed in
	A. NAME	, , , , , , , , , , , , , , , , , , , 	1111	1111	Item VIII-A also the owner?
FRR-MCGEE CHEMIC	AT COR	PORATI	ON		₩ YES WO
				28	66
C. STATUS OF OPERATOR (Enter the appropriate	e letter into the answe	r box; if "Other", sp	ecify.) -	D. PHONE (ar	ea code & no.)
Charles of the state of the sta	a= etate	pecify)	_	7025	5 5 8 9 0 1
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F. CITY OR TOWN-		G.STATE		X. INDIAN LAND	
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191	16 17 18		Cla	rk County Hea	lth District
C. RCRA (Hazardous Wastes)		R (specify)		. La vijaštijas eti esti ili. Ha	<u> </u>
9			(specif	y)	·
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(I, MAP)					
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Attach to this application a topographic map of the outline of the facility, the location of each treatment, storage, or disposal facilities, and each treatment.	of its existing and i	proposeu make a ects fluids underg	round. Include	e all springs, rivers	and other surface
water bodies in the map area. See instructions for	precise requiremen	its.	:		
XII. NATURE OF BUSINESS (provide a brief description				Contraction of	
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boron tribromide, elemental	l boron.				
Dolon Cambridge					
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XIII. CERTIFICATION (see instructions)		ALC: THE PARTY	1362 m/H		- Line Haste
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I certify under penalty of law that I have person attachments and that, based on my inquiry of	f those persons im	mediately respons	sible for obtai	ning the information	n contained in the
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PROCESSES (continued)

PACE FOR ADDITIONAL PROCESS CODES OR FOH DESCRIBING OTHER PROCESSES (CODE "TO. J. COR EACH PROCESS ENTERED HERE

Filtration of sodium chlorate waste solids. Slurry is thickened Line 5. in 2,500-gallon cone-bottomed settling tank and filtered on a 3' x 4' rotary vacuum filter. Cake is sent to landfill. Filtrate is returned to process.

'. DESCRIPTION OF HAZARDOUS WASTES EPA HAZARDOUS WASTE NUMBER — Enter the four-digit number from 40 CFR, Support D for each listed nazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

ESTIMATED ANNUAL QUANTITY — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual bass. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

UNIT OF MEASURE - For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate ces are:

CODE	METRIC UNIT OF MEASURE CODE
ENGLISH UNIT OF MEASURE CODE	KILOGRAMS
POUNDSP	
TONS	METRIC TONS
TONE	

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

PROCESSES

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item III 1. PROCESS CODES:

to indicate how the waste will be stored, treated, and/or disposed of at the facility. to indicate now the waste will be stored, treated, mispon disposes of the codes of contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form,

IOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by fore than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.

quantity of the waste and describing an tile processes to be used to describe the waste. In column D(2) on that line enter 2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.

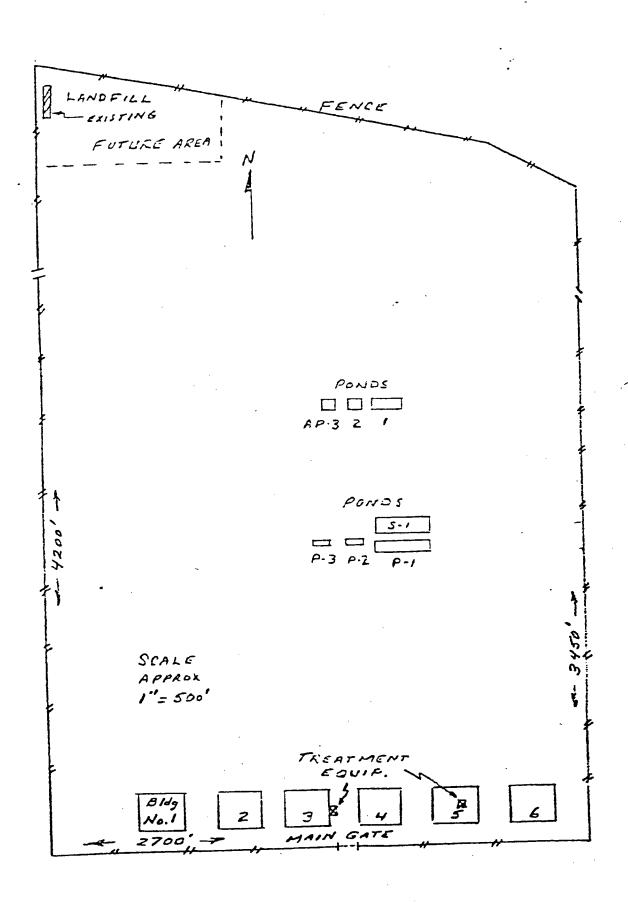
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV (shown in line numbers X-1, X-2, X-3, and X-4 below) — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated and there will be an estimated 200 pounds per year of each waste. 00 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

00,			C. UNIT	T											1	D. PROCESSES
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arrailed from page 2. DTE: Priorocopy this page before completing if	ave more t	han 26 wastes to list. FOR OFFICIAL USE	Pami Approved UMS No. 155-380004
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N V D O O 8 2 9 0 3 3 0 1	<i>\</i> \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	11:	
V. DESCRIPTION OF HAZARDOUS WAST	1 C. UNII 1	(uea)	D. PROCESSES
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V. FACILITY DRAWING All existing facilities must include in the space provided	on page 5 a scale drawing of the facility (see instruction	ns for more detail).
	(aerial or ground—level) that clearly delineate all	existing structures; existing storage,
existing facilities must include processing and disposal areas; and sites of future	storage, treatment or disposal areas (see instruct	ions for more detail.
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VIII. FACILITY OWNER		" I was an "Y" in the house of a left and
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skip to Section IX below.		
B. If the facility owner is not the facility operator	or as listed in Section VIII on Form 1, complete the fol	lowing items:
	ACILITY'S LEGAL OWNER	2. PHONE NO. (area code & no)
	ACICITY	
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11111	4. CITY OR TOWN	5.ST. 6. ZIP CODE
3. STREET OR P.O. BOX	<u>c</u>	
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IX. OWNER CERTIFICATION	nally examined and am familiar with the informa	ation submitted in this and all attached
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IX. DESCRIPTION OF HA	ZARDOUS WASTES	(continued from	front)		Transcon Consulta Inches
A. HAZARDOUS WASTES FROW waste from non-specific sou				rom 40 CFR Part 261.31 for	each listed hazardous
F 0 0 1 23 - 26 7	F 0 0 3 2 F 0 0 3 23 - 25 8	3 F 0 0 5 23 - 26 9	23 - 26	5 23 · 25 11	23 - 26 12 12
B. HAZARDOUS WASTES FRO specific industrial sources you				CFR Part 261,32 for each li	sted hazardous waste from
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D. LISTED INFECTIOUS WAS hospitals, medical and research					from hospitals, veterinary
E. CHARACTERISTICS OF NO				rresponding to the character	54 23 26 istics of non–listed
hazardous wastes your installa	□2. 6	FR Parts 261.21 — . CORROSIVE	3. RE	ACTIVE	☑ 4. TOXIC
X. CERTIFICATION	(D002)		(D003)	(D000)
I certify under penalty of attached documents, and t I believe that the submitte mitting false information, is	'hat based on my inqı d information is true,	uiry of those ind , accurate, and co	ividuals immediate omplete. I am awa	ely responsible for obtain	ning the information.
SIGNATURE		NAME & OFF	ICIAL TITLE (type o	or print)	DATE SIGNED
6. Blumsten	59	C. B. A	rmstrong,	Plant Manager	8/12/80
EPA Form 8700-12 (6-80) REV	/ERSE				

hange notif. form to reflect this



November 14, 1980

Mr. Bill Wilson
Permit Contact
EPA Region KX
Attention A-3-2
215 Fremont Street
San Francisco, CA 94105

Dear Mr. Wilson:

Enclosed are Forms 1 and 3 for Application for a Hazardous Waste Permit for Kerr-McGee Chemical Corporation's Henderson, Nevada, operations. These forms are consistent with our "Notification of Hazardous Waste Activity" with the following exceptions:

- 1. We are deleting hazardous waste No. U129, having disposed of all the remaining quantities of this material and not expecting to use it in the future.
- 2. We are deleting hazardous waste No. U160, having determined that we generate no waste that is defined as hazardous from the use of this material.
- 3. We are adding hazardous waste No. D002. This was inadvertently omitted in the notification since it is treated onsite and thus rendered nonhazardous.

We trust this meets with your satisfaction.

Sincerely,

J. R. Kelley / Vice President

Electrolytic Division

Enclosures

NUD 008290350



May 14, 1982

CERTIFIED MAIL - NO. P26 0233534 RETURN RECEIPT REQUESTED

Mr. Bill Wilson, Chief
Technical Assessment Section
Toxics and Waste Programs Branch
U. S. Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, CA 94105

Re: First Quarter 1982 RCRA Groundwater Monitoring Data

Dear Mr. Wilson:

Please find attached in Table I, first quarter 1982 RCRA groundwater monitoring data for the Kerr-McGee Chemical Corporation facility in Henderson, Nevada. This data summary is supplied in accordance with 40 CFR 265.94(2)(i).

The arsenic concentration in downgradient well H-28 exceeds the EPA National Interim Primary Drinking Water Standard (NIPDWS) of 0.05 mg/l. The NIPDWS level of 0.01 for cadmium is exceeded in all wells except downgradient well M-4, while the NIPDWS level for chromium of 0.05 mg/l is exceeded in all wells except downgradient well H-28. The silver concentration in downgradient well M-3 also exceeds the NIPDWS level of 0.05 mg/l.

Additionally, the NIPDWS gross alpha level of 15 PCI/1 is exceeded in well H-28. At this time we are investigating possible causes for these exceedances. No other values exceed NIPDWS levels.

Sincerely,

C. B. Armstrong Plant Manager

CBA: jc Attachment

TABLE I
FIRST QUARTER 1982 RCRA GROUNDWATER MONITORING DATA
DRINKING WATER PARAMETERS

KERR-McGEE CHEMICAL CORPORATION Henderson, Nevada Facility

	Upgradient Well		Downwad	ient Wells	
Parameter	M-1	M-2	M-3	M-4	H-28
Arsenic (mg/l)	0.01	0.02	0.02	<0.01	0.47
Barium	0.21	0.18	0.37	<0.12	0.08
Cadmium	0.03	0.04	0.06	0.01	0.02
Chromium	12.2	9.0	31.1	0.18	0.03
Fluoride	1.00	0.95	1.00	1.00	0.55
Lead	<0.01	<0.01	<0.01	<0.01	<0.01
Mercury	0.001	<0.001	0.001	0.001	<0.001
Nitrate (as N)	0.91	0.45	<0.10	0.80	<0.10
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	0.04	0.05	0.06	0.02	0.02
Endrin	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Lindane	<0.004	<0.004	<0.004	<0.004	<0.004
Methoxychlor	<0.01	<0.1	<0.1	<0.1	<0.1
Toxaphene	<0.005	<0.005	<0.005	<0.005	< 0.005
2, 4-D	<0.10	<0.10	<0.10	<0.10	<0.10
2, 4, 5-TP Silvex	<0.01	<0.01	< 0.01	<0.01	<0.01
Total Radium (PCI/1)	<2	<3	<2	<2	<2
Gross Alpha (PCI/1)	<15	<15	<15	<15	81
Gross Beta (PCI/1)	<20	. <20	<20	<20	<40
Coliform Bacteria (#/100 ml)	<2.2	<2.2	<2.2	<2.2	<2.2
pH	7.3, 7.3 7.3, 7.3	7.3	7.3	7.6	7.0

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IX. DESCRIPTION OF HAZARDOUS	WASTES (continued from from	ont)	anganani nga salah salah Salah Salah Salah	The second second	33 (14))
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B. HAZARDOUS WASTES FROM SPECIFIC specific industrial sources your installation	SOURCES. Enter the four—digi handles. Use additional sheets if	it number from 40 CFR Part 261 necessary.	.32 for each lis	sted hazardoùs was	te from
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X. CERTIFICATION					
i certify under penalty of law that I hattached documents, and that based or I believe that the submitted information mitting false information, including the	n my inquiry of those indivi- on is true, accurate, and com	iduals immediately responsib uplete. I am aware that there	le for obtain	ing the informati	tion,
SIGNATURE	NAME & OFFICE	IAL TITLE (type or print)		DATE SIGNED	

EPA Form 8700-12 (6-80) REVERSE OF PHIS E/12/50

C. B. Armstrong, Plant Manager

8/12/80



November 14, 1980

Mr. Bill Wilson
Permit Contact
EPA Region KX
Attention A-3-2
215 Fremont Street
San Francisco, CA 94105

Dear Mr. Wilson:

Enclosed are Forms 1 and 3 for Application for a Hazardous Waste Permit for Kerr-McGee Chemical Corporation's Henderson, Nevada, operations. These forms are consistent with our "Notification of Hazardous Waste Activity" with the following exceptions:

- 1. We are deleting hazardous waste No. U129, having disposed of all the remaining quantities of this material and not expecting to use it in the future.
- 2. We are deleting hazardous waste No. U160, having determined that we generate no waste that is defined as hazardous from the use of this material.
- 3. We are adding hazardous waste No. D002. This was inadvertently omitted in the notification since it is treated onsite and thus rendered nonhazardous.

We trust this meets with your satisfaction.

Sincerely,

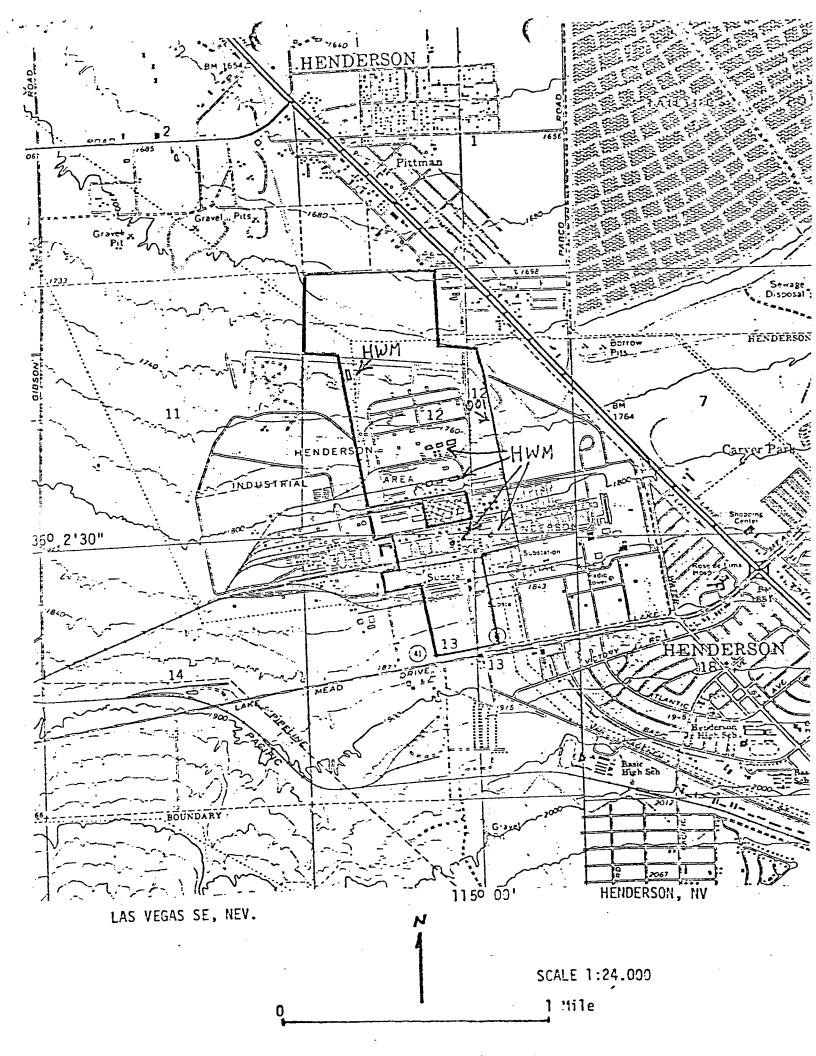
灯. R. Kelley

Vice President

Electrolytic Division

Enclosures

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II. SIC CODES (4-digit, in order of priority)		The state of the s		B. SECOND ."	10.2020.00
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VIII. OPERATOR INFORMATION					B. Is the name listed in
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VERR-MCGEE CHEM	ICAL COR	PORAT	ION		YES NO
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O TATUS OF OPERATOR (Enter the appro	priate letter into the answ	er box; if "Other",	specify.) -	D. PHONE	(area code & no.)
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C. RCRA (Hazardous Wastes)	विनाम गण		(2)	pecify)	
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XI. MAP		to at least one	nile hevond t	property bounderies.	The map must show
Attach to this application a topographic ma the outline of the facility, the location of e	p of the area extending and each of its existing and	proposed intak	e and dischar	ge structures, each o	its hazardous waste
the outline of the facility, the location of e treatment, storage, or disposal facilities, an	d each well where it in	jects fluids und	erground. Inc	lude all springs, rive	rs and other surface
water bodies in the map area. See instruction	12 for bicara radament				
XII. NATURE OF BUSINESS (provide a brief descri	iipuoii)				
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XIII. CERTIFICATION (see instructions)			ish sho infor	nation submitted in	this application and all
I certify under penalty of law that I have attachments and that, based on my inqu	personally examined at viry of those persons it	ng am ramiliar w Immediately r esp	onsible for o	btaining the informa	ation contained in the
the state of the lines that the intermation	is true, accurate and	CONTRACTOR OF CALL	aware that ti	nere are significant p	enalties for submitting
false information, including the possibility	Of title and imprisoner	PATURE		And the second of the second o	C. DATE SIGNED
J. R. Kelley, Vice Pres	ident/ (100	6000	• •	ullielas
General Mgr., Electrolytic	c Products	4/1/1	xen		11/10/80
COMMENTS FOR OFFICIAL USE ONLY					
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EPA Form 3510-1 (6-80) REVERSE					



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II. PROCESSES (continued) SPACE FOR ADDITIONAL PROCESS CODES OR FOR	DESCRIBING OTHER PROCESSES (code "TO4").	OR EACH PROCESS ENTERED HERE
INCLUDE DESIGN CAPACITY.		

Filtration of sodium chlorate waste solids. Slurry is thickened Line 5. in 2,500-gallon cone-bottomed settling tank and filtered on a 3' x 4' rotary vacuum filter. Cake is sent to landfill. is returned to process.

IV. DESCRIPTION OF HAZARDOUS WA	STES I THE STEEL S		A CONTRACTOR OF THE PARTY OF TH
A EPA HAZARDOUS WASTE NUMBER - E	for discountry from 60 CF	B Support D for each listed ha	zardous waste you will handle. If you
A EPA HAZARDOUS WASTE NUMBER - E	hter the four-bight number from 40 or	dieta en en estat from 40 CER S	ibnort C that describes the characterie
Link are mad listed	in 40 CER Subpart D. enter the four-	-digit numberts) from 40 CFA, 3	uppart of mat describes the characteris

- tics and/or the toxic contaminants of those hazardous wastes.
- B. ESTIMATED ANNUAL QUANTITY For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

UNIT OF MEASURE - For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate nces are:

ENGLISH UNIT OF MEASURE CODE	METRIC UNIT OF MEASURE CODE
ENGLISH UNIT OF MEASON	KILOGRAMSK
POUNDSP	METRIC TONS
TONS	

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item III 1. PROCESS CODES: to indicate how the waste will be stored, treated, and/or disposed of at the facility.

to indicate now the waste win be stored, deated, and/or dispose of the contaminant entered in column A, select the code/s/ from the list of process codes. For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code/s/ from the list of process codes. contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

- 2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.
- NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:
 - 1. Salect one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
 - 2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
 - 3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV (shown in line numbers X-1, X-2, X-3, and X-4 below) — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

		Г.					lc.	UNIT	- 1										D. PROCESSES
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skip to Section IX below.	,	-
B. If the facility owner is not the facility operator as list	sted in Section VIII on Form 1, complete the fo	ollowing items:
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IX. OWNER CERTIFICATION I certify under penalty of law that I have personally	examined and am familiar with the inform	nation submitted in this and all attached
I certify under penalty of law that I have personally documents, and that based on my inquiry of those in	ndividuals immediately responsible for obt	taining the information, I believe that the
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X. OPERATOR CERTIFICATION		
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50A Form 3510-3 (5-80)	PAGE 4 OF 5	

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

215 Fremont Street San Francisco, Ca. 94105 X/CWBH/ILD

TLH

RFW

RBC

TLH 3/30/82

CERTIFIED MAIL NO. P125847816 RETURN RECEIPT REQUESTED

In Reply E-5-2 Refer to: SOW-HAZ-6-6-2-6

125 MAR 1980

Mr. Charles B. Armstrong Plant Manager Kerr-McGee Chemical Corp. P.O. Box 55 Henderson, NV 89015

Dear Mr. Armstrong:

The United States Environmental Protection Agency (EPA) is currently seeking to identify sites where hazardous wastes have been disposed or are being stored for disposal. Under Section 308 of the Clean Water Act (CWA), 33 U.S.C. 1318, Section 114 of the Clean Air Act (CAA), 42 U.S.C. 7414, and Section 3007 of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6927, EPA is authorized to require records and other information as necessary to administer the CWA, CAA, and RCRA.

In order to determine whether hazardous wastes have been or are being disposed, stored or transported on or off your property you are hereby required to report the following information within 30 days of receipt of this letter.

GENERAL

- 1. When did your company begin manufacturing operations at your present location?
- 2. What products have been manufactured since operations began? Give trade names/common names and describe any changes with time.
- 3. Identify the raw materials used in the manufacturing operations described in 2 above (specific chemical compounds and common names).

SOLID WASTE

- 4. Identify the solid wastes produced by the manufacturing operations described in 1 through 3 above (specific chemical compounds and common names).
- 5. For those solid wastes that have been disposed of offsite (i.e., off your property and off BMI property) supply the following information:
 - *identity of wastes (specific chemical compound and common names)
 - *volume of wastes
 - *name and location of dump sites
- 6. For those solid wastes that have been disposed of onsite (i.e., on your property or on BMI property) supply the following information:
 - *identity of waste (specific chemical compounds and common names)
 - *volume of wastes
 - *disposal method (i.e., drums, burial, burning, etc.)
 - *dates when this disposal method began and ended for each identified waste product
- 7. Show by a simple map, drawn to scale, the locations of the active and inactive solid waste disposal sites described in 6 above.
- 8. Have any outside parties used your property for the disposal of their solid waste? If so
 - *identify the party
 - *identify the waste (specific chemical compounds and common names)
 - *specify the volume of the waste, the time period during which the waste was deposited on your property and show the location of the disposal site on the map described in 7 above.

- 9. If you consider solid wastes located on-site (i.e., on your property or on BMI property) to be stored rather than disposed
 - *identify the waste and its volume (specific chemical compounds and common names)
 - *identify the storage method (drums, burial, etc.)
 - *show the location of storage site(s) on the map described in 7 above.
- 10. If you have conducted any groundwater monitoring in the vicinity of your solid waste disposal or storage sites describe the location of the monitoring wells, their depths and the results of any groundwater analyses.

LIQUID WASTE

- 11. Identify the liquid wastes produced by the manufacturing operations described in 1 through 3 above (specific chemical compounds and common names). Identify and estimate the volume of liquid process wastes which enter the BMI storm and domestic waste (sewage) systems; the remainder of your liquid process waste stream is covered by the following questions.
- 12. For those liquid wastes that have been disposed of offsite (i.e., off your property and off BMI property) supply the following information:
 - *identity of wastes (specific chemical compounds and common names)
 - *volume of wastes
 - *name and location of dump sites
- 13. For those liquid wastes that have been disposed of on-site (i.e., on your property or on BMI property) supply the following information:
 - *identity of waste disposed of in leachbeds or directly on the earth's surface (specific chemical compounds and common names)

- *identity and volume of wastes disposed of in unlined ponds (specific chemical compounds and common names)
- *identity and volume of wastes disposed of in lined ponds (specific chemical compounds and common names)
- *dates when these disposal methods began and ended for each identified waste product
- 14. Show by a simple map, drawn to scale, the locations of the active and inactive liquid waste disposal sites described in 13 above.
- 15. If lined ponds have ever been used for the disposal of liquid wastes (see 13 above) describe the monitoring system used to detect leaks, estimate past and present leakage rates, identify those ponds which are leaking, and describe any plans to upgrade the pond linings.
- 16. Where are sludges and residues removed from the ponds disposed of?
- 17. If you consider liquid wastes located on-site (i.e., on your property or on BMI property) to be stored rather than disposed
 - *identify the waste and its volume (specific chemical compounds and common names)
 - *identify the storage method (drums, tanks, etc.)
 - *summarize significant leaks and spills
 - *show the location of storage site(s) on the map described in 14 above.
- 18. Have any outside parties used your property for the disposal of their liquid waste? If so
 - *identify the party
 - *identify the waste (specific chemical compounds and common names)
 - *specify the volume of the waste, the time period during which the waste was deposited on your

property and show the location of the disposal site on the map described in 14 above.

19. If you have conducted any groundwater monitoring in the vicinity of your liquid waste disposal or storage sites describe the location of the monitoring wells, their depths and the results of any groundwater analyses.

Section 309 of the CWA, 33 U.S.C. 1319, Section 113 of the CAA, 42 U.S.C. 7413, and Section 3008 of RCRA, 42 U.S.C. 6928, provide for civil or criminal penalties for failure to submit information and criminal penalties for knowingly making a false statement.

Your cooperation is appreciated.

Sincerely yours,

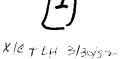
Clyde B. Eller

Director

Enforcement Division

cc: Marvin Tebeau, Nevada DEP







May 2, 1980

Mr. Clyde B. Eller, Director Enforcement Division United States Environmental Protection Agency Region IX 215 Fremont Street San Francisco, CA 94105

Reference: E-5-2

SOW-HAZ-6-6-2-6

Dear Mr. Eller:

The following information is provided in response to your request of March 25, 1980. The numbered statements are in the same order as the questions of your letter.

GENERAL

1. Operations

U. S. Government	-	194-	-	1945 ?
Western Electrochemical Company	-	1945	-	1955
American Potash & Chemical Corporation	-	1955	-	1967
Kerr-McGee Chemical Corporation	_	1967	_	Present

2. Products

A. U. S. Government

Magnesium Metal

B. Western Electrochemical Company

Sodium Chlorate	- 1945 - 1955
Potassium Chlorate	- 19 1955
Potassium Perchlorate	- 1945 - 1955
Ammonium Perchlorate	- 1951 - 1955
Manganese Dioxide	- 1951 - 1955

C. American Potash & Chemical Corporation

Same as B above - 1955 - 1967

Mr. Clyde B. Eller Page 2 May 2, 1980

D. <u>Kerr-McGee</u> Chemical Corporation

Sodium Chlorate	 1967	_	1980
Sodium Perchlorate	1968		
Potassium Chlorate	1967		
Potassium Perchlorate	1967		
Ammonium Perchlorate	1967		
Manganese Dioxide	1967		
Magnesium Perchlorate	1969		
Boron Trichloride	1973		
Boron Tribromide	1973		
Elemental Boron	1972		
Tumbleaf Defoliant	1975		

Other inorganic chemicals were produced at various times on an experimental basis or for a limited time period.

3. Raw Materials

Sodium Chlorate	-	sodium chloride + water
Sodium Perchlorate	-	sodium chlorate + water
Potassium Chlorate	-	sodium chlorate + potassium chloride
Potassium Perchlorate	-	sodium perchlorate + potassium chloride
Ammonium Perchlorate	-	sodium perchlorate + ammonia + hydrochloric acid
Magnesium Perchlorate	-	magnesium carbonate + ammonium perchlorate
Manganese Dioxide	-	manganese ore (pyrolusite) + sulfuric acid
Boron Trichloride	-	boron carbide + chlorine
Boron Tribromide	-	boron carbide + bromine
Elemental Boron	-	boric oxide + magnesium
Tumbleaf	-	sodium chlorate, borax, sodium carbonate, and surfactant

Mr. Clyde B. Eller Page 3 May 2, 1980

SOLID WASTE

4. Identity

- A. Chlorate Operations graphite
 calcium carbonate
 calcium sulfate
 diatomaceous earth (silica)
- B. Perchlorate Operations calcium carbonate chromium hydroxide diatomaceous earth
- C. Manganese Dioxide manganese ore (acid insoluble)
 heavy metal sulfides
 diatomaceous earth
 paraffin wax
 calcium sulfate

5. Off-Site Disposal

Barium Sulfide (drums), 709 cubic feet, to Nuclear Engineering Company, Beatty, Nevada

PCB Contaminated Solids (drums), 144 cubic feet, to Nuclear Engineering Company, Beatty, Nevada

6. On-Site Disposal

A. Chlorate Wastes - graphite, calcium carbonate, calcium sulfate

Company	Years	Estimated Volume-Cu.Ft.	Disposal Site
WECCO	1945-1950	52,000	BMI Ponds
WECCO	1951-1955	52,000	BMI Ponds
AP&CC	1956-1967	162,000	BMI Ponds
KMCC	1968-1974	125,000	BMI Ponds
KMCC	1975-1980	90,000	BMI Dump

Mr. Clyde B. Eller Page 4 May 2, 1980

B. Manganese Wastes - manganese ore, heavy metal sulfides, diatomaceous earth, paraffin wax

Company	Years	Estimated Volume-Cu.Ft.	Disposal Site
WECCO	1951-1955	95,000	Company Ponds Company Ponds Company Ponds KMCC Site
AP&CC	1956-1967	426,000	
KMCC	1968-1973	375,000	
KMCC	1974-1980	585,000	

C. Perchlorate solids are not measurable.

1951-1974 - Disposed to BMI ponds 1975-1980 - Disposed to company ponds

7. Location

(See attachment.)

8. Outside Parties

None

9. Storage

We do not consider on-site wastes to be stored, although some rearrangement may ultimately take place.

10. Ground Water Monitoring

None conducted.

LIQUID WASTE

11. Identity

Liquid effluents generated by the various processes described in 1-3 above are retained in several impervious ponds on KMCC property. Mosé are recycled back to the specific process after concentration through solar evaporation. In the summer months, once-through cooling water, up to 4 MM gallons/day, is discharged under the terms of an NPDES permit via the BMI storm drain to the Alpha Ditch.

Mr. Clyde B. Eller Page 5 May 2, 1980

12. Off-Site Disposal

None

13. On-Site Disposal

A. Combined Effluents (except Manganese Dioxide wastes)

Up to 1976, disposal was to BMI ponds. Average volume, based on 1970 NPDES report, 600,000 gallons per day. Average content:

Total Dissolved Solids		-	pounds/day
Total Solids	-	20,200	11
Suspended Solids	-	1,080	
C.O.D.	_	110	***
NH 3	_	35	11
Calcium	_	2,000	11
Iron	_	1,100	11
Potassium	_	1,200	11
Sodium	_	5,000	11
Magnesium	_	150	11
Zinc		130	11
	_	1,800	11
Manganese	_	1,000	11
Nickel	-		11
Lead	_	4	11
Copper	-	4	
Cobalt	_	1	. 5 ''
Chromium	_	0	. 3 ''
Phosphorous	_		. 4
THOSPHOLOGS		•	• •

B. Manganese Dioxide

Tailings described in 4C were slurried in water and disposed of on site (leach beds).

LOCATION

Daily volume - 86,000 gallons/day (estimate)
Total volume - 330 million gallons

C. Lined Ponds

Use of lined ponds started in 1974 and continues to the present. The ponds and the aqueous chemical solutions stored in them are listed below. Contained volume and composition are reported as of February 12, 1980.

Mr. Clyde B. Eller Page 6 May 2, 1980

Pond No.	Volume, Gallons	Source	Contents
<u>C-1</u>	1,730,000	Boiler, Cooling Tower Blowdown	63,400 lbs. NaCl
			22,450 ppm TDS
P-2	284,200	Ammonium Perchlorate & Sodium Chlorate	251,000 lbs.
		Operations	NaC1
			1,094,000 lbs. NaClO ₃
P-3	283,000	Sodium Chlorate Operations	193,400 lbs. NaCl
			440,000 lbs. NaClO ₃
<u>S-1</u>	660,000	Potassium & Boron Operations	345,000 lbs. NaCl
			100,200 lbs.
			NaC10 ₃ 139,200 1bs. NaC10 ₄
AP-1	353,000	Ammonium Perchlorate Operations	103,000 lbs. NaCl
			123,600 lbs. NaClO ₃
			135,300 lbs. NaClO ₄
AP-2	MT	Ammonium Perchlorate Operations	
AP-4	412,000	Ammonium Perchlorate Operations	120,000 lbs. NaCl
			34,300 lbs. NaClO ₄
			92,700 1bs. NH ₄ C10 ₄

Note: Contents of all ponds, except C-1 and S-1 are recycled to an appropriate process.

Mr. Clyde B. Eller Page 7 May 2, 1980

14. Location

(See attachment)

15. Pond Monitoring

The level of each pond is gauged each week. The ponds are sampled and analyzed every two to three weeks. The gauging, together with knowledge of activity in the use of the pond, has been considered adequate in detecting leaks. On this basis, pond P-1 was abandoned (and is now being rebuilt), and pond AP-2 is being rebuilt. Actual leakage rates have not been measured. Through experience, better liner materials and construction methods have been employed in the more recent ponds.

16. Residues

Dried residues from ponds P-1 and AP-2 have been removed to the BMI dump.

17. Storage

As indicated previously, contents of most lined ponds are recycled to a process. In that sense we do not consider the contents to be "waste," but rather process materials.

18. Outside Parties

Apparently the government used a dyked area at the northern part of KMCC's property for disposal of liquid wastes, presumed to be caustic solutions, i.e., sodium hydroxide. The quantity and time period are unknown. State Industries, a lessee, impounds pickling wastes in lined ponds. These are believed to be essentially spent sulfuric acid and ferrous sulfate (in water).

19. Ground Water Monitoring

None has been conducted.

Mr. Clyde B. Eller Page 8 May 2, 1980

Obviously it is difficult to briefly address 35 years of history for which there are few records and which involve several operations and four management entities with a high degree of completeness and accuracy. Accordingly, we will continue to assess the above data and will revise or modify them as may prove appropriate.

Sincerely

KERR-McGEE CHEMICAL CORPORATION

C. B. Armstrong Plant Manager

3 the milway

CBA: jc Attachments

cc: Marvin Tebeau

CERTIFIED MAIL NO. 882483

bcc: WBHayes/ILDenny-OKC

TLHurst-OKC RFWohletz





JUN 2 0 1980

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

215 Fremont Street San Francisco, Ca. 94105 711-RFW RBC-TLH 3/30/82-

CERTIFIED MAIL NO. Pl2 5828643 RETURN RECEIPT REQUESTED

In Reply E-5-2

Refer to: SOW-HAZ-6-6-2-6

Mr. C. B. Armstrong Plant Manager Kerr-McGee Chemical Corporation P.O. Box 55 Henderson, NV 89015

17 JUN 1980

Dear Mr. Armstrong:

On May 2, 1980 you responded to our letter of March 25, 1980 in which we requested information relating to your manufacturing operations and the solid and liquid wastes produced by these operations. We appreciate the time and effort that you expended in compiling this information. The activities you described in your letter have given us valuable insights into the waste disposal situation in Henderson.

In order to clear up the remaining questions we have concerning your waste-related operations you are required to report the following information within 10 days of receipt of this letter.

- 1. What is the relationship of Western Electrochemical Company, American Potash and Chemical Corporation and Kerr-McGee Chemical Corporation (your answer 1)? Has KMCC assumed the rights and obligations of WECCO and AP&CC?
- 2. Identify (specific chemical compounds and common names) the solid and liquid wastes produced by the boron operations. Estimate the total volume of solid and liquid wastes produced, describe the disposal method(s) and locate the disposal site(s) on a map drawn to scale. In answering these questions separate estimates should be given for the solid and liquid portions.

- 3. Explain the terms "company ponds" and "KMCC site" (your answer 6). Are these lined or unlined ponds? During what years were they used? Locate these ponds on a map drawn to scale.
- 4. With regard to your answer 13, estimate the total volume of liquid waste which has flowed into each lined disposal pond. What percent of this volume has been recycled into your operations?
- 5. On a map drawn to scale show the location of the leach beds which received slurried manganese dioxide waste (your answer 13).
- 6. When did the discharge of aqueous combined effluent (except manganese dioxide waste) to BMI ponds begin?
- 7. What is the total volume of liquid waste that has been disposed at pond AP-2? At pond P-1? For each pond list the operation from which the wastes originated and the total volume of waste that has been contributed from each operation.
- 8. What is the chemical composition of the dried residue in pond AP-2 and pond P-1? Estimate the volume of residue in each of these ponds that has been disposed of in the BMI dump.
- 9. Are the sludge residues in any of the lined ponds recycled? If so, give the pond number, the chemical composition of the sludge, the total volume of the sludge and the percentage recycled.
- 10. Where have the liquid wastes from the potassium perchlorate, sodium perchlorate and magnesium perchlorate operations been disposed? If these wastes have been disposed of in lined ponds, identify the waste producing operation, the pond number and the total volume of waste produced by each operation. If these wastes have been disposed of in unlined ponds give the above information and show the location of the disposal sites on a map drawn to scale.
- 11. Do liquid wastes that entered pond S-1 from the "potassium operations" include wastes from the potassium chlorate and potassium perchlorate operations? If not, identify the wastes, estimate the total volume of waste

disposed and show the location of the disposal site(s) on a map drawn to scale.

Under Section 308 of the Clean Water Act (CWA), 33 U.S.C. 1318, Section 114 of the Clean Air Act (CAA), 42 U.S.C. 7414, and Section 3007 of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6927, EPA is authorized to require records and other information as necessary to administer the CWA, CAA, and RCRA. Section 309 of the CWA, 33 U.S.C. 1319, Section 113 of the CAA, 42 U.S.C. 7413, and Section 3008 of RCRA, 42 U.S.C. 6928 provide for civil or criminal penalties for failure to submit information and criminal penalties for knowingly making a false statement.

If you need assistance in understanding these questions please contact Jon Merkle at (415)556-7841.

Your cooperation is appreciated.

Sincerely yours,

Clyde B. Eller

Director

Enforcement Division

cc: Marvin Tebeau, Nevada DEP



July 18, 1980

Mr. Clyde B. Eller, Director Enforcement Division United States Environmental Protection Agency Region IX 215 Fremont Street San Francisco, CA 94105

Reference: E-5-2

SOW-HAZ-6-6-2-6

Dear Mr. Eller:

The following information is provided in response to your request of June 17, 1980. The numbered statements are in the same order as the questions of your letter. Some of the answers are not directly responsive to the questions but are given after a telephone discussion between our Mr. R. Wohletz and your Mr. Jon Merkle concerning those particular questions. Based upon this discussion, we believe we are providing the desired information.

- Western Electrochemical Company merged into American Potash & Chemical Corporation and the latter subsequently merged into Kerr-McGee Chemical Corporation. In each instance, the surviving company succeeded to the rights and liabilities as provided by state law.
- 2. The liquid waste from the boron operations is an aqueous solution containing magnesium, sodium, sulfate, and borate ions. From 1972 until approximately 1976, this solution went to the BMI ponds. The volume of waste would have been about one million gallons. From 1976 to the present, this waste went first to pond P-l and then to pond S-l. These lined ponds are located on the enclosed map which is the same as the one transmitted with our May 2, 1980 letter. Total volume of these wastes would have been about one and a quarter million gallons. The only solid waste from these operations is elemental carbon powder. Up through 1979, this carbon was disposed of at the BMI dump and totaled approximately 100,000 pounds. Currently it is being hauled to the sanitary land fill operated by Silver State Disposal here in Clark County.

Mr. Clyde B. Eller Page 2 July 18, 1980

- 3. In clarification of our previous letter, manganese wastes have been handled in two ways in the history of this plant. As a dewatered filter cake, they have been hauled in a semidry form to a tailings pile, or they have been slurried and pumped to unlined ponds where the solids have been deposited on the surface and the water allowed to percolate into the ground. The two areas marked Mn tailings on the attached map are areas where the dewatered filter cake has been hauled. The area marked Mn tailings solid and slurried was first used as a ponding area for the percolation beds and subsequently used as a repository for semi-dry tailings on top of the old percolation ponds.
- 4. A response to this question will consist of a description of each membrane-lined pond and its service in the plant. The areas of the individual ponds are noted on the map and the volume contents as of February, 1980 were listed in our May 2, 1980 letter. We do not have a measure of the volumes to and from the ponds.

Pond C-1 is a waste pond which collects blowdown from our cooling tower and our steam plant and minor volumes of cleaning solutions used in the plant. This solution contains some sodium hexametaphosphate and small amounts of sulfamic acid.

Ponds AP-1 and AP-2 are used as part of the ammonium perchlorate process. Clear solution from either one of these ponds is used to sluice a filter cake, containing about 90-95 percent diatomaceous earth with perchlorates, some chromic hydroxide, and smaller quantities of calcium carbonate and magnesium hydroxide, to the pond basin. This solution is reused until such time that enough process material accumulates to return clear liquor to the process. The solution is not discharged. In effect, one pond is a spare for the other, and only one is in active service at a given time.

Pond AP-4 serves the ammonium perchlorate plant. Its primary function is to provide an emergency basin to catch unusual flows from the ammonium perchlorate plant cooling tower. It also collects a few minor flows from the process area. Liquor from this pond is used to make up for evaporation in AP-1 and AP-2 and thereby returned to the process.

Ponds P-1 and S-1 at various times have collected waste liquors from the potassium chlorate, potassium perchlorate, sodium perchlorate, and boron operations. The ponds contain sodium, potassium, magnesium, chloride, chlorate, perchlorate, borate and sulfate ions. There is no recycling from them.

Mr. Clyde B. Eller Page 3 July 18, 1980

> Ponds P-2 and P-3 are emergency ponds for the sodium chlorate plant to contain excess volumes that may accumulate due to process fluctuations or excessive rainfall. In addition, a caustic scrubbing solution from the ammonium perchlorate plant enters these ponds. Liquors from these ponds are recycled to the process.

- This question has been answered in Item 3 above. 5.
- Please refer to the original answers given on May 2, Items 1 through 6. Flows have been going to the BMI ponds since the days when the government operated the plant.
- 7. The pond usage described in Item 4 is believed to have supplied the desired information.
- See Item 4 above. We do not have an accurate measure of the solids disposed of in the BMI dump from AP-2 and P-1, but estimate them to be in the order of 50 tons each.
- No. 9.
- Prior to approximately 1976, these wastes were disposed of 10. to the BMI ponds as part of the combined effluent. After 1976, these wastes were disposed of to P-1 and then to S-1. The volume of these wastes cannot be accurately determined.

11. Yes.

We trust that the information in this letter and our response of May 2, 1980 allows you to appreciate the impossibility of providing more specific data, but we hope you have gained an adequate understanding of waste disposal practices at this facility. If you feel that still additional information is required, perhaps a field visit would be in order.

Sincerely,

KERR-McGEE CHEMICAL CORPORATION

C. B. Armstrong

Plant Manager

CBA: ic Attachment

Marvin Tebeau cc:

CERTIFIED MAIL NO. 0233497

bcc: WBHayes/ILDenny-OKC TLHurst-OKC

RFWohletz

-							,	•	***		TANGUAGA		**************************************
			S	0 L H	ERN N	IEVAD	A W A	TER S	Y S _ !		1/4)	TL	1-02-03
			INFLU	ent wate	R CHARACI	ERISTICS	*- LAKE	MEAD ELEV	ATION 105	0 ft.			Σ
SAMPLE NO.		1-72	2-72	5-72	8-72	3-73	6-73	8-73:	11-73	4-74	6-74	9-74	ħ
Alkalinity	ОН CO3	0 12	0 4	6 0	0 0	0 8 -	0						0 4
as CaOO3	HCO3	112	126	132	129	122	130	135	130	144	134	122	129
Aluminum	Al	_	_		0,	0	0	0.325	0.00		0.08		0.068
Arsenic	As						_		-				
Barium	Ba					_					_		
Bismuth	Bi	_					- '						
Boron	В		_	 ·			- ,	_				_	
Cadmium	Cđ	-		 .			· ·,	0.001			_	_	-0.001
Calcium	Ca	89.6	98	83	86	86	90	94	88	83.2	88.4	88.2	88.6
Carbon Dioxide	li li	8.5	1.5	3	4	2	1.9		5.3	1.6			3.5
Chloride	Cl	92	94	90	88	86	90	95	96	. —	84	86.4	90
Chlorine Resid	1	0	0	0.	0	0	0.	0	0		0	0	0
Chromium (Hex		<u>-</u>	.06	Tr <5	0 ~~	0 5	0	0.002					0.03
00202	alue	< 5	0	<5 	Tr 	5	5	0.007	<5 0.00				<5 .0035
Copper	Cu	0.3	0.4	0.5	0.1	0.4	0.4		·	,			0.35
Corrosion Inde	CN CN	0.3	0.4					·					
Cyanide Fluoride	F	0.5		0.5	0.6	0.33	0.37	0.62	0.68	0.58	0.61	0.48	0.53
1	CaCO3	340	332	336	332	328	332	365	316	312	296	310	327
Iron	ře	0.06			0.02	0.022	_	0.047	 ⁷ .	<0.01	<0.01	<0.01	0.025
Lead	Pb	_		- '	— <u>_</u>			0.015	 ,				0.015
Lithium	Li		_					_					
Magnesium	Mg	28.1	22 -	28	29	27	26	31.5	23.3	24.6	24.3	28.6	26.6
Manganese	Mn	0	0	о́.		0	0	0.009		<0.01	0.0	<0.01	0.003
Molybdenum	Mo	_	- .					0.008	_			-	0.008
Nickel	Ni	_	_			 .	 '	_					
Nitrogen Ammo	nia N	0.1	0.1	0.1	0.06	0.12		Tr	Tr			Tr	0.076
Nitrate	N			0.43	2.4	2.12	1.7	0.15	0.50	0.32		0.26	0.99
Nitrite	N	.01	.18 ,	Tr	0.6	0.12	0	· 	0.0				0.15
Nitrogen Orga		-						 '	• '		 ,	•	-
•	TON	3	2	2	4	2	4	2 :	2 -	2	2	2	2.5
Oxygen Dissol		11	8.3	7.5	3.5	9.1	8.3	6.4	4.1	9.2	7.6	5.0	7.0
1.	lue	8.1	8.2	8.1	7.7	8.2	8.2	7.7	7. 7 :	8.2	8.0	8.0	8.0
Phenols	_								0.34	0.10	0.02		0.149
Phosphate	P	.05	.13		0	.43	.07 	0.45 4.96	0.14	0.18	0.02	0.01	0.148 4.96
Potassium	K (TDS)	767	845	761	 766	 735	 741	731	722	 746	 705	 746	4.96 751
•	iO ₂	9	9	10	766 9	· 8	741 8	73,1	10	746 7.5	705 8	746	8.7
Sodium S	Na Na					102	105	106.6	121.6		100	105	106.7
Spec Cond. u-		1155	1145	1144	1238	1101	1073	1065	1024	1072	1086	1148	1114
Strontium	Sr	_	_					0.135					0.135
Sulfate	50 ₄	290		320	320	320	290	345	325	286	305	315 -	312
Temperature	°c	14	14	20.5	15 -	10	11.5		15	11.5	21.0	15.	15
Turbidity	TU	0.45	0.47	0.14	0.14	0.18	0.18		0.35	0.50	0.32	0.20	0.29
Zinc	Zn			<u> </u>	·			0.063	 .				0.063
Organic Carbo	on TOC	-	_		_			13.0		_		19	16
Coliform Bact	ml	_		3	G .	6	.2	5	24	15	7	12	9.4
Micro-organis	ans			_	-		-			160	466	346	324
Plankton/100	YILL				 nase indi	cated				100	300	240	324

*In my/l unless otherwise indicated

12/18/74

SOUTHERN NEVADA WATER SYSTEM 13 1931

COMPLETE PHYSICAL & CHEMICAL ANALYSIS

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Date Collected 3-9-81	Sample No. 20-9	Date Reported
Time Collected 1135	Sample Wash	Date Analyzed
	Date Received 3-9-81	Time Received 1230

Collected By	<u> </u>			pate Received		тые ке	œivei			-
Characterist	ic	Fou	nd	Date, Time, Analyst	Characteris	tic	Four	nd	Date, Ti Analys	
Alkalinity	ОН		mg/L		Manganese	Mn	0.12	mg/L	4/22,093	
as CaO3	∞₃		mq/L		MBAS		<0.01	mg/L	3/9,1200	JLF
,	НСО3	232	mg/L	3/9,1245LRL	Mercury	Нq	<0.001	mg/L	3/11,081	5JLF
AI		12.5		4/7,1500JWF	Molybdenum	Mo	0.064	mg/L	3/4,1400	JWF
Aluminum	Al	.46	mg/L	4/23,0900LRL	Nickel	Ni	0.08	mg/L	4/15,140	OJLE
Arsenic	As	.019	ma/L	4/16,1200LRL	Nitrogen Amm	onia N	3.8	mg/L	3/9,1430	JWF
Barium	Ba	<0.1	mg/L	4/22,1230JLF	Nitrogen Nit	rate N	<0.1	mg/L	3/9,1230	
Beryllium	Be	<.0025	mg/L	5/5,0930LRL	Nitrogen Nit	rite N	0.059	mg/L	3/9,1400	LRL
Boron	В	1.13	mg/L	3/11,1100JWF	Odor			NOT		
Cadmium	Cd	<0.002	mg/L	4/22,0800JLF	Oxygen Disso	lved O2		mg/L		
Calcium	Ca	208	ma/L	3/11.1145JLF	pН			value	3/9,1145	
Carbon Dioxio	le CO2	15.0	mg/L	4/7,1500JWF	Phosphate, To	otal P	<2.0	mg/L	2/10,100	0DKB
Chloride	Cl	354	mq/L	3/10,1245JLF	Potassium	K	26.2	mg/L	3/16,103	
Chlorine Resi	idual	0	mg/L	3/9,1145RW	Residue, fil	trable	2203	mg/L	3/10,112	
Chromium	Cr	<0.1	mg/L	4/22,1400JLF	Selenium	Se	0.008	mg/L	4/21,083	OJWE
Cobalt	Co	<0.01	mg/L	3/18,1000DKB	Silica	SiO ₂	25.6	mq/L	3/11,081	
Color		20	units	3/9,1430JLF	Silver	Ag	<0.01	mg/L	4/15,090	
Conductivity		3010	μS/cm	3/12,1000JWF	Sodium	Na	289	mg/L	3/16,113	OJI E
Copper	Cu	<0.02	mq/L	4/13,1130JLF	Strontium	Sr	2.6	mg/L	3/16,100	0JLF
Fluoride .	F	0.93	mg/I	3/10,1130JWF	Sulfate	SO4	876	mg/L	3/9,1530	JLF
Hardness	CaCQ3	876	mg/I	3/11,1045JLF	Temperature		15	°C	3/9,1145	
Iron	Fe	0.42	mg/I	4/21,1530JWF	Thallium		<0.01	mg/I	4/9,1030	JLF
LI .		0.4		4/7,1500JWF	Turbidity			NTU		
Lead	Pb	0.08	mg/I	4/13,0900JLF	Vanadium	V.	<0.05	_mg/I	3/9,1000	LRL
Magnesium	Ma	86	mg/I	3/11,1245,JL	Zinc	Zn	<0.25	mg/I	3/16,081	OJLF
		1								

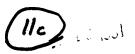
DEVIATIONS FROM ELECTRONEUTRALITY							
Cation (M	e/L)		Anion (Me/L)				
Calcium	.10		Bicarbonate	3.8			
Magnesium	7.1		Chloride	10.0			
Sodium	12.6		Sulfate	18.0			
Potassium	0.7		Silica	0.67			
				34.0			
TOTAL	B1.0	<u> </u>	TOTAL	34.0			
D.F.E.	05	<u> </u>	<u> </u>				

D.F.E. = $\frac{\text{Total Cation} - \text{Total Anions}}{\text{Total Cation} + \text{Total Anions}}$

Remarks

FORM 106N - S.N.W.S.

SOUTHERN NEVADA WATER SYSTEM



COMPLETE PHYSICAL & CHEMICAL ANALYSIS

			والأراب والمراوا والمراكب فيبرون والمناسون والمراوا والمراوا والمراوات والمراوات
Date Collected 3	-9-81	Sample No	Date Reported
Time Collected_		Sample Raw, PP#1	Date Analyzed
Collected By	L. Nagy	Date Received 3-9-81	Time Received

COTTECTED BY		<u> </u>		TOTAL TOTAL						
Characterist	ic	Foun	nd	Date, Time, Analyst	Characterist	tic	Four	ıđ.	Date, Tim Analyst	
Alkalinity	ОН		mg/L		Manganese	Mn	<0.002	mg/L	4/22,0930	JLF
as CaO3	ω,		mg/L		MBAS		<0.01	mg/L		
	НОО3	130	mg/L	3/9,1245LRL	Mercury	Hg	<0.001	mg/L	3/11,0815	JLF
AI		12.4		4/7,1500JWF	Molybdenum	Mo	0.024	mg/L	5/4,1400J	
Aluminum	Al	<.025	mg/L	4/23,0900LRL	Nickel	Ni	<0.01	mg/L	4/15,1400	JLF
Arsenic	As	<.01		4/16,1200LRL	Nitrogen Ammo	mia N	<0.05		3/19,1432	
Barium	Ba	<0.1	mg/L	4/22,1230JLF	Nitrogen Niti	rate N	0.4	mg/L		
Beryllium	Be	<.0025	mg/L	5/5,0930LRL	Nitrogen Niti	rite N	<0.005	mg/L	3/9,1400L	КL
Boron	В	0.27	mg/L					NOT		
Cadmium	Cđ	<0.002	mg/L	4/22,0800JLF	Oxygen Dissol	lved O2		mg/L		
Calcium	Ca	86	mg/L	3/11,1145JLF	рН			value	3/9,opera	
Carbon Dioxid	le CO ₂	2.1	mg/L	4/7,1500JWF	Phosphate, To	otal P	<0.02	mg/L	3/10,1000	
Chloride	Cl	86	mg/L	3/10,1245JLF	Potassium	K	5.7	mg/L	3/16,1030))TT
Chlorine Res	idual		mg/L		Residue, filt	trable	751	mg/L	3/10,1120	
Chromium	Cr	<0.1	mg/L		Selenium	Se	0.003	mq/L	4/20,0845	JWF
Cobalt	ထ	<0.01	mg/L	3/18.1000DKB	Silica	SiO ₂	6.0	mq/L	3/11,0815	JWF
Color		<2.5	units	3/9,1430JLF	Silver	Ag	<0.01	mg/L	4/15,0900	
Conductivity		1069	μS/cm	3/12,1000JWF	Sodium	Na	118	mg/L	3/16,1130	IJĹŦ
Copper	Cu	< 0.02	mg/L	4/15,1130JLF		Sr	1.0	mg/L		
Fluoride	. F	0.32	mg/I	3/10,1130JWF	Sulfate	SO4_	294	mg/L	3/9,1530J	ΠF
Hardness	CaCQ3	332		3/11,1045JLF	Temperature		14	°C		
Iron	Fe	0.010	mg/I	4/21,1030JWF	THATTIUL		<0.01	mg/I	4/9,10303	ЛF
LI .		0.30		4/7,1500JWF	Turbidity	•		NTU		
Lead	Pb	<0.005	mg/l	4/13.0900JLF		- V .	<0.05	mg/I		
Magnesium	Mg			3/11,1245JLF	Zinc	Zn	<0.25	mg/I	3/16,0810	'nΈ
1.		1								

DEVIAT	IONS FR	OM I	ELECTRONEUTRAL	TTY	
Cation (Me/L)			Anion (Me/L)		
Calcium	4.3		Bicarbonate	2.1	
Magnesium	2.3		Chloride	2.4	
Sodium	5.1		Sulfate	6.1	
Potassium	0.2		Silica	0.3	
TOTAL	12		TOTAL	11	
				<u> </u>	
D.F.E.	.05				

D.F.E. = Total Cation - Total Anions
Total Cation + Total Anions

Remarks

Laboratory Supt. 9

Date 5/8/8)

FORM 106N - S.N.W.S.

SOUTHERN NEVADA WATER SYSTEM_

MAR 1 7 1982

Lab I.D. #5

COMPLETE PHYSICAL & CHEMICAL ANALYSIS

II de S.N.W.S.

Date Collected	5/11/81	Sample No. $\frac{4}{}$	6-22	Date Ro	ported_		
Time Collected	1050	SampleR	law	Date An	alyzed_		
Collected By	R. Gregorio	Date Received	5/11/81	Time Re	œived_	111	5
Characteristic	Found	Date, Time, Analyst	Characteri	stic	Foun	nđ	Date, Time, Analyst
Alkalinity OH	mg/L		Manganese	Mn	0.002	mg/L	6/15,1000,JF
as CaOO3 OO3	mg/L		MBAS		<0.1		5/11,1230,JF
HOO3	132 mg/L	5/11,1530.DB	Mercury	Hq	<0.0005	mg/L	5/18,0800.JF
AI	12.1	2/22,1500,JF		Mo	<0.005		10/18,0830,KG
Aluminum Al	001 mg/L	DB	Nickel	Ni	<0.01		6/4,0800,JF
Arsenic As		6/8,0800,JF	Nitrogen Am		<0.5		5/11,1415,LRI
Barium Ba		6/15,0800,JF	Nitrogen Ni		0.55		5/12,0700,DB
Beryllium Be	<0.005 mg/L	5/18.0800.JF			<.005		5/11.1500.LRL
Boron B	<0.25 mg/L	5/13,0820,JF	Odor			TON	
Cadmium Cd	<0.0001 mg/L	9/25,1000,JF	Oxygen Diss	olved O2		mg/L	
Calcium Ca	86.4 mg/L	5/13,0950,LRI	рH		7.6		5/11,1115,JF
Carbon Dioxide CO2	5.3 mg/L	2/22,1500,JF	Phosphate,	Total P	0.02	mg/L	5/11,1230,JF
Chloride Cl	87 mg/L	5/13,1330,JF	Potassium	K	4.85	mg/L	5/20,1530,JF
Chlorine Residual	mq/L		Residue, fi	ltrable	734	mg/L	5/12,1115,JF
Chromium Cr	< 0.01 mg/L	7/13,1030,JF	SPC				
cobalt Co	<0.01 mg/L	10/14,0800,JI	Selenium	_ \$ e	0.008	mg/L	10/28,0800,KG
Color	< 2.5 units	5/11,1430,JF	Silica	SiO ₂	7.8	ma\r	5/13,1300,JF
Conductivity		5/12,1400,JF		Aq	<0.01		5/9,0800,JF
Copper Cu	< 0.001 mg/L	6/12,0800,JF	Sodium -	Na		mg/L	
Fluoride F	0.28 mg/I	5/12.1400.JL	Strontium	Sr	1,20	mg/L	5/21.1330.JF
Hardness CaCQ;	364 mg/1	5/13,0810,LRI	Sulfate	5 04	282	mq/L	5/14,0900,JF
Iron Fe	0.54 mg/l	10/16,0800,JI	Temperature		13	90	
LI .	-0.1	2/22,1500,JF	Thallium		0.02	mg/L	10/21,0800.JF
Lead Pb	<0.005 mg/I	10/13,0800,K	Turbidity	<u></u>	0.26	NTU	5/11,1540,JF
Magnesium Mg	35.9 mg/I	5/13,1120,LR		v.	<0.1		6/8,1200.JLF
			Zinc	Zn	<0.1		5/21,0930,JF

DEVIATI	ONS F	ROM I	LECTRONEUTRAL	LITA .	
Cation (M	e/L)		Anion (Me/L)		
Calcium	4.3		Bicarbonate	2.2	
Magnesium	3.0		Chloride	2.5	
Sodium	7.0		Sulfate	5.9	
Potassium	0.1		Silica	0.7	
TOTAL	14		TOTAL	11	
D.F.E.	0.15				
				· · · · · · · · · · · · · · · · · · ·	

D.F.E. = Total Cation - Total Anions
Total Cation + Total Anions

Remarks

Laboratory Supt. M

Date 3/12/82

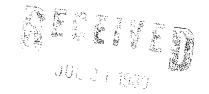
FORM 1060 - S.N.W.S.

July 18, 1980

Mr. Clyde B. Eller, Director Enforcement Division United States Environmental Protection Agency Region IX 215 Fremont Street San Francisco, CA 94105

Reference: E-5-2

SOW-HAZ-6-6-2-6



Environmental Protection

Dear Mr. Eller:

The following information is provided in response to your request of June 17, 1980. The numbered statements are in the same order as the questions of your letter. Some of the answers are not directly responsive to the questions but are given after a telephone discussion between our Mr. R. Wohletz and your Mr. Jon Merkle concerning those particular questions. Based upon this discussion, we believe we are providing the desired information.

- 1. Western Electrochemical Company merged into American Potash & Chemical Corporation and the latter subsequently mergainto Kerr-McGee Chemical Corporation. In each instance surviving company succeeded to the rights and liabiliti provided by state law.
- 2. The liquid waste from the boron operations is an aqueou solution containing magnesium, sodium, sulfate, and bor ions. From 1972 until approximately 1976, this solutio went to the BMI ponds. The volume of waste would have about one million gallons. From 1976 to the present, t waste went first to pond P-1 and then to pond S-1. The lined ponds are located on the enclosed map which is the same as the one transmitted with our May 2, 1980 letter. Total volume of these wastes would have been about one and a quarter million gallons. The only solid waste from these operations is elemental carbon powder. Up through 1979, this carbon was disposed of at the BMI dump and totaled approximately 100,000 pounds. Currently it is being hauled to the sanitary land fill operated by Silver State Disposal here in Clark County.

Mr. Clyde B. Eller Page 2 July 18, 1980

- 3. In clarification of our previous letter, manganese wastes have been handled in two ways in the history of this plant. As a dewatered filter cake, they have been hauled in a semidry form to a tailings pile, or they have been slurried and pumped to unlined ponds where the solids have been deposited on the surface and the water allowed to percolate into the ground. The two areas marked Mn tailings on the attached map are areas where the dewatered filter cake has been hauled. The area marked Mn tailings solid and slurried was first used as a ponding area for the percolation beds and subsequently used as a repository for semi-dry tailings on top of the old percolation ponds.
- 4. A response to this question will consist of a description of each membrane-lined pond and its service in the plant. The areas of the individual ponds are noted on the map and the volume contents as of February, 1980 were listed in our May 2, 1980 letter. We do not have a measure of the volumes to and from the ponds.

Pond C-1 is a waste pond which collects blowdown from our cooling tower and our steam plant and minor volumes of cleaning solutions used in the plant. This solution contains some sodium hexametaphosphate and small amounts of sulfamic acid.

Ponds AP-1 and AP-2 are used as part of the ammonium perchlorate process. Clear solution from either one of these ponds is used to sluice a filter cake, containing about 90-95 percent diatomaceous earth with perchlorates, some chromic hydroxide, and smaller quantities of calcium carbonate and magnesium hydroxide, to the pond basin. This solution is reused until such time that enough process material accumulates to return clear liquor to the process. The solution is not discharged. In effect, one pond is a spare for the other, and only one is in active service at a given time.

Pond AP-4 serves the ammonium perchlorate plant. Its primary function is to provide an emergency basin to catch unusual flows from the ammonium perchlorate plant cooling tower. It also collects a few minor flows from the process area. Liquor from this pond is used to make up for evaporation in AP-1 and AP-2 and thereby returned to the process.

Ponds P-1 and S-1 at various times have collected waste liquors from the potassium chlorate, potassium perchlorate, sodium perchlorate, and boron operations. The ponds contain sodium, potassium, magnesium, chloride, chlorate, perchlorate, borate and sulfate ions. There is no recycling from them.

Mr. Clyde B. Eller Page 3 July 18, 1980

Ponds P-2 and P-3 are emergency ponds for the sodium chlorate plant to contain excess volumes that may accumulate due to process fluctuations or excessive rainfall. In addition, a caustic scrubbing solution from the ammonium perchlorate plant enters these ponds. Liquors from these ponds are recycled to the process.

- 5. This question has been answered in Item 3 above.
- 6. Please refer to the original answers given on May 2, Items 1 through 6. Flows have been going to the BMI ponds since the days when the government operated the plant.
- 7. The pond usage described in Item 4 is believed to have supplied the desired information.
- 8. See Item 4 above. We do not have an accurate measure of the solids disposed of in the BMI dump from AP-2 and P-1, but estimate them to be in the order of 50 tons each.
- 9. No.
- 10. Prior to approximately 1976, these wastes were disposed of to the BMI ponds as part of the combined effluent. After 1976, these wastes were disposed of to P-1 and then to S-1. The volume of these wastes cannot be accurately determined.

11. Yes.

We trust that the information in this letter and our response of May 2, 1980 allows you to appreciate the impossibility of providing more specific data, but we hope you have gained an adequate understanding of waste disposal practices at this facility. If you feel that still additional information is required, perhaps a field visit would be in order.

Sincerely,

KERR-McGEE CHEMICAL CORPORATION

C. B. Armstrong Plant Manager

CBA:jc Attachment

cc: Marvin Tebeau

CERTIFIED MAIL NO. 0233497

ENVIRONMENTAL PROTECTION AGENCY

REGION IX

SURVEILLANCE & ANALYSIS DIVÍSION

NPDES Compliance Monitoring Report

Permittee: Kerr-McGee Chemical Corporation

Oklahoma City, Oklahoma

Facility: Kerr-McGee Chemical Corporation

Henderson NV

Permit No.: NV0000078

Date of Inspection: June 19, 1980

Inspection Participants:

EPA: Kenneth D. Greenberg

Environmental Engineer

Facility: Charles B. Armstrong

Plant Manager

Richard F. Wohletz

Superintendent, Plant Technical Services

Report Prepared by: Kenneth D. Greenberg

FINDINGS

Introduction

The Kerr-McGee Chemical Corporation operates an inorganic chemical production plant at the Basic Management, Inc. (BMI) industrial complex in Henderson, Nevada. The Kerr-McGee facility is subject to NPDES Permit No. NV0000078 which became effective on February 24, 1977 and expires on September 30, 1981. Under the permit, Kerr-McGee is authorized to discharge a daily maximum of 4.0 mgd of non-contact cooling water during the period of June 1 through September 30. The non-contact cooling water is discharged through an open ditch to Las Vegas Wash. Other process streams are either recycled or discharged to lined evaporation ponds located at the plant site. Pond parameters are summarized in Table-1 and their locations are shown in Figure 1.

The BMI industrial complex was originally owned by the U.S. Government which produced magnesium metal at the facility. In 1945, the portion of the industrial complex which is currently owned by Kerr-McGee was taken over by the Western Electrochemical Company. Western Electrochemical merged into American Potash and Chemical Corp. which took over operations at the facility in 1955. Finally, American Potash and Chemical Corp. merged into Kerr-McGee which gained control of the plant operations in 1967. Except for expansion to the production of boron compounds in the early 70's, the list of inorganic products at the facility (see details below) is basically unchanged since 1945.

Prior to 1976, liquid waste streams and slurried solid wastes from the facility were discharged to the unlined BMI ponds located across Boulder Highway to the northeast of the production area. In the mid-70's lined ponds were constructed on the Kerr-McGee plant property to accommodate liquid waste and recycle streams. Solid wastes have been and continue to be disposed on the Kerr-McGee plant property. Solid wastes were also disposed at the BMI dump, located northwest of the facility, until the dump closed in early 1980.

Production Processes and Wastewater Streams

Production at the Kerr-McGee facility is divided into four major processes: 1) Sodium chlorate, 2) perchlorates, 3) manganese dioxide, and 4) boron chemicals.

In the first process, sodium chlorate (NaClO₃) is produced in an electrolytic process from raw materials of sodium chlorade and water. Sodium chlorate is sold for use in paper pulp bleaches and is also used as an intermediate in the production of perchlorates at the Henderson facility. Waste from the production of sodium chlorate consists of a filter cake containing impurities from the raw materials and filter aid.

In the past, the filter cake (containing calcium sulfate, calcium carbonate, graphite, and diatomaceous earth) has been slurried to the BMI ponds or disposed at the BMI dump. The filter cake, which contains 50% moisture, is currently dumped on the ground surface in the northwest corner of the plant property (see Figure 1).

Spills, cooling tower leaks, and excess storm runoff from the sodium chlorate process are discharged to the lined ponds, P-2, and P-3. Water from these ponds is recycled back to the process.

During the summer, non-contact cooling water, used in the sodium chlorate process is discharged to Las Vegas Wash via the BMI storm ditch and the Alpha ditch. Additional details on this discharge are provided in the subsection below on plant effluent.

The second major process at Kerr-McGee involves the production of ammonium perchlorate (NH4ClO4) and potassium perchlorate (KClO4) which are used in the manufacture of rocket fuels. In this process, a solution of sodium chlorate is first electrolytically converted to sodium perchlorate (NaClO4). The sodium perchlorate is then combined with salts of either ammonia or potassium to form the respective perchlorates.

Wastes from the ammonium perchlorate process include a filter cake and chromic hydroxide which is derived from the use of chromium as a filter aid. In the past, the filter cake, containing calcium sulfate and calcium carbonate, was slurried to the BMI ponds. Now the filter cake and chromic hydroxide are discharged in slurry form to the lined ponds AP-1 or AP-2. At the time of the inspection pond AP-2 was not in use and was empty. Liquid from these ponds is recycled back to the process through the pump basin AP-3. Emergency overflows from the ammonium perchlorate cooling tower are discharged to the lined pond AP-4. A minor stream from a caustic scrubber in the ammonium perchlorate process is discharged to pond P-2 along with wastes from the sodium chlorate process (described above). A waste stream from the potassium perchlorate process containing NaCl, KCl, and KClO4 is discharged to the lined pond S-1.

The third major process at Kerr-McGee is the production of manganese dioxide which is sold for use in high performance dry cells. Low grade manganese ore is crushed, roasted, and then combined with sulfuric acid. The resulting manganous sulfate is then converted to manganese dioxide (MnO₂) by electrolysis. Wastes from this process include a solid waste containing silica, alumina, iron, and heavy metals which is filtered from the roasted ore after it has been combined with sulfuric acid. This waste, which amounts to 50% by weight of the raw ore, is currently disposed in piles at the Kerr-McGee plant site (see Figure 1).

A minor waste stream of sodium phosphate solution is discharged to pond C-1. The solution, which is used for cleaning the electrolytic cell electrodes, is discharged in batches of approximately 5,000 gallons once or twice per week. All other water used in the production of manganese dioxide is recycled.

The fourth major process at Kerr-McGee is the production of elemental boron (B), boron trichloride (BCl₃), and boron tribromide (BBr₃). Boron trichloride is used in the manufacture of boron filament for aircraft structures. Boron tribromide is used in semiconductor doping. Elemental boron is used in pyrotechnics. Waste streams from the production of boron chemicals include a leachate stream containing magnesium sulfate (500 gal./day) and a wet scrubber stream (7000 gal./day). These wastes were being discharged to pond S-1 at the time of the inspection.

Pond C-1 receives a waste stream from the plant's main boiler and cooling tower blowdown. The company reported that the discharge to pond C-1 contains 22,450 ppm total dissolved solids. Liquid in pond C-1 is not recycled back to the plant.

Ponds and Pond Leakage Monitoring

The Kerr-McGee discharge permit requires that:

- *1. If any waste waters... are placed in ponds, such ponds shall be located and constructed so as to:
 - a. contain with no discharge the once-in-one-hundred years storm at said location;
 - b. Withstand with no discharge the once-in-one-hundred years flood of said location; and
 - c. prevent escape of waste water by leakage.
- 2. The permittee shall submit to the Director and the Regional Administrator a summary of the results obtained from monitoring for seepage and leakage at the frequency specified in Part 1.C.2."

Plant personnel conduct a program of monitoring for pond leakage which involves 1) checking the level of liquid in each pond once or twice per week and 2) analyzing the concentration of certain salts in each pond every two or three weeks. With this data, large leaks can be detected by looking for unusual changes in the level of a pond or the load of dissolved salts

in a pond. The levels of liquid in adjacent ponds is also compared as a means for detecting losses of liquid in excess of the evaporation rate. A spot check of recorded data from this monitoring program revealed no unusual drops in pond level. Kerr-McGee officials stated that the monitoring program had revealed leaks in the liners of ponds P-1 and AP-2 which have now been repaired.

However, the current leakage monitoring program is not capable of detecting small leaks. The following techniques would make leak detection more exact but would still be subject to inaccuracies due to inherent errors in measurements. continuous level recorder at each pond would provide a more complete picture of liner integrity and make comparison of levels in different ponds easier. However, it would still be difficult to separate liquid losses due to evaporation and small leaks. Continuous level recorders would also provide estimates of the volume of inflow to ponds which currently is not measured. TIMET, one of the other companies at the BMI complex, uses a lithium tracer for detection of leaks in their lined ponds. A known quantity of lithium carbonate is placed in each pond. Periodically the lithium concentration and the pond volume is determined. From this data the load of lithium in each pond can be calculated. A drop in the amount of lithium in a given pond would be due to loss through leakage since the lithium load is not affected by evaporation. It is not necessary to measure pond inflow with the lithium tracer technique.

As noted above, Kerr-McGee has been recording data from their leakage monitoring program. However, they have not been reporting this data to the Nevada DEP or EPA as required by the permit. The plant superintendent said that he was not aware of the requirement to report this data.

Originally all of the lined ponds at the Kerr-McGee facility were lined with a single layer of polyvinyl chloride (PVC) on the bottom joined to chlorinated polyethylene (CPE) on the side walls. CPE was used on the side walls of the pond because of its greater resistence to solar radiation. Kerr-McGee officials explained that the PVC/CPE pond liners have been deteriorating over the years because the two membrane materials are incompatable when in contact with each other. In four of the Kerr-McGee ponds, the original PVC/CPE liner developed leaks and have been replaced with a liner made of nylon reinforced rubber. During the inspection the plant superintendent stated that the company planned to take pond S-1 out of service in the near future in order to replace its PVC/CPE lining. The potassium perchlorate waste stream would be rerouted to pond P-1 which has a nylon reinforced rubber

liner but was not in use at the time of the inspection. Ponds AP-1 and AP-4 still have the original PVC/CPE liners which the superintendent claimed were in satisfactory condition. In future inspections, the condition of the AP-1 and AP-4 pond linings should be checked. The new nylon reinforced hypolon liners appear to be holding without excessive deterioration.

Plant Effluent and Monitoring Requirements

During the summer months, an average of 3.2 mgd of non-contact cooling water is used in the sodium chlorate process. As authorized by the NPDES permit, this non-contact cooling water is discharged to an unlined, open ditch. The discharge flows approximately 200 ft. to the north at which point it flows into the BMI storm ditch (another unlined open ditch) and continues to the east (see Figure 1). In accordance with their permit, the Kerr-McGee discharge passes under Boulder Highway in the BMI siphon, and through the crossover pipe to the Alpha ditch and on to Las Vegas Wash (see Figure 2).

The BMI storm ditch is also used by Stauffer Chemical Company for their permitted stormwater discharges. Stauffer is located immediately west of Kerr-McGee in the BMI complex. However, under Stauffer's permit, their stormwater discharges are required to flow through the BMI siphon and down the acid ditch which discharges to the upper BMI ponds. If Stauffer discharged stormwater during the summer months it would combine with the Kerr-McGee discharge of non-contact cooling water in the BMI storm ditch. Under their discharge permit, Stauffer would be required to close the crossover pipe in order to route their stormwater discharge to the upper BMI ponds. However, closing the crossover pipe would also cause the Kerr-McGee effluent to flow to the upper BMI ponds. . Kerr-McGee is not authorized to discharge to the upper BMI ponds. On the other hand, if the crossover pipe were left open, then the Kerr-McGee effluent and the Stauffer stormwater would flow into the Alpha ditch. The flow of Stauffer stormwater to the Alpha ditch is not allowed under the Stauffer discharge permit. The conflict described above can be resolved either by 1) a permit modification or, 2) a rearrangement of the discharge ditches so the Kerr-McGee and Stauffer discharges do not use a common discharge route.

Under their discharge permit Kerr-McGee is required to monitor their effluent for flow, temperature, pH and oil and grease. The company is also required to measure the change in total dissolved solids and suspended solids of the non-contact cooling water which occurs in the process. Temperature is measured and recorded on a continuous basis while composites for TDS, suspended solids, and oil and grease are collectd manually at the head of the open discharge ditch which carries the non-contact cooling water (see Figure 1). Composites are made once a week by filling 8 glass jars on an hourly

basis from discharge water grabbed in a plastic bucket. The plant superintendent explained that the composites are not flow proportioned because the effluent flow is constant. A spot check of effluent flow charts revealed that this is generally true. However, the flow does fluctuate significantly on some days. Therefore, composite samples should be flow proportioned.

An orifice meter located in the plant production area is used to measure the flow which is reported in the discharge monitoring reports . This meter is only capable of measuring the discharge of non-contact cooling water. Other Kerr-McGee discharges which may occur would not be measured by the orifice meter. Other potential discharges to the BMI storm ditch by Kerr-McGee are storm water entering the unbermed ditch, pond overflows, or process spills. Many of the floor drains in the production area have been plugged to prevent such possibilities. However, during an earlier plant visit in August 1979, water leaking from a supply line in the plant was observed to be discharging through the open ditch which joins the BMI storm ditch near pond C-1. Due to the slope of the land and the lack of berms along the open ditches, storm runoff from Kerr-McGee plant property could easily enter the ditches and flow off plant property. Under their NPDES permit, Kerr-McGee is allowed to discharge noncontact cooling water. The discharge of any other liquids is not permitted.

Kerr-McGee has installed a weir and flow meter on the BMI storm ditch at the point it passes to TIMET property (see Figure 1). This meter would be capable of measuring all Kerr-McGee discharges in the BMI storm ditch. However, this meter would also measure any flow which may be discharged in the BMI storm ditch by Stauffer Chemical Company. Furthermore, the weir is not properly installed since it is not perpendicular to the axis of flow in the ditch. It is also possible for Kerr-McGee to discharge through an open ditch which enters TIMET property at a point south of the BMI storm ditch (see Figure 1). There is no flow measuring device on this ditch. In summary, with the flow measuring devices in place at the time of the inspection, it is not possible to measure all potential discharges from the Kerr-McGee plant.

A review of the plant's discharge monitoring reports for the summer months of 1979 revealed that the discharge was within the permitted limits with the exception of some exceedances of the pH limit. In 1979, the maximum limit on pH of 8.5 was exceeded in July (8.9), August (8.8), and October (8.6). The plant water supply (used for cooling water) has an average pH of 8.0 which contributes to the high pH of the discharge. The State of Nevada Division of Environmental Protection granted Kerr-McGee permission to continue their discharge of non-contact cooling water in October 1979. Due to unusually warm weather, the company found it necessary to continue the discharge until October 25, 1979.

SELF-MONITORING DEFICIENCIES

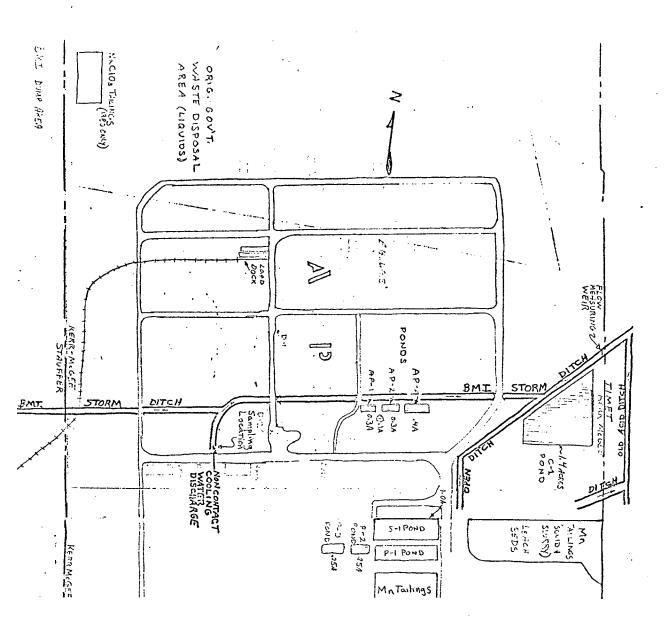
All self-monitoring procedures were in accordance with EPA requirements, EPA recommendations, and NPDES permit specifications with the exception of the following:

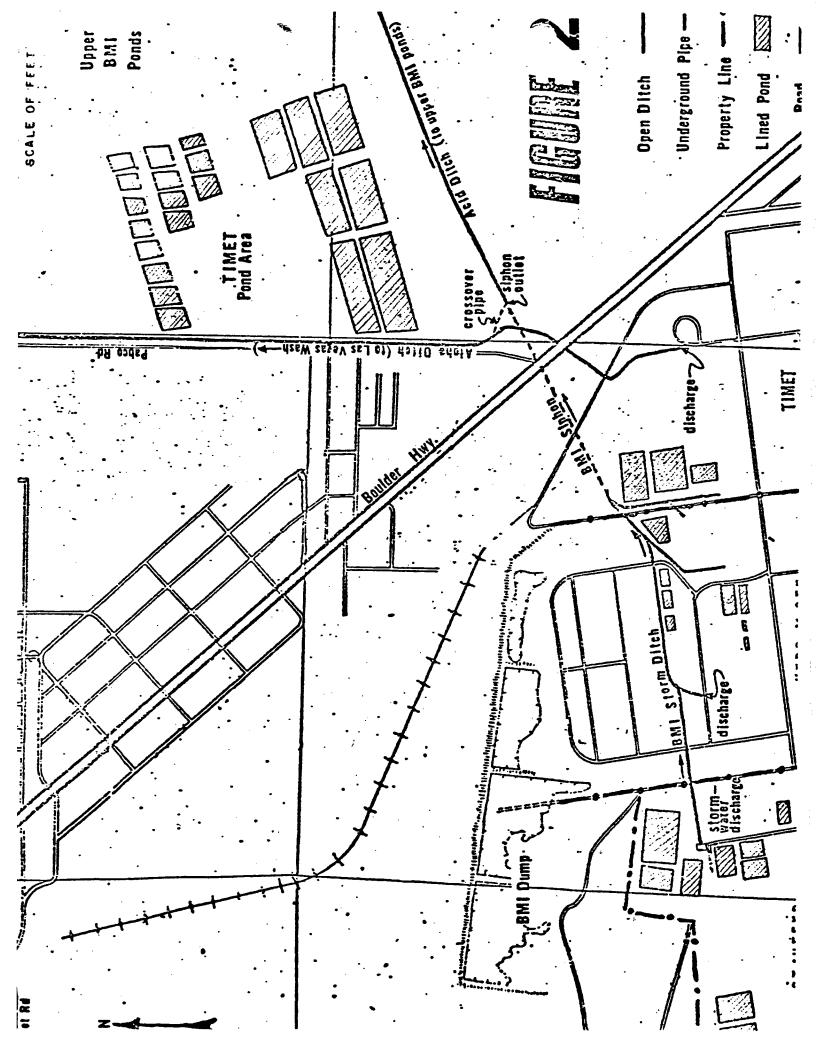
- The permittee has failed to report the results of monitoring for leakage from holding ponds as required by the permit. (see detail in Findings Section above).
- 2. Composite samples of the plant effluent are not flow proportioned during collection as required by the permit. Plant personnel claim that, due to the uniform nature of the effluent, analysis results would not change significantly if the sample were flow proportioned. Kerr-McGee should show that this is true by comparing results obtained under both compositing techniques.

TABLE 1: KERR-McGEE CHEMICAL CORPORATION PONDS

POND	Process Waste	Evaporation or Recycle	Liner*	Surface Area (acres)	Capacity (gallons)
<u>?</u>	Steam Plant (Boiler), Cooling Tower	Evaporation	PVC w/reinforced rubber walls	1.4	2,750,000
p-1**	KC104 (future plans)	Evaporation	Reinforced rubber	0.7	>900,000
P-2	NaClO3 spills and NH4ClO3 scrubber	Recycle	Reinforced rubber	0.25	350,000
P-3	NaClO ₃ spills	Recycle	Reinforced rubber	0.25	350,000
AP-1	NH4C104	Recycle	FVC w/CPE walls	0.3	425,000
AP-2**	NH4C104	Recycle	Reinforced rubber	0.3	425,000
AP-3	Pump basin for AP-1 and AP-2	Recycle	unknown	0.1	50,000
AP-4	NH4C104 Cooling Tower	Evaporation	PVC w/CPE walls	0.4	650,000
ე—ე	KC104 and Boron Compounds	Evaporation	PVC w/CPE walls	1.0	2,000,000

* All ponds have single layer linings. ** Ponds which were not in use at time of inspection (June, 1980).





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	B. Armstron	ng	1	Plant Manage	2((702) 565-8901	
_	RESENTATIVE F. Wohler	· Z	Ti	TLE Superinten Technical Se	dent, Plant	phone (702) 565-8901	
SECTION B - E	fluent Characteristic	s (Additional sheet	s attached	Data fr	on DMR for Sep	Tember 1979	
PARAMETER/ OUTFALL		MINIMUM	AVERAGE Daily	MAXIMUM Daily	ADDITIONAL		
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001	PERMIT REQUIREMENT		10 mg/1	15 mg/1			
pH/	SAMPLE . MEASUREMENT	8.1		8.3			
001	PERMIT REQUIREMENT	6.5		8.5			
SECTION C - Fa	cility Evaluation (S -	= Satistactory, U =	Unscustactory.	VA = Not applicable)			
U RECORDS	MTHIN PERMIT REQU		PERATION AND		U SAMPLING PE		
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SECTION D - Co	mménts	•			. joinen.		
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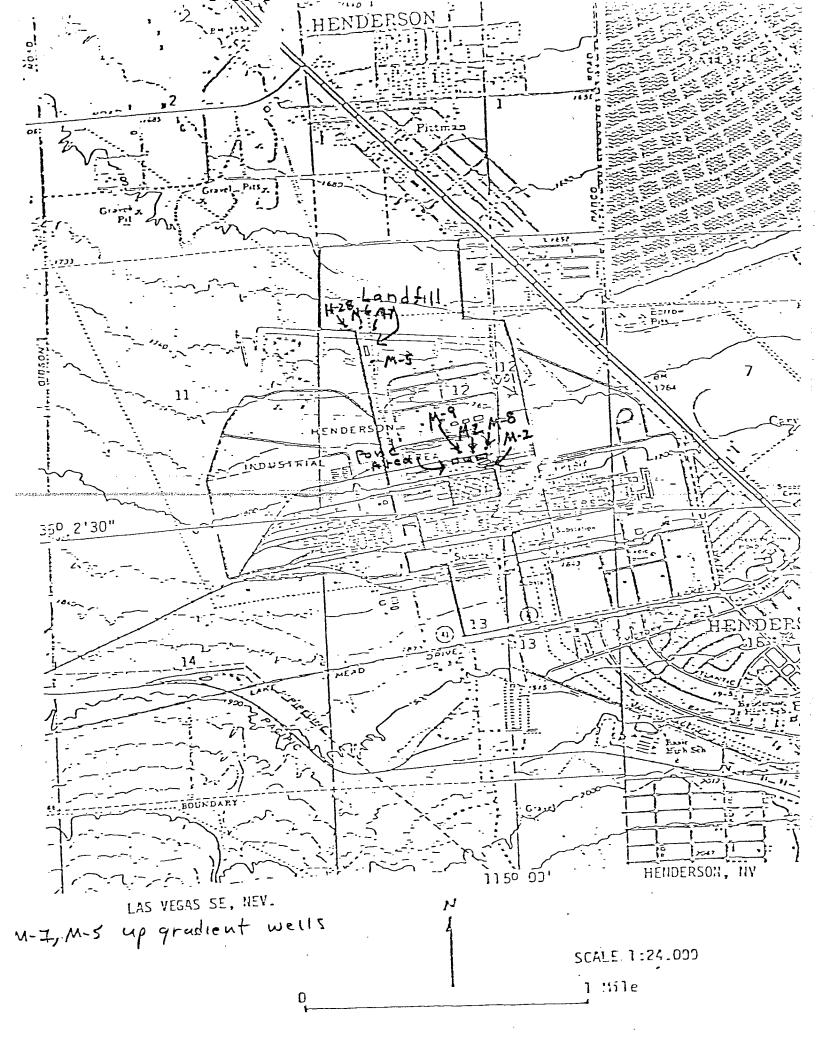
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Sections F thru L: Complete on all rections, as appropriate. N/A = Not Applicance	PER	MIT NO.	70
SECTION F - Facility and Permit Background	<u></u>	V cccco	18
ADDRESS OF PERMITTEE IF DIFFERENT FROM FACILITY DATE OF LAST PREVIOU	S INVESTIGATI	ON BY ERA	
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Kerr-McGee Chemical Corporation FINDINGS			
Oklahoma City, Oklahoma	•		
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SECTION G - Records and Reports			
RECORDS AND REPORTS MAINTAINED AS REQUIRED BY PERMIT. DYES MINO DN	A (Further explan	ution attache	d X
DETAILS: Leakage menitering data not reported	•		
(a) ADEQUATE RECORDS MAINTAINED OF:			
(I) SAMPLING DATE, TIME, EXACT LOCATION (II) ANALYSES DATES, TIMES	₩ YES	□ vo	·.
(III) INDIVIDUAL PERFORMING ANALYSIS	₩ YES	по	<u></u>
(W) ANALYTICAL METHODS/TECHNIQUES USED	X YES	СиО	<u>=:</u>
(v) ANALYTICAL RESULTS (e.g., consistent with self-monitoring report data)	10 YES	☐ NO	
(b) MONITORING RECORDS (e.g., flow, pH, D.O., etc.) MAINTAINED FOR A MINIMUM OF THREE VI	ABC		
INCLUDING ALL ORIGINAL STRIP. CHART RECORDINGS (e.g. continuous monitoring instrument	ation,		
calibration and maintenance records).	M YES	□ NO	□n.
(c) LAB EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS KEPT.	Ø YES	ON D	Ωĸ.
(d) FACILITY OPERATING RECORDS KEPT INCLUDING OPERATING LOGS FOR EACH TREATMENT	UNIT. 1 YES	□ NO	Z.
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(1) RECORDS MAINTAINED OF MAJOR CONTRIBUTING INDUSTRIES (and their compliance status) UPUBLICLY OWNED TREATMENT WORKS.	SING		
SECTION H - Permit Verification	☐ YES	□ NO	⊠ N/
INSPECTION OBSERVATIONS VERIFY THE PERMIT. SYES ON ON/A (Further expla	nation etteched		
DETAILS:	milion elicched <u> </u>	<i>i</i>	
(a) CORRECT NAME AND MAILING ADDRESS OF PERMITTEE.	Ø YES	□ NO	Ūn'
(b) FACILITY IS AS DESCRIBED IN PERMIT.	X YES	□ NO	
(c) PRINCIPAL PRODUCT(S) AND PRODUCTION RATES CONFORM WITH THOSE SET FORTH IN PE APPLICATION.	RMIT		
	Ø YES	□ NO	□ N′
(d) TREATMENT PROCESSES ARE AS DESCRIBED IN PERMIT APPLICATION.	☐ YES	□ NO	∠ & 、
(a) NOTIFICATION CIVEN TO EPA/STATE OF NEW, DIFFERENT OR INCREASED DISCHARGES. (1) ACCUPATE RECORDS OF RAW WATER VOLUME MAINTAINED.	☐ YES	ON E	<u>~~</u>
(g) NUMBER AND LOCATION OF DISCHARGE POINTS ARE AS DESCRIBED IN PERMIT.	☐ YES	<u> </u>	<u> </u>
(h) CORRECT NAME AND LOCATION OF RECEIVING WATERS.	₩ YES	□ NO □	<u> </u>
(I) ALL DISCHARGES ARE PERMITTED.	M YES	СУ <u>П</u>	
SECTION I - Operation and Maintenance			- 1977
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DETAILS:		4.180/104	
(2) STANDBY POWER OR OTHER EQUIVALENT PROVISIONS PROVIDED.	☐ YES	□ NO	⊠
(A) ADEQUATE ALARY SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAILABLE.	☐ YES	□ NO	X \ .
(c) REPORTS ON ALTERNATE SOURCE OF POWER SENT TO EPAISTATE AS REQUIRED BY PERMIT (d) SLUDGES AND SOLIDS ADEQUATELY DISPOSED.		<u> </u>	図~
ALL TREATMENT UNITS IN SERVICE.	☐ YES	<u> </u>	ZN.
1) CONSULTING ENGINEER RETAINED OR AVAILABLE FOR CONSULTATION ON OPERATION AN	O YES	□ NO	<u> 3.v.</u>
	D YES	□ NO	Z ***
9) QUALIFIED OPERATING STAFF PROVIDED.	☐ YES	□ NO	8 2 v
M ESTABLISHED PROCEDURES AVAILABLE FOR TRAINING NEW OPERATORS.	□ vcc	□ NO	S N A
i) FILES MAINTAINED ON SPARE PARTS INVENTORY, MAJOR EQUIPMENT SPECIFICATIONS, AND PARTS AND EQUIPMENT SUPPLIERS.	.		
) INSTRUCTIONS FILES KEPT FOR OPERATION AND MAINTENANCE OF EACH ITEM OF MAJOR	YES .	□ NO	<u> </u>
EQUIPMENT.	T YES	□ NO	X v a
k) OPERATION AND MAINTENANCE MANUAL MAINTAINED.	☐ YES	<u> </u>	<u> </u>
SPCC PLAN AVAILABLE.	☐ YES	C NO	<u>X</u> .
m) REGULATORY AGENCY NOTIFIED OF BY PASSING. (Dates	☐ YES	□ ×0	Z \
ANY BY PASSING SINCE LAST INSPECTION.	[] YES	<u> </u>	<u>Z / -</u>
PA FORM 3550 3 to 32	☐ YES	□ 40	\overline{X} .

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157 : 157 PERMIT NO. NV0000078 SECTION J - Compliance Schedules PERMITTEE IS MEETING COMPLIANCE SCHEDULE. OYES. DNO ⊠N/A (Further explanation attached) CHECK APPROPRIATE PHASE(S): (a) THE PERMITTEE HAS OBTAINED THE NECESSARY APPROVALS FROM THE APPROPRIATE AUTHORITIES TO BEGIN CONSTRUCTION. (b) PROPER ARRANGEMENT HAS BEEN MADE FOR FINANCING (mortgage commitments, grants, etc.). (c) CONTRACTS FOR ENGINEERING SERVICES HAVE BEEN EXECUTED. (d) DESIGN PLANS AND SPECIFICATIONS HAVE BEEN COMPLETED. [(e) CONSTRUCTION HAS COMMENCED. lacksquare (1) construction and/or equipment acquisition is on schedule. [] (g) CONSTRUCTION HAS BEEN COMPLETED. (h) START-UP HAS COMMENCED. (i) THE PERMITTEE HAS REQUESTED AN EXTENSION OF TIME. SECTION K - Self-Monitoring Program Part I - Flow measurement (Further explanation attached _ PERMITTEE FLOW MEASUREMENT MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. YES D NO $\square_{N_{\ell}}$ DETAILS: (a) PRIMARY MEASURING DEVICE PROPERLY INSTALLED. YES D NO TYPE OF DEVICE: PARSHALL FLUME DMAGMETER DVENTURI METER SOTHER Specify Confice **□wsia** (b) CALIBRATION FREQUENCY ADEQUATE. 'Dete of last calibration. S YES □ No c) PRIMARY FLOW MEASURING DEVICE PROPERLY OPERATED AND MAINTAINED. <u>□ .c</u> N YES (d)SECONDARY INSTRUMENTS (totalizers, recorders, etc.) PROPERLY OPERATED AND MAINTAINED. X YES I No (e) FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGES OF FLOW RATES. ☐ sig 🛭 YES Part 2 - Sampling (Further explanation attached . X.____) PERMITTEE SAMPLING MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. O YES NC NC Dv. DETAILS: (a) LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES. YES C NO (b) PARAMETERS AND SAMPLING FREQUENCY AGREE WITH PERMIT. 🛭 YES □ NO $\square \times \underline{\cdot}$ (c) PERMITTEE IS USING METHOD OF SAMPLE COLLECTION REQUIRED BY PERMIT. M YES 5 NO EN GRAB MANUAL COMPOSITE DAUTOMATIC COMPOSITE (d) SAMPLE COLLECTION PROCEDURES ARE ADEQUATE O YES X NO (i) SAMPLES REFRIGERATED DURING COMPOSITING T YES **⊠** \o PROPER PRESERVATION TECHNIQUES USED M YES D No FLOW PROPORTIONED SAMPLES OBTAINED WHERE REQUIRED BY PERMIT (iii) O YES **⊠** ∿o *: : SAMPLE HOLDING TIMES PRIOR TO ANALYSES IN CONFORMANCE WITH 40 CFR 136.3 🔼 YES D NO באב e) MONITORING AND ANALYSES BEING PERFORMED MORE FREQUENTLY THAN REQUIRED BY PERMIT. **3** NO □ w≥ O YES (1) IF (e) IS YES, RESULTS ARE REPORTED IN PERMITTEE'S SELF-MONITORING REPORT. O YES C NO **⊠**N, ≥ Part 3 — Laboratory (Further explanation attached. PERMITTEE LABORATORY PROCEDURES MEET THE REQUIREMENTS AND INTENT OF THE PERMIT. B YES D NO **□**N/a DETAILS: (a) EPA APPROVED ANALYTICAL TESTING PROCEDURES USED. 140 CFR 136.3) YES D NO $\Box \setminus \exists$ (b) IF ALTERNATE ANALYTICAL PROCEDURES ARE USED. PROPER APPROVAL HAS BEEN OBTAINED. ☐ YES X N = NO (c) PARAMETERS OTHER THAN THOSE REQUIRED BY THE PERMIT ARE ANALYZED. C YES B 10 **** = (d) SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT. M YES ٠. ۽ **NO** e) QUALITY CONTROL PROCEDURES USED. YES NO **** : (1) DUPLICATE SAMPLES ARE ANALYZED. M YES C No (3) SPIKED SAMPLES ARE USED. _____ ... % OF TIME. M YES □ vo N) COMMERCIAL LABORATORY USED O YES **%** \c ٠. ن i) COMMERCIAL LABORATORY STATE CERTIFIED. **X** ≥ -O YES **□** ⊹o LAB NAME

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

ECEIVED

Environmental Profession

215 Fremont Street San Francisco, Ca. 94105

CERTIFIED MAIL NO. P12 5828643 RETURN RECEIPT REQUESTED

In Reply

B-5-2

Refer to:

SOW-HAZ-6-6-2-6

Mr. C. S. Armstrong Plant Manager Kerr-McGee Chemical Corporation

P.O. Box 55

Henderson, NV 89015

17 JUN 1980

Dear Mr. Armstrong:

On May 2, 1980 you responded to our letter of March 25, 1980 in which we requested information relating to your manufacturing operations and the solid and liquid wastes produced by these operations. We appreciate the time and effort that you expended in compiling this information. The activities you described in your letter have given us valuable insights into the waste disposal situation in Henderson.

In order to clear up the remaining questions we have concerning your waste-related operations you are required to report the following information within 10 days of receipt of this letter.

- 1. What is the relationship of Western Electrochemical Company, American Potash and Chemical Corporation and Kerr-McGee Chemical Corporation (your answer 1)? Has RMCC assumed the rights and obligations of WECCO and AP&CC?
- 2. Identify (specific chemical compounds and common names) the solid and liquid wastes produced by the boron operations. Estimate the total volume of solid and liquid wastes produced, describe the disposal method(s) and locate the disposal site(s) on a map drawn to scale. In answering these questions separate estimates should be given for the solid and liquid portions.

- 3. Explain the terms "company ponds" and "KMCC site" (your answer 6). Are these lined or unlined ponds? During what years were they used? Locate these ponds on a map drawn to scale.
- With regard to your answer 13, estimate the total volume of liquid waste which has flowed into each lined disposal pond. What percent of this volume has been recycled into your operations?
- 5. On a map drawn to scale show the location of the leach beds which received slurried manganese dioxide waste (your answer 13).
- 6. When did the discharge of aqueous combined effluent (except manganese dioxide waste) to BMI ponds begin?
- 7. What is the total volume of liquid waste that has been disposed at pond AP-2? At pond P-1? For each pond list the operation from which the wastes originated and the total volume of waste that has been contributed from each operation.
- 8. What is the chemical composition of the dried residue in pond AP-2 and pond P-1? Estimate the volume of residue in each of these ponds that has been disposed of in the BMI dump.
- 9. Are the sludge residues in any of the lined ponds recycled? If so, give the pond number, the chemical composition of the sludge, the total volume of the sludge and the percentage recycled.
- 10. Where have the liquid wastes from the potassium perchlorate, sodium perchlorate and magnesium perchlorate operations been disposed? If these wastes have been disposed of in lined ponds, identify the waste producing operation, the pond number and the total volume of waste produced by each operation. If these wastes have been disposed of in unlined ponds give the above information and show the location of the disposal sites on a map drawn to scale.
- 11. Do liquid wastes that entered pond S-1 from the "potassium operations" include wastes from the potassium chlorate and potassium perchlorate operations? If not, identify the wastes, estimate the total volume of waste

disposed and show the location of the disposal site(s) on a map drawn to scale.

Under Section 308 of the Clean Water Act (CWA), 33 U.S.C. 1318, Section 114 of the Clean Air Act (CAA), 42 U.S.C. 7414, and Section 3007 of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 5927, EPA is authorized to require records and other information as necessary to administer the CWA, CAA, and RCRA. Section 309 of the CWA, 33 U.S.C. 1319, Section 113 of the CAA, 42 U.S.C. 7413, and Section 3008 of RCRA, 42 U.S.C. 6928 provide for civil or criminal penalties for failure to submit information and criminal penalties for knowingly making a false statement.

If you need assistance in understanding these questions please contact Jon Merkle at (415)556-7841.

Your cooperation is appreciated.

Sincerely yours,

ORIGINAL SIGNED BY: CLYDE ELLER

Clyde B. Eller Director Enforcement Division cc: Marvin Tebeau, Nevada DEP



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

MAR 2 8 1980

Environmental Protection

CERTIFIED MAIL NO. Pl25847816 RETURN RECEIPT REQUESTED

In Reply E-5-2

Refer to: SOW-HAZ-6-6-2-6

Mr. Charles B. Armstrong Plant Manager Kerr-McGee Chemical Corp. P.O. Box 55 Henderson, NV 89015

25 MAR 1980

Dear Mr. Armstrong:

The United States Environmental Protection Agency (EPA) is currently seeking to identify sites where hazardous wastes have been disposed or are being stored for disposal. Under Section 308 of the Clean Water Act (CWA), 33 U.S.C. 1318, Section 114 of the Clean Air Act (CAA), 42 U.S.C. 7414, and Section 3007 of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6927, EPA is authorized to require records and other information as necessary to administer the CWA, CAA, and RCRA.

In order to determine whether hazardous wastes have been or are being disposed, stored or transported on or off your property you are hereby required to report the following information within 30 days of receipt of this letter.

GENERAL

- 1. When did your company begin manufacturing operations at your present location?
- 2. What products have been manufactured since operations began? Give trade names/common names and describe any changes with time.
- 3. Identify the raw materials used in the manufacturing operations described in 2 above (specific chemical compounds and common names).

SOLID WASTE

- 4. Identify the solid wastes produced by the manufacturing operations described in 1 through 3 above (specific chemical compounds and common names).
- 5. For those solid wastes that have been disposed of offsite (i.e., off your property and off BMI property) supply the following information:
 - *identity of wastes (specific chemical compound and common names)
 - *volume of wastes
 - *name and location of dump sites
- 6. For those solid wastes that have been disposed of onsite (i.e., on your property or on BMI property) supply the following information:
 - *identity of waste (specific chemical compounds and common names)
 - *volume of wastes
 - *disposal method (i.e., drums, burial, burning, etc.)
 - *dates when this disposal method began and ended for each identified waste product
- 7. Show by a simple map, drawn to scale, the locations of the active and inactive solid waste disposal sites described in 6 above.
- 8. Have any outside parties used your property for the disposal of their solid waste? If so
 - *identify the party
 - *identify the waste (specific chemical compounds and common names)
 - *specify the volume of the waste, the time period during which the waste was deposited on your property and show the location of the disposal site on the map described in 7 above.

- 9. If you consider solid wastes located on-site (i.e., on your property or on BMI property) to be stored rather than <u>disposed</u>
 - *identify the waste and its volume (specific chemical compounds and common names)
 - *identify the storage method (drums, burial, etc.)
 - *show the location of storage site(s) on the map described in 7 above.
- 10. If you have conducted any groundwater monitoring in the vicinity of your solid waste disposal or storage sites describe the location of the monitoring wells, their depths and the results of any groundwater analyses.

LIQUID WASTE

- 11. Identify the liquid wastes produced by the manufacturing operations described in 1 through 3 above (specific chemical compounds and common names). Identify and estimate the volume of liquid process wastes which enter the BMI storm and domestic waste (sewage) systems; the remainder of your liquid process waste stream is covered by the following questions.
- 12. For those liquid wastes that have been disposed of offsite (i.e., off your property and off BMI property) supply the following information:
 - *identity of wastes (specific chemical compounds and common names)
 - *volume of wastes
 - *name and location of dump sites
- 13. For those liquid wastes that have been disposed of on-site (i.e., on your property or on BMI property) supply the following information:
 - *identity of waste disposed of in leachbeds or directly on the earth's surface (specific chemical compounds and common names)

- *identity and volume of wastes disposed of in unlined ponds (specific chemical compounds and common names)
- *identity and volume of wastes disposed of in lined ponds (specific chemical compounds and common names)
- *dates when these disposal methods began and ended for each identified waste product
- 14. Show by a simple map, drawn to scale, the locations of the active and inactive liquid waste disposal sites described in 13 above.
- 15. If lined ponds have ever been used for the disposal of liquid wastes (see 13 above) describe the monitoring system used to detect leaks, estimate past and present leakage rates, identify those ponds which are leaking, and describe any plans to upgrade the pond linings.
- 16. Where are sludges and residues removed from the ponds disposed of?
- 17. If you consider liquid wastes located on-site (i.e., on your property or on BMI property) to be stored rather than disposed
 - *identify the waste and its volume (specific chemical compounds and common names)
 - *identify the storage method (drums, tanks, etc.)
 - *summarize significant leaks and spills
 - *show the location of storage site(s) on the map described in 14 above.
- 18. Have any outside parties used your property for the disposal of their liquid waste? If so
 - *identify the party
 - *identify the waste (specific chemical compounds and common names)
 - *specify the volume of the waste, the time period during which the waste was deposited on your

property and show the location of the disposal site on the map described in 14 above.

19. If you have conducted any groundwater monitoring in the vicinity of your liquid waste disposal or storage sites describe the location of the monitoring wells, their depths and the results of any groundwater analyses.

Section 309 of the CWA, 33 U.S.C. 1319, Section 113 of the CAA, 42 U.S.C. 7413, and Section 3008 of RCRA, 42 U.S.C. 6928, provide for civil or criminal penalties for failure to submit information and criminal penalties for knowingly making a false statement.

Your cooperation is appreciated.

Sincerely yours,

Company of the Section of the Sectio

Clyde B. Eller Director Enforcement Division

cc: Marvin Tebeau, Nevada DEP





STATE OF NEVADA

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES DIVISION OF ENVIRONMENTAL PROTECTION

CAPITOL COMPLEX
CARSON CITY, NEVADA 89710

TELEPHONE (702) 885-4670

May 5, 1982

Mr. George Stewart
President
Basic Management, Inc.
P.O. Box 2065
Henderson, Nevada 89015

Dear Mr. Stewart:

The submittals from the industries located at the BMI Complex required for Items 1, 2, and 3 of the Division's Order dated February 25, 1982, have been received and reviewed. In most cases, the submittals were adequate, but have raised some questions which must be answered in order to fully complete Item 3. The additional information needed is indicated below for the specific industry. This information shall be submitted by May 21, 1982.

Genstar Cement and Lime Company

The Genstar response was complete.

Jones Chemicals, Inc.

Jones reported that an evaporation tank is used for the disposal of wash down water from the cleaning of drums, bottles, and delivery trucks. Jones shall submit an analysis of the chemical constituents of the waste wash water, a description of the tank (construction, buried, above ground, etc.), the leak detection system, and how the waste wash water is transported to the tank.

Kerr-McGee Chemical Corporation

Kerr-McGee responded to the Order assuming the ground water contamination of the area only regarded organic chemicals. Kerr-McGee shall supplement their response to include information on inorganic wastes; particularly those containing heavy metals.

Sampling and analyses conducted by the State have reported cyanide, arsenic, chromium, selenium, and antimony. The levels of these chemicals found in the ground water and surface water significantly exceed the drinking water standards.

Kerr-McGee shall include in their response:

- (1) Whether the above named chemicals or other hazardous inorganic chemicals are used in their processes;
- (2) Whether their wastes ever contained those chemicals, where the wastes were disposed, and how much has been disposed; and
- (3) At what rate those chemicals are being generated presently and where the wastes are being disposed.

Montrose Chemical Corporation of California

The Montrose response is being handled through a separate order to Stauffer.

State Industries, Inc.

State Industries submitted a laboratory analysis of their ponded waste. A check with the laboratory conducting the analysis resulted in a determination that the signing chemist could not verify the analysis. A recognized laboratory should be used to analyze the waste impoundment samples.

State Industries reported using cyanide from June 1970 to October 1971. How much was wasted and where was it disposed?

The BMI acid drain was reportedly used. Describe State Industries' access to the acid drain and show its location on a scaled map.

Was the BMI Dump used for materials other than trash; and what was disposed and how much?

What is the present waste generation rate?

Stauffer Chemical Company

The Stauffer response is being handled through a separate order.

Titanium Metals Corporation of America (TIMET)

The TIMET response was complete.

As was agreed during the March 11, 1982, meeting, Items 4 and 5 of the Order were to be answered within thirty (30) days after the Division notified the industries to respond. The industries are hereby notified to respond to Item 5 only at this time and to submit their reports by June 7, 1982.

Mr. George Stewart May 5, 1982 Page -3-

Item 4 of the Order is not requested at this time. The Division is proposing to modify this Item, if warranted, by new data from monitoring wells which have been constructed in the area by the Bureau of Reclamation, TIMET, Kerr-McGee, and Stauffer. Until the Division completes its review of this data, Item 4 is hereby not required of the industries.

If you have any questions, please contact me.

Sincerely,

H. LaVerne Rosse, P.E.

Program Director Waste Management

Herne Kosse

de

cc: L. H. Dodgion, Administrator
 Division of Environmental Protection
Genstar Cement and Lime Company
Jones Chemicals, Inc.
Kerr-McGee Chemical Corporation
Montrose Chemical Corporation of California
State Industries, Inc.
Stauffer Chemical Company
Titanium Metals Corporation of America (TIMET)



STATE OF NEVADA

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES DIVISION OF ENVIRONMENTAL PROTECTION

CARSON CITY, NEVADA 89710

TELEPHONE (702) 885-4670

February 25, 1982

Mr. George Stewart, President BMI Complex P.O. Box 2065 Henderson, Nevada 89015

Dear Mr. Stewart:

The enclosed Order issued by the Administrator of the Division of Environmental Protection pursuant to Nevada Revised Statute (NRS) 445.307, NRS 445.317, NRS 445.324, and Chapter 457, 1981 Statutes of Nevada requires compliance by BMI and the various industries of the complex with items specific in the Order.

Any violations of the Order could subject BMI to an action of appropriate relief pursuant to NRS 445.327, 445.331, 445.334 and Chapter 457, 1981 Statutes of Nevada.

This Order is final and not subject to review unless within thirty (30) days after the date such order is received a request by written petition for a hearing is received by the State Environmental Commission, 201 South Fall Street, Capitol Complex, Carson City, Nevada 89710.

If you have any questions please contact Verne Rosse or myself at 885-4670.

Sincerely,

W. Marvin Tebeau

Environmental Scientist

cc: Jim Hannah
 Roland Westergard
 George Postrozny
 Jon Merkle - W-4-2

Enclosures

WMT:rb

In the Matter of)
BMI Complex)
Henderson, Nevada)

ORDER

The following Order is issued this date pursuant to the powers and duties vested in the Director by Nevada Revised Statutes (NRS) Chapter 445.214 subsection 1, 2, 3, 7 and 12 and in accordance with NRS 445.307, NRS 445.317 subsection 1(a), NRS 445.324 and Chapter 457, 1981 Statutes of Nevada.

In the past the BMI Complex and the various industries of the BMI Complex have been issued orders requesting information on the various process waste(s) discharged to lined or unlined ponds, piping schematics to impoundments, monitoring well locations and chemical analyses of the ground water. This information was provided and supplemented with data developed by the various industries for the US EPA, monitoring of the soils and ground water in the BMI Complex and Pittman area by the US EPA Stauffer Chemical, ground water salinity data developed by the Bureau of Reclamation in the Pittman area and ground water data developed by the US Homes Corporation on their property.

The Division concluded the following from the available data.

- 1. From the late 1940's until 1980 the various industries of BMI made use of the BMI dump, upper and lower BMI ponds and other solid waste sites for disposal of organic and inorganic waste.
- 2. These wastes included sodium hyprochlorite solution, organic phosphoric acid sludge, thiophenol aqueous waste, imidan and trithion aqueous waste, brine sludge, isomers of benzene hexachloride, asbestos sludge, PCB sludge, carbon tetrachloride waste, isomers of DDT, chlorate waste, ammonium perchlorate waste, magnesium cell smut, titanium fines, hydrated lime, sodium chloride, leach liquor, acid waste with mix metals, sodium hypochlorate, caustic waste, boiler blowdown, pickling liquor waste and numerous other process waste not listed.
- 3. A TDS-organic plume has been identified leaving the northern Kerr-McGee/BMI property line and passing under residential and commercial property in the Geraghty-Miller Report (G-M).

4. The Bureau of R. Clamation reports made avaluable are titled the Pittman Verification Program, February, 1981 and the Specifications Pittman Lateral Southern Nevada Water Project Second Stage No. DC07332, 1978. These reports indicate that a TDS plume of increasing concentration with organic contaminants bracket well PG-111. The existing static water level map and conclusions of the G-M report indicates that this plume may be contiguous with the identified TDS-organic plume.

It is concluded that this plume may extend several miles beyond the identified Kerr-McGee/BMI property line in the direction of identified surfacing ground water near the Las Vegas Wash.

- 5. A review of the available data indicate that a second TDSorganic plume exists east of the Alpha ditch in the area around wells PG 103, PG 108 and the US Homes wells W-3 and W-5.
- 6. Photographs taken in the 1950's and 1960's depict leach trenches on the edge of the BMI dump and a discharge ditch emanating from the BMI siphon and traveling down-gradient of the french drains toward the Stauffer H-10 well.

In order for the Division of Environmental Protection to fully access the impact of the past disposal practices on the ground and surface waters of the State, the BMI Complex (Stauffer Chemical Co., Montrose Chemical Corp. of California, Kerr-McGee Chemical Corp., Timet, Inc., Flintkote Lime Co., State Industries and Jones Chemicals, Inc.) are Ordered to develop the following by the specified dates:

IT IS HEREBY ORDERED

- 1. By April 1, 1982, a copy of the original design and as-built drawings of the presently identified BMI dump and french drains shall be provided.
- 2. By April 1, 1982, as-built drawings of the BMI dump closure, permeability data on the geological material used to close the site and an analysis of the effectiveness of the closure shall be provided.
- 3. Based on photographs described above:
 - a. By April 1, 1982, design data on each trench, dates of their use and the process waste and quantity and quality discharged to each trench shall be provided.

- b. By April 1, 1982, information on the process waste and quantity and quality discharged via the identified ditch and the dates of its use shall be provided.
- c. By April 1, 1982, the specific areas of the closed BMI dump used by each industry and the waste and quantity and quality disposed of in each location shall be identified.
- d. By April 1, 1982, the specific discharge route and BMI ponds used by each industry, process waste and quantity and quality discharged via the route, and dates of use shall be identified.
- 4. By April 15, 1982, a plan of action with scheduling shall be provided to determine the static water levels and depth to the Muddy Creek formation, direction of ground water movement, and extent of areal organic and inorganic contaminants of specific chemical constitutents in the ground water on BMI property and surfacing ground water near the Las Vegas Wash.
- 5. By April 15, 1982, determine the quantity of water each industry loses to the aquifer above the Muddy Creek formation.

Dated.

L. H. Dodgion

Administrator



May 2, 1980

Mr. Clyde B. Eller, Director Enforcement Division United States Environmental Protection Agency Region IX 215 Fremont Street San Francisco, CA 94105

Reference: E-5-2

SOW-HAZ-6-6-2-6

Dear Mr. Eller:

The following information is provided in response to your request of March 25, 1980. The numbered statements are in the same order as the questions of your letter.

GENERAL

1. Operations

U. S. Government - 194- - 1945 ?
Western Electrochemical Company - 1945 - 1955
American Potash & Chemical Corporation - 1955 - 1967
Kerr-McGee Chemical Corporation - 1967 - Present

2. Products

A. U. S. Government

Magnesium Metal

B. Western Electrochemical Company

Sodium Chlorate	_	_	·- 1945 - 1955
Potassium Chlorate	_		- 19 1955
Potassium Perchlorate			- 1945 - 1955
Ammonium Perchlorate			- 1951 - 1955
Manganese Dioxide			- 1951 - 1955

C. American Potash & Chemical Corporation

Same as B above - 1955 - 1967

Mr. Clyde B. Eller Page 2 May 2, 1980

D. Kerr-McGee Chemical Corporation

	- 1967 - 1980
Sodium Chlorate	- 1968 - 1980
z 1: D-weblerete	- 1900 - 1900
Sodium Perchlorate	- 1967 - 1974
Potassium Chlorate	- 1967 - 1980
Potassium Perchlorate	1007
rulassimi rulassi	- 1967 - 1980
Ammonium Perchlorate	- 1967 - 1980
Manganese Dioxide	- 1969 - 1974
Dorohlorate	- 1969 - 1974
Magnesium Perchlorate	- 1973 - 1980
Boron Trichloride	
DOTOIL TETOILE	- 1973 - 1980
Boron Tribromide	- 1972 - 1980
Elemental Boron	
Elemencar poron	- 1975 - 1979
Tumbleaf Defoliant	• • ·

Other inorganic chemicals were produced at various times on an experimental basis or for a limited time period.

3. Raw Materials

2(41)		
Sodium Chlorate		sodium chloride + water
Sodium Perchlorate		sodium chlorate + water
Potassium Chlorate		sodium chlorate + potassium chloride
Potassium Perchlorate		sodium perchlorate + potassium chloride
Ammonium Perchlorate	-	sodium perchlorate + ammonia + hydrochloric acid
Magnesium Perchlorate		magnesium carbonate + ammonium perchlorate *
Manganese Dioxide		manganese ore (pyrolusite) + sulfuric acid
Boron Trichloride	_	boron carbide + chlorine
Boron Tribromide		boron carbide + bromine
Elemental Boron	-	boric oxide + magnesium
Tumbleaf	-	sodium chlorate, borax, sodium carbonate, and surfactant

Mr. Clyde B. Eller Page 3 May 2, 1980

SOLID WASTE

4. Identity

- A. Chlorate Operations graphite calcium carbonate calcium sulfate diatomaceous earth (silica)
- B. Perchlorate Operations calcium carbonate chromium hydroxide diatomaceous earth
- C. Manganese Dioxide manganese ore (acid insoluble)
 heavy metal sulfides
 diatomaceous earth
 paraffin wax
 calcium sulfate

5. Off-Site Disposal

Barium Sulfide (drums), 709 cubic feet, to Nuclear Engineering Company, Beatty, Nevada

PCB Contaminated Solids (drums), 144 cubic feet, to Nuclear Engineering Company, Beatty, Nevada

6. On-Site Disposal

A. Chlorate Wastes - graphite, calcium carbonate, calcium sulfate

Company	Years	Estimated Volume-Cu.Ft.	Disposal Site
WECCO	1945-1950	52,000	BMI Ponds BMI Ponds BMI Ponds BMI Ponds BMI Dump
WECCO -	1951-1955	52,000	
AP&CC	1956-1967	162-,000	
KMCC	1968-1974	125,000	
KMCC	1975-1980	90,000	

Mr. Clyde B. Eller Page 4 May 2, 1980

B. Manganese Wastes - manganese ore, heavy metal sulfides, diatomaceous earth, paraffin wax

Company	Years	Estimated Volume-Cu.Ft.	Disposal Site
WECCO	1951-1955	95,000	Company Ponds
AP&CC	1956-1967	426,000	Company Ponds
KMCC	1968-1973	375,000	Company Ponds
KMCC	1974-1980	585,000	KMCC Site

C. Perchlorate solids are not measurable.

1951-1974 - Disposed to BMI ponds 1975-1980 - Disposed to company ponds

7. Location

(See attachment.)

8. Outside Parties

None

9. Storage

We do not consider on-site wastes to be stored, although some rearrangement may ultimately take place.

10. Ground Water Monitoring

None conducted.

LIQUID WASTE

: : 11. Identity

Liquid effluents generated by the various processes described in 1-3 above are retained in several impervious ponds on KMCC property. Mose are recycled back to the specific process after concentration through solar evaporation. In the summer months, once-through cooling water, up to 4 MM gallons/day, is discharged under the terms of an NPDES permit via the BMI storm drain to the Alpha Ditch.

Mr. Clyde B. Eller Page 5 May 2, 1980

12. Off-Site Disposal

None

13. On-Site Disposal

A. Combined Effluents (except Manganese Dioxide wastes)

Up to 1976, disposal was to BMI ponds. Average volume, based on 1970 NPDES report, 600,000 gallons per day. Average content:

B. Manganese Dioxide

Tailings described in 4C were slurried in water and disposed of on site (leach beds).

Daily volume - 86,000 gallons/day (estimate)
Total volume - 330 million gallons

C. Lined Ponds

Use of lined ponds started in 1974 and continues to the present. The ponds and the aqueous chemical solutions stored in them are listed below. Contained volume and composition are reported as of February 12, 1980.

Mr. Clyde B. Eller Page 6 May 2, 1980

Pond	Volume, Gallons	Source	Contents
No. C-1	1,730,000	Boiler, Cooling Tower Blowdown	63,400 lbs. NaCl
·		Plowdenia	22,450 ppm TDS
P-2 28	284,200	Ammonium Perchlorate & Sodium Chlorate Operations	251,000 lbs.
	•		NaC1
		· ·	1,094,000 lbs. NaClO ₃
P-3	283,000	Sodium Chlorate Operations	193,400 lbs. NaCl
		· ·	440,000 lbs. NaClO ₃
s-1	S-1 660,000	Potassium & Boron	345,000 lbs. NaCl
0	Operations	100,200 lbs. NaClO ₃ 139,200 lbs. NaClO ₄	
AP-1 353,	353,000	Ammonium Perchlorate Operations	103,000 lbs. NaCl
	·		123,600 lbs. $NaClO_3$
			135,300 lbs. NaClO ₄
AP-2	MT	Ammonium Perchlorate Operations	The second secon
AP-4	412,000	Ammonium Perchlorate Operations	120,000 lbs. NaCl
			34,300 lbs. NaClO ₄ -
			92,700 lbs. NH ₄ ClO ₄

Note: Contents of all ponds, except C-1 and S-1 are recycled to an appropriate process.

Mr. Clyde B. Eller Page 7 May 2, 1980

14. Location

(See attachment)

15. Pond Monitoring

The level of each pond is gauged each week. The ponds are sampled and analyzed every two to three weeks. The gauging, together with knowledge of activity in the use of the pond, has been considered adequate in detecting leaks. On this basis, pond P-1 was abandoned (and is now being rebuilt), and pond AP-2 is being rebuilt. Actual leakage rates have not been measured. Through experience, better liner materials and construction methods have been employed in the more recent ponds.

16. Residues

Dried residues from ponds P-1 and AP-2 have been removed to the BMI dump.

17. Storage

As indicated previously, contents of most lined ponds are recycled to a process. In that sense we do not consider the contents to be "waste," but rather process materials.

18. Outside Parties

Apparently the government used a dyked area at the northern part of KMCC's property for disposal of liquid wastes, presumed to be caustic solutions, i.e., sodium hydroxide. The quantity and time period are unknown. State Industries, a lessee, impounds pickling wastes in lined ponds. These are believed to be essentially spent sulfuric acid and ferrous sulfate (in water).

19. Ground Water Monitoring

None has been conducted.

Mr. Clyde B. Eller Page 8 May 2, 1980

Obviously it is difficult to briefly address 35 years of history for which there are few records and which involve several operations and four management entities with a high degree of completeness and accuracy. Accordingly, we will continue to assess the above data and will revise or modify them as may prove appropriate.

Sincerely

KERR-McGEE CHEMICAL CORPORATION

C. B. Armstrong Plant Manager

CBA:jc Attachments

cc: Marvin Tebeau

CERTIFIED MAIL NO. 882483

RECEIVED REGION IX

m 5 9 1 開始



State Industries, Inc./Henderson, Nevada 89015 AC 702/564-2561

April 23, 1980

Mr. Clyde B. Eller Director, Enforcement Division EPA Region IX 215 Fremont Street San Francisco, California 94105

Dear Mr. Eller:

Enclosed please find the copy of the completed questionnaire which you sent to us last month. Also attached is the information of the industrial waste survey we have filed to the City of Henderson earlier this month, and a drawing of the evaporation ponds we have in the plant.

If I can be of further assistance, please feel free to contact me at (702)-564-2561 Ext. 132. Thank you.

Sincerely Yours,

Adolf Hand

Manager, Industrial Engineering

Western Division



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

215 Fremont Street San Francisco, Ca. 94105

> CERTIFIED MAIL NO. P125847818 RETURN RECEIPT REQUESTED

E - 5 - 2In Reply SOW-HAZ-6-6-2-6 Refer to:

25 MAR 1980

Mr. Curtis Tidwell Plant Manager State Industries, Inc. P.O. Box 844 Henderson, NV 89015

Dear Mr. Tidwell:

The United States Environmental Protection Agency (EPA) is currently seeking to identify sites where hazardous wastes have been disposed or are being stored for disposal. Under Section 308 of the Clean Water Act (CWA), 33 U.S.C. 1318, Section 114 of the Clean Air Act (CAA), 42 U.S.C. 7414, and Section 3007 of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6927, EPA is authorized to require records and other information as necessary to administer the CWA, CAA, and RCRA.

In order to determine whether hazardous wastes have been or are being disposed, stored or transported on or off your property you are hereby required to report the following information within 30 days of receipt of this letter.

GENERAL

- When did your company begin manufacturing operations at 1. your present location? 1969
- What products have been manufactured since operations 2. began? Give trade names/common names and describe any changes with time. DOMESTIC WATER HEATERS
- Identify the raw materials used in the manufacturing operations described in 2 above (specific chemical com-Sulphuric pounds and common names).

HUT ROIL STEEL

STEEL COID ROLL

BORAX

SUDA ASH

INSULATION (FIBER & FOAM)

-SHEAK ACID

Turco HTC. SOAP - picking liquid Dubis RUST PREVENT of based com

Du Bois LUBRICANT (Gent)

DUHOUS DETERMENT (head do -.

SOLID WASTE

Identify the solid wastes produced by the manufacturing 4. operations described in 1 through 3 above (specific chemical compounds and common names). CAROBOARD, INSULATION

SCHAY STEEL, THIED PAINT, ENAMEL MIX For those solid wastes that have been disposed of off-5. site (i.e., off your property and off BMI property) supply the following information:

> *identity of wastes (specific chemical compound and common names)

FILAMEL MIY. DRIED PAINT, CARD BOARD, INSMET ON CHAP STEEL

*volume of wastes

2 TRUCK LOAD, /SAY

(内有)(注)()

1.21

*name and location of dump sites NEVAM RECYCLING, L.V. DUMP SITE, Black mountains dump For those solid wastes that have been disposed of on-6. site (i.e., on your property or on BMI property) supply the following information silver state dump.

*identity of waste (specific chemical compounds and common names) NONE

*volume of wastes

- *disposal method (i.e., drums, burial, burning, 人物经验证
- *dates when this disposal method began and ended for each identified waste product
- Show by a simple map, drawn to scale, the locations of 7. the active and inactive solid waste disposal sites described in 6 above. NONE.
- Have any outside parties used your property for the 8. disposal of their solid waste? If so
 - *identify the party
 - *identify the waste (specific chemical compounds and common names)
 - *specify the volume of the waste, the time period during which the waste was deposited on your property and show the location of the disposal site on the map described in 7 above.

- If you consider solid wastes located on-site (i.e., on your property or on BMI property) to be stored rather Scrap steel is temporarily stored and handed away for than disposed *identify the waste and its volume (specific chem
 - ical compounds and common names)
 - *identify the storage method (drums, burial, etc.)
 - *show the location of storage site(s) on the map described in 7 above.
- If you have conducted any groundwater monitoring in the vicinity of your solid waste disposal or storage sites describe the location of the monitoring wells, their depths and the results of any groundwater analyses.

LIQUID WASTE

- Identify the liquid wastes produced by the manufactur-11. ing operations described in 1 through 3 above (specific chemical compounds and common names). Identify and estimate the volume of liquid process wastes which enter the BMI storm and domestic waste (sewage) systems; the remainder of your liquid process waste stream is covered by the following questions. See Question 13.
- For those liquid wastes that have been disposed of off-12. site (i.e., off your property and off BMI property) supply the following information:
 - *identity of wastes (specific chemical compounds and common names)
 - *volume of wastes
 - *name and location of dump sites
- For those liquid wastes that have been disposed of 13. on-site (i.e., on your property or on BMI property) supply the following information: SOLAR EVAPORATION POND - lined pond
 - *identity of waste disposed of in leachbeds or directly on the earth's surface (specific chemical compounds and common names)

PHOSPHATES CHEMILAL S. ACID. BULAY & SOJA ASH, SUPPLUME acid (neutralizer)

in gailmonth

4

160 - ACID 16 ar - DHOS

*identity and volume of wastes disposed of in lined ponds (specific chemical compounds and common names)

**Million God capacity*

Drug hids

*dates when these disposal methods began and ended for each identified waste product

- 1975 PATSTAT

 14. Show by a simple map, drawn to scale, the locations of the active and inactive liquid waste disposal sites described in 13 above.
- If lined ponds have ever been used for the disposal of GRADUATE liquid wastes (see 13 above) describe the monitoring system used to detect leaks, estimate past and present leakage rates, identify those ponds which are leaking, and describe any plans to upgrade the pond linings.

 By measuring the DEPTH DEP

16. Where are sludges and residues removed from the ponds disposed of?

HAVENT LONG ANTTHING YET

- 17. If you consider liquid wastes located on-site (i.e., on your property or on BMI property) to be stored rather than disposed
 - *identify the waste and its volume (specific chemical compounds and common names)
 - *identify the storage method (drums, tanks, etc.)
 - *summarize significant leaks and spills
 - *show the location of storage site(s) on the map described in 14 above.
- 18. Have any outside parties used your property for the disposal of their liquid waste? If so MO
 - *identify the party
 - *identify the waste (specific chemical compounds and common names)
 - *specify the volume of the waste, the time period during which the waste was deposited on your

property and show the location of the disposal site on the map described in 14 above.

19. If you have conducted any groundwater monitoring in the vicinity of your liquid waste disposal or storage sites describe the location of the monitoring wells, their depths and the results of any groundwater analyses.

Section 309 of the CWA, 33 U.S.C. 1319, Section 113 of the CAA, 42 U.S.C. 7413, and Section 3008 of RCRA, 42 U.S.C. 6928, provide for civil or criminal penalties for failure to submit information and criminal penalties for knowingly making a false statement.

Your cooperation is appreciated.

Kathleen J. Shimmin for

Clyde B. Eller

Director

Enforcement Division

1 /

cc: Marvin Tebeau, Nevada DEP



PACIFIC ENGINEERING & P. uction Co. of Nevada

8201 GIBSON ROAD • P.O. BOX 797 • HENDERSON. NEVADA 89015
TELEPHONE: AREA CODE 702 565-8741

April 16, 1980

Mr. Clyde B. Eller, Director Enforcement Division Environment Protection Agency Region IX 215 Fremont Street San Francisco, California 94105

Re: E-5-2 SOW-HAZ-6-6-2-6

Dear Mr. Eller:

The following answers have been prepared in response to your questions of 25 March 1980.

Question #1

Pacific Engineering began manufacturing operations at this present location on December 29, 1958.

Question #2

Since operations began Pacific Engineering has manufactured ammonium perchlorate, electrolytic anodes, sodium perchlorate, sodium chlorate, potassium chlorate and pollution control equipment including on-site electrolytic hypochlorite generating systems and gaseous odor control systems.

Question #3

The raw materials used with the items listed above are as follows:

Ammonium perchlorate - hydrochloric acid (HCl) and ammonia (NH3).



Mr. Clyde B. Eller

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April 16, 1980

Sodium perchlorate - sodium chlorate (NaClO3), sodium hydroxide (NaOH), sodium fluoride (NaF) and barium chloride (BaCl2).

chlorates - sodium and potassium chlorides (NaCl & KCl), calcium chloride (CaCl2) and hydrochloric acid (HCl).

Electrolytic electrodes - nitric acid (HNO3), graphite, sodium fluoride (NaF) and lead oxide (PbO).

Equipment - all components such as FRP shapes, rectifiers, towers, bus bar, pumps, etc. are purchased. Electrodes are manufactured by Pacific Engineering.

Question #4

The solid wastes generated by the above listed products are as follows:

Ammonium perchlorate - none

Electrodes - used and fabrication process graphite scrap.

Sodium perchlorate - barium sulfate (BaSO₄), calcium carbonate (CaCO₃)

<u>Chlorates</u> - barium sulfate (BaSO₄), calcium carbonate (CaCO₃).

Equipment - packaging material

Question #5

The only solid wastes disposed of off the Company property are paper and other trash associated with the office and plant operations. This material is delivered weekly to the Henderson transfer station of the local disposal company.

The volume of office trash is probably less than 30 cubic feet per week.

PACIFIC ENGINEERING & Production Co. of Nevada



Mr. Clyde B. Eller

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April 16, 1980

Question #6

Other than the barium sulfate and calcium carbonate precipitates, the solid wastes that have been disposed of on-site are limited to used and fabrication process graphite scrap. These scraps are divided. Those salvageable are stored in drums; those not salvaged are buried.

New graphite scrap material accumulates at about 10 cu.ft. per There are now about 300 - 50 gallon drums in storage. We estimate that there is about 2,000 cu.ft. buried-and waiting to be buried.

The calcium carbonate and barium sulfate precipitates, estimated to be less than 20 cu.ft. per year, are buried.

The practice began in about January 1959 and continues.

Question #7

The requested map showing disposal sites is enclosed.

Question #8

No outside parties used our property for disposal of their solid waste.

Question #9

The graphite scrap in drums is considered to be stored. As noted above we currently estimate there to be about 300 - 50 gallon drums of this material.

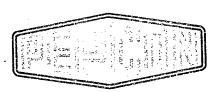
There is a market for graphite scrap.

Question #10

We have not conducted any ground water monitoring in the vicinity of our solid waste disposal.

Question #11

The liquid wastes produced by the manufacturing operations described in question 2 above are as follows:



Mr. Clyde B. Eller

-4-

April 16, 1980

Ammonium perchlorate - cooling tower blowdown and plant wash down.

Sodium perchlorate - cooling tower blowdown and plant wash down.

Chlorates - cooling tower blowdown and plant wash down.

Electrolytic electrodes - plant wash down.

Equipment - none

Question #12

We have not disposed of any liquid wastes off-site.

Question #13

The liquid wastes disposed of on-site as noted in our February 7 letter include waste water from cooling tower blowdown and plant wash down containing trace amounts of chlorides, chlorates, and perchlorates which have been used for gravel washing, road maintenance, dust control on land and fire prevention. The volume has varied depending on weather conditions, plant operations, etc. but may average 12,000 gallons per day.

There are not now and never have been lined ponds.

The practice began in 1959 and continues.

Question #14

The map referenced in 7 is enclosed.

Question #15

No lined ponds have been used.

Question #16

No sludges or residues have been removed from the pond. .

Question #17

We do not store any liquid wastes.



PACIFIC ENGINEERING & Production Co. of Nevada

Mr. Clyde B. Eller

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April 16, 1980

Question #18

No outside parties have used our property for disposal.

Question #19

We have not conducted any ground water monitoring.

We trust that the above satisfactorily answers your questions.

Very truly yours,

Fred D. Gibson, Jr.

President

FDG:1r Enclosure water, it will no longer float. How valid is this analysis then?

Page 39

Paragraph 1 If as you say $P_c^{WO} = P_c^{OA}$ then $H/h = \Delta O - \Delta A$ what happens when $\Delta W - \Delta O$ what happens when $\Delta W - \Delta O$? Is this equation still valid?

Paragraph 2 You haven't proved that the entry point is a buried tank! What is your estimate of total benzene lost by adsorption? Are the retention mechanisms for oil in sand the same as for benzene in sand? What about the influence of water discharges from Stauffer? Wouldn't this decrease the retention capacity?

Page 40

Paragraph 1 This model does not account for organic phases travelling as heavier than water phases! What happens to compounds other than benzene? Are heavier and dissolved phases subject to higher velocity downgradient motion?

INSTRUCTIONS WASTE DISPOSAL SITE SURVEY

PURPOSE

WHO IS INCLUDED IN THE SURVEY

TIME PERIOD TO BE COVERED

FORMS: A: GENERAL FACILITY INFORMATION

DISPOSAL SITE INFORMATION B:

C:

HAULER INFORMATION SUPPLEMENTAL HAULER INFORMATION D:

COMPLETING THE FORM

WHO TO CALL WITH QUESTIONS

WHO TO RETURN FORMS TO

WHEN TO RETURN FORMS

Conducted by:

Subcommittee on Oversight and Investigations Committee on Interstate and Foreign Commerce U. S. House of Representatives

Hon. Bob Eckhardt, Chairman

April 1979

PURPOSE

This Waste Disposal Site Survey is being conducted by the Sub-committee on Oversight and Investigations of the Committee on Interstate and Foreign Commerce, U. S. House of Representatives. The purpose of the survey is to begin to identify the location of sites in the United States used for the disposal of chemical plant process waste materials since 1950. The fifty largest chemical companies and their subsidiaries or affiliates are included in this first national survey. Information gathered will assist the Congress in addressing the problems posed by active as well as inactive or abandoned waste disposal sites. The information will also be useful to the U. S. Environmental Protection Agency in effectively implementing the Resource Conservation and Recovery Act of 1976.

WHO IS INCLUDED IN THE SURVEY

The survey is based on the experiences of the 50 largest chemical companies in the United States. A complete set of instruments is to be filled out for every facility or plant in the United States owned, operated or leased by one of these companies or any of their subsidiary or affiliated companies.

It is recommended that the corporate headquarters, to whom the survey instruments are sent, send a complete set of instruments and the instruction manual to the plant manager or supervisor of each of the company's plants or facilities. The plant manager or supervisor should then complete the forms using whatever records or employee knowledge he or she may have at his or her disposal. It is further requested that completed forms from each facility be returned to the corporate headquarters for final collation before returning them to the Subcommittee.

TIME PERIOD TO BE COVERED

It is the Subcommittee's intention to collect information on waste disposal sites used since 1950 (or since the time a particular facility began operation if after 1950). Some facilities may not have formal records on waste disposal dating back to 1950. The Subcommittee requests that every effort is made to reconstruct waste disposal practices for which written records do not exist. Most important is the identification (by name and location) of all sites used for the disposal of process wastes from a facility since 1950. It is very likely that employees with some tenure at a facility will know where wastes were disposed of; thus the knowledge employees may have of waste disposal practices by the facility should be explored along with record searches.

FORMS

The instrument package consists of 4 separate forms as described below:

FORM A: GENERAL FACILITY INFORMATION: This form elicits information on the total amount of process waste generated by a facility in 1978 and the methods used other than sale for use for the disposal of these wastes. This information will provide a general picture of the facility's current operations. The form also requests information on the number of sites used since 1950 for the disposal of process wastes and the hauling of process wastes from the facility. The answers to these questions will indicate whether or not (and in what numbers) Forms B, C and D need to be completed.

FORM B: DISPOSAL SITE INFORMATION: This form is to be completed for every disposal site used by the facility since 1950 for the disposal of the facility's process wastes. The property on which the facility is located may also have been used for waste disposal; if so, one Form

"B" should be used for this "on site" disposal. The form elicits information on the name, location and ownership of the site, the dates the site was used by the facility, the amount and content of the process waste disposed at the site from the facility, the current status of the site as well as the types of disposal methods used at the site. In all instances a facility should seek the answers to each of the questions. (NOTE: Form "B" consists of 2 pages.)

FORM C: HAULER INFORMATION: This form asks a facility to list the names and addresses of all firms or independent contractors (including the company and its affiliates and subsidiaries) who since 1950 removed process waste materials from the facility. Information on the years used is also requested.

FORM D: SUPPLEMENTAL HAULER INFORMATION: Some process wastes may have been hauled from a facility and taken to a location unknown to the facility. For every firm or contractor who has taken waste in this manner from a facility, Form D elicits information on the content and amount of wastes hauled and the dates the hauler was used.

COMPLETING THE FORMS

The information requested on the forms is largely numerical in nature. Block spaces have been provided for this information. Respondents are requested to write (or type) responses clearly within these spaces. In any instance in which the response has fewer digits than the number of spaces provided, the response should be right justified. For example, if a facility generated 21,292 tons of process waste during 1978, the response on Form A, Question 3 would be recorded as follows:

In requesting information on amounts of process waste generated, disposed at a given site or hauled by a given firm/contractor, three different categories (gallons, tons and cubic yards) have been provided. One or all of these categories may be used, depending upon which is most convenient for a facility. In no instance, however, should the amount of waste be double counted (i.e. a given amount should not be recorded as both gallons and tons).

All non-numerical responses (eg. names and addresses) should be written legibly or typed in the spaces provided. If there is a need to clarify responses to any questions, clarification should be provided on the back of the form or on an appended page.

WHO TO CALL WITH QUESTIONS

The Subcommittee will hold a private briefing for all companies asked to participate in this survey on Friday, April 27, 1979 at 3:00 p.m. in 2123 Rayburn House Office Building in order to answer any questions or concerns. Companies should hold all initial questions for this private briefing. Following this date, all questions should be directed to Anne Cohn, Survey Coordinator at (202) 225-4231 or Mark Raabe, Staff Director, at (202) 225-4441.

WHO TO RETURN FORMS TO

The Subcommittee requests that a company compile completed forms from all of their facilities and forward the entire package, at one time, to:

Hon. Bob Eckhardt, Chairman Subcommittee on Oversight and Investigations Committee on Interstate and Foreign Commerce 2323 Rayburn HOB U. S. Congress Washington, D. C. 20515

Attn: Survey Coordinator

WHEN TO RETURN FORMS

All completed forms are to be returned to the Subcommittee no later than June 29, 1979.

FORM	D: SUPPLEMENTAL HAU R INFORMATION (1-8)
CLUI REMO	LETE THIS FORM FOR 1 A FIRM OR INDEPENDENT CONTRACT (IN- ING YOUR OWN COMPANY, ITS AFFILIATES & SUBSIDIARIES) WHO OVED PROCESS WASTE FROM THIS FACILITY SINCE 1950 AND TOOK IT
\	N UNKNOWN LOCATION
iv./s.b. Com	oany Name:
Name	e of Hauling Firm/Contractor:
Addı	ress: (no.) (street) (zip code)
	(020)
1.	Year first used
2. 3.	Total amount of process waste hauled from this facility:
	thousand gallons
	thousand cubic yards (29-36)
4.	Components (or characteristics) of process waste from this facility disposed at site: (1=present in waste; 2=not present in waste; 9=don't know):
	FILL IN EVERY BLOCK SPACE
,	Acid solutions, with pH<3
	pickling liquor
	circuit etchings [] (40)
	inorganic acid manufacture
	Base solutions, with pH>12
	nylon and similar polymer generation
	scrubber residual
	arsenic, selenium, antimony
	mercury (49) iron, manganese, magnesium (50)
	zinc. cadmium. copper, chromium (trivalent)
	chromium (hexavalent) [52]
	Radioactive residues. >50 pico curies/liter
	uranium residuals & residuals for UF ₆ recycling
	phosphate slag [57]
	thorium [58] radium (59)
	other alpha, beta & gamma emitters
	insecticides & intermediates
	herbicides & intermediates
	rodenticides & intermediates
	halogenated aliphatics
	acrylates & latex emulsions (68)
	PCB/PBB's [69] amides, amines, imides [70]
	plastizers [/1]
	elastomers
	solvents polar (except water)
	trichloroethylene
	other solvents nonpolar
	solvents halogenated aromatic
	oils and oil sludges
	alcohols
	ketones & aldehydes
	Inorganics
	salts
	$Misc_{const}$
	paints & pigments
	catalysts (eg. vanadium, platinum, palladium)
	asbestos
	air water reactive wastes (eg. P4, aluminum chloride)
	waspe with transference to the contract of the

KERR-McGEE CORPORATION

INTERNAL CORRESPONDENCE

3

TO A. L. Anderson

DATE May 17, 1979

FROM R. E. Harris

SUBJECT Analysis of Henderson Plant EIMCO Tails for RCRA Leach

Test; Project 1526

This is to confirm the results given to you today by Wil Robertson in a preliminary report. The sample of EIMCO tails submitted with your memo of March 5, 1979 to Dr. Long has been analyzed according to the RCRA extraction procedure given in Fed. Register 43 No. 243, December 18, 1978, pp. 58956 and 58957. The organics were assayed by ARRO Laboratories in Joliet, Illinois.

As can be seen in the attached table of results, all of the values are well below the RCRA Limit except Cd and it is 1/2 the limit. On this basis the sample of material sent to us would not be considered a hazardous waste on the basis of toxic substances as defined in Section 250.13(d) of the proposed regulations.

R. E. Harris

REH/nvb

Attachment

cc: C. H. Long

TABLE I

EXTRACTION PROCEDURE EXTRACT

Section 250.13(f)

Extract: Solid Ratio = 20:1 (wt.)

	Sple 2/24 to 2/28/79	RCRA Limit
As	0.007 mg/1	0.50 mg/l
Ba	0.021	10.0
Cd	0.049	0.10
Cr	0.002	0.50
Pb	0.002	0.50
Hg	<.001	0.02
Se .	0.012	0.10
Ag	<.001	0.50
Endrin	<.001	0.002
Lindane	<.001	0.040
Methoxychlor	<.001	1.0
Toxaphene	<.001	0.050
2,4-D	<.001	1.0
2,4,5-TP	<.001	0.1

April 11, 1979

Mr. C.B. Armstrong, Plant Manager Kerr-McGee Chemical Corporation P.O. Box 55 Henderson, NV 89015

Dear Mr. Armstrong:

This letter is to acknowledge receipt of the information the Division of Environmental Protection requested of Kerr-McGee Chemical Corporation on February 23, 1979.

As you are aware this information was requested by the Division of Environmental Protection in view of the unauthorized discharges into the old BMI ponds and the Henderson treatment plant. These discharges are a violation of NRS 445.221. The information should provide this office with a better understanding of your facilities waste water treatment system and the various process waste it receives.

In order for this office to more thoroughly understand the relationship of the various industries in the BMI complex, a meeting with all parties in the BMI complex is proposed. This meeting will be held in the BMI conference Room at 9:00 a.m. on April 24, 1979.

It is requested that a representative of Kerr-McGee Chemical Corporation attend the meeting. This person should be prepared to provide a brief presentation addressing the legal boundries Kerr-McGee is responsible for, the information previously submitted, the facilities network of ditches which enter the common EMI ditch and any additional information that you feel would aid our understanding of the BMI complex.

Should you have any questions or suggestions concerning this matter please contact Marvin Tebeau at (702) 885-4670. Thank you for your cooperation.

Sincerely,

Roland Westergard Director

gc cc: Greg Fischer E-5-2 U.S.E.P.A.



Type of Sampling

P.O. Box 686 Caton Farm Road Joliet, Illinois 60434 Telephone (815) 727-5436 Telex 723421 UAR JOL

Attention of Mr. D.G. Biechler	P.O.	Number
Attention of	Date	Paceived March 22 1979
Company Kerr McGee Corporation	Date	- A *1 11 1070
Address P.O. Box 25861	Date	Completed April 11, 1979
City/State/Zip Oklahoma City, OK 73125		
City/State/Zip Unidilia Ulty, Ult		

ARRO NO.	SAMPLE DESCRIPTION	ARRO PICK-UP	ARRO SAMPLING	DATE
42746E	552-REH-1-147 Lea	achate		3/22
				

WASTE WATER ANALYSIS

·	<u></u>		
	42746		
BOD, 5-day			
Cadmium			
COD			
Chlorides			
Chlorine,Total Residual			
Chromium, Hex			
Chromium, Tri			
Chromium, Total			
Copper			
Cyanide, Total			
Iron, Total			
Lead			
Nitrogen, Total as N			 _
Nitrogen, Ammonia as N			
Nitrogen,Organic as N		<u> </u>	
Oils & Grease			
рН			
Phenols	(
Phosphate, Total (as PO4)			
Phosphorus (as P)			
Solids, Total	<u> </u>		
Solids,Dissolved		<u> </u>	
Solids, Total Suspended			
Solids, Volatile Suspended			
Sulfate (as SO4)		<u> </u>	
Zinc			
Endrin	< 0.1 ppB		_
Lindane	< 0.1 ppB		
Methoxychlor	<0.1 ppB		
Toxaphene	< 0.1 ppB		
2.4-D	<0.1 ppB		
2, 4, 5-TP	<0.1 ppB		
· · · · · · · · · · · · · · · · · · ·			
	SAMPLE COLLECT	TION DATA	

ROMA: GAS OU FULLTY INFORMATION

cogany Name: Ferr-McGee Corporation (7)
actions Received Rerr-McGee Chemical Corporation, Henderson Plant
P. O. Box 55
No. Street
Henderson, NV 89015
City
name of Person Completing Form: R. B. Chase
Position: Manager, Production
Thone Number:(702) 565-8901
1. Year Facility Opened
2. Primary SIC Code :
3. Estimate the total amounts of process wastes (excluding wastes sold for use) generated by this facility during 1978: use only the facility of pushing thousand gallons
hundred tons
thousand cubic yards
 Estimate (in whole percents) how these process wastes generated in 1978 were disposed of:
in landfill
in pit/pond/lagoon[1]0](45-47)
in deep well
incinerated
reprocessed/recycled
evaporated [] 0] (57-59)
<u> </u>
other (Specify)[1]0](63-65)
5. What is the total number of known sites (including disposal on the property where this facility is located as one site) that have been used for the disposal of process wastes from this facility since 1950?
COMPLETE ONE FORM "B" FOR EACH OF THE SITES
6. Have any of the process wastes generated at this facility been hauled (removed) from this facility for disposal? (Yes=1; no=2)
IF YES, COMPLETE FORM "C"
7. Do you know the disposal site locations of all of the process waste hauled from your facility since 1950? (Yes=1; no=2)
IF NO, COMPLETE ONE FORM "D" FOR EACH FIRM OR CONTRACTOR AND TOOK WASTE TO AN UNKNOWN LOCATION
8. Specify the earliest year represented by information from company or facility records supplied on this and other forms
9. Specify the earliest year represented by information from employee howledge supplied on this and other forms

CXPLETE THIS FORM FOR INLRY SITE (INCLUDING THE LOCATION OF THIS FACILITY AS ONE SITE) USED FOR THE DISPOSAL OF PROCESS RASTES GENERATED BY THIS FACILITY SINCE 1950.

	gruny Name:	Kerr-McGee							
		Kerr-McGee	Chemical	Corpora	tion		-		
	me of Site: dress of Site	BMI Dump							
74.10	11633 01 3116	no.	Street						
			321662						
		Henderson,		NV		89015			
		city		state	zip	code			
Nan	ne of Owner (while used by f	facility):	Basic M	lanagement	Incor	porated	(BMI)	
Add	lress:								
		no.	street						
	He	nderson		NV	g	9015			
		city		state		code			
	rent Owner (if different fr	om above)	:					
		no.	street						
		city		state					
		CIU		State	21p	code			
1.	Location (1	the property	on which i	facility:	is located;	2= off-	site)	. 12 [(10)	
2.	Ownership a	t time of use (l= company	y ownersh	ip; 2=priva	te but r	iot		
-	company own	t time of use (c ownershi	ip) .٤٠.٠/	ci 4 krcw			. 2 (11)	
3.	CULLET Sta		Z= ST111	in lise: '	יחות לו התחוו	<i>-</i> 1		12 1 (12)	
4.	Yaze fires	F CLÒSED, speci	ry year cl	losed		• • • • • • •	19	(13-14)	
š.	Year last n	used for process	s waste in	rom this :	racility		19	[<u>51</u> 0] (15-16)	
٠.	still in use	sed for process	waste III	MI CHIS I	cility (en	ter/9-	111	30 4 (17 10)	
6.	TOTAL AMOUNT	of process was	STA TYOM 1	thic fact	ity dienoca	ad ar ci	+ ~ *		
• •	use tens c	ily if pessible-	thousa	und callor	rrey arspose	:u at 51		(20. 26)	
	right just	nly if pessible-	hundre	ed tons		⊔	-!-!-! ;	113 (27-33)	
		~	thousa	and cubic	vards	1 1		(34-41)	
7.	Specify type	(s) of disposal	i me inoa (5	ii usea ai	: Site and v	mether	method	(34-41)	
	is still in 9=don't know	use (1=current)	ly in use;	; 2≕no 1or	iger in use;	3≃neve	r used;		
			landfi	11, mono	industrial	waste .		[3] (42)	
			landfi	.ll, mixed	l industrial	waste		1 In (43)	
			rangri	.ii. arum	æd waste			+ 3t (44)	
			nite/n	11, munic	ipal refuse	co-dis	posed	[3] (45)	
			deep v	onds/ rago	ons	•••••	• • • • • • • • •	[3] (46)	
			land f	armino	tion	• • • • • • •		[3] (48)	
			incine	ration			•••••	2 (49)	
			treatm	ent (eg	neutralizin	a)		뮵쭚	
			reproc	essing/re	cycling	6)	•••••••	ाँशे हिं	
_								[3] (52)	
8.	Users of thi	s site (l=this	facility:	2=this f	acility and	other	COMDANY	_	
	racilities o	nly; 3=this com	pany and	others; 9	=don't know	ı)	• • • • • • • • •	<u>ုဒ</u> ြ (53)	
	LIST XXES	AND ADDRESSES O	F OTHER K	NOWN USER	S BELOW			•	
	Timet, Her	nderson, NV	89015						
	Stauffer (Chemical Comp	any, Her	nderson,	NV 890	15			
	Flintkote	Lime Company	r. Hender	rson. NV	89015				
	Montrose (Chemical Comp	any, Her	nderson,	NV 890	15			
	Jones Cher	mical Company	, Hender	rson, NV	89015		_		
	Bacia Ma	onstruction (ompany,	041 Nat	ional Str	eet, He	nderson	, พง 89015	٠
	Dasic Man	agement Incom	poraced,	, nender	son, NV				
	o. o. bur	eau of Reclam	mation, b	Labinoc	CITY, NV	89005)		

FORM B - Page 2		(D) NOT USE) (1-8)
Company Name: _	Kerr-McGee Corporation	
Facility Name:	Kerr-McGee Chemical Corporation, Hence	derson Plant
Site Name:	EMI Dump	
disposed at 9=don't kno		is facility waste;
FILL IN EVE	RY BLOCK SPACE	121 (10)
Acid soluti picklim metal picircuit inorgam organic Base soluti caustic nylon a scrubbe Heavy metal arsenic mercury iron, fizinc, chromit lead. Radioactiv uranium lathan phosph thorium radium other Organics insectic herbic fumgic rodent haloge haloge acryla PCB/PF amides plasti ressing elasti resing elasti resing elasti resing elasti resing elasti solver carbon trich other solve solve carbon trich other solve solve in solve solve in solve solve in solve solve in solve solve in solve solve in solve solv	ons, with pH<3. g liquor lating waste etchings ic acid manufacture acid manufacture ons, with pH>12 soda manufacture ons with pH>21 soda manufacture ind similar polymer generation residual s & trace metals (bonded organically & inorg selenium, antimony manganese, magnesium cadmium, copper, chromium (trivalent) im (hexavalent) residuals & residuals for UF6 recycling ide series elements and rare earth salts ate slag alpha, beta & gamma emitters ides & intermediates ides & intermediates ides & intermediates icides & intermediates inated aliphatics mated aliphatics mated aliphatics mated aliphatics mated aromatics tets & latex emulsions BN's s, amines, imides izers solvents nonpolar nts halogenated aliphatic nts halogenated aliphatic nts halogenated aliphatic nts halogenated aromatic and oil sludges s and ethers ols se & aldehydes ns secutical wastes	Z (12)
paint catal asbes shock	accutical wastes s & pigments systs (eg. vanadium, platinum, palladium) tos sensitive wastes (eg. nitrated toluenes) vater reactive wastes (eg. P4, aluminum chlor es with flash point below 1000 F	12j (64) 12j (65) 12j (66) 12l (67)

FORM B:	DISPOSAL	SITE	INFORMATION

عدم.د

Ш	_L	11	\perp l	1	ı	(1-8
	(DO	NUT	US.	L)		

CAPPLETE THIS FORM FOR EVERY SITE (EXCLUDING THE LOCATION OF THIS FACILITY AS ONE SITE) USED FOR THE DISPOSAL OF PROCESS KASTES GENERATED BY THIS FACILITY SINCE 1950.

	mpany Name:	Kerr-McGee	Corporat	ion			
	ility Name:	Kerr-McGee	Chemical	Corporati	on, Henders	on Plant	
	ne of Site:	BMI Ponds				_	
Add	lress of Site:					_	
		no.	street			_	
		Henderson,	NV		89015		
		city		state		-	
		city		state	zip code		
Nan	e of Owner (wi	nile used by f	acility):	Basic Mana	gement Inco	rnorated ((RMT)
Add	ress:		,,.		gement Inco.	-poraceu	(DITE)
		no.	street			-	
		<u>Henderson</u>	<u>NV</u>	89015		_	
		city		state	zip code		
Cur	rent Owner (ii	different fr	om above):	-			
Add	ress:					-	
		no.	street			-	
	•						
		city		state	210 0010	-	
		Caty		State	zip code		
1.	Location (1=	the property of	on which fa	cility is 1	ocated; 2= off	-site)	121 (10)
2.	Ownership at	time of use (l= company	ownership:	2=private but	not	(2)
	company owner	ship) 3=public	ownership) 9= dein4	لدحب	• • • • • • • • • • •	. [21 (11)
3.	with State	15 (1- C10360)	~~ >!!!! I	n use: 9=ao	נאסמא זים		. 121(12)
	11-	LLLOED. Specif	rv vear clo	ised		104	· 4 (13-14
4.	iear first us	sea for process	s waste fro	m this faci	lity	191	50 (15-16
5.	rear rast use	a for process	waste from	i this facil	ity (enter "79	" if	
	still in usel					101-	7]6] (17-18
6.	lotal amount	of process was	te from th	is facility	disposed at s	ite:	
	cicht dista	G. respense.	thousan	d gallons .	· · · · · · L		(19-26
	11911 74311	9	hundred	tons	disposed at s		1171 (27-33
7			uiousari	d cubic var	os		(34-41
٠.	is still in u	se (legitrent)	v in use:	2me lensen	te and whether in use; 3=nev	method	
	9=don't know)	se (1-current)	y in use;	Z-no longer	in use; s=nev	er usea;	
	J CON L MION		landfi l	1 mono indi	ustrial waste		1 21 (42)
		•	landfil	I, mono ind	dustrial waste	•••••	[3] (42)
			landfil	l. drammed i	waste	•••••	(43)
			landfi l	l. municina	l refuse co-di	snosed	물器
			pits/po	nds/lagoons			11 (46)
			deep we	ll injection	n		3 (47)
			land fa	ming	. 		131 (48)
			inciner	ation	• • • • • • • • • • • • • • • • • • • •		3 (49)
			treatme	nt (eg. neus	tralizing)		31 (50)
			reproce	ssing/recyc.	ling		(51)
			other (specify)			3 (52)
В.	Users of this	site (l=this	facility;	2=this faci:	lity and other	company	
	tacilities on	ly; 3=this com	pany and o	thers; 9=dom	n't know)	• • • • • • • • •	<u>[3]</u> (53)
	LICT MAGE A	T ADDALCETC O	C OTTED IO	OLAL ESCENA DE			
	LISI NAMES A	ND ADDRESSES O	F UTHER XN	OWN ORENS BE	ELOW		
	702		00015		_		
	Timet, Hend		89015	1			
	Flintbore	hemical Comp	any, Hen	derson, NV			
	Montrose C	Lime Company hemical Comp	, nender	derson MU	89015 ' 89015		
	City of Her	nderson 247	Water S	treet Han	derson, NV	89015	
	, ne.			,		37013	

MACH	В	-	Page	2

(IV NOT USE) (1-8)

Эограну Малез	Kerr-McGee	Corpor	n
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Facility Name: Kerr-McGee Chemical Corporation, Henderson Plant

Site Name: BMI Ponds

 Components (or characteristics) of process waste from this facility disposed at site: (1=present in waste; 2=not present in waste; 9=don't know)

FILL IN EVERY BLOCK SPACE

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Acid solutions, with pH<3[2] (10))
pickling liquor)
metal plating waste	١.
circuit etchings)
inorganic acid manufacture	í
organic acid manufacture	΄.
Base solutions, with pH>12	′
base solutions, with principle [2] (10)	,
caustic soda manufacture	,
nylon and similar polymer generation)
scrubber residual	1
Heavy metals & trace metals (bonded organically & inorganically)	ŀ
arsenic, selenium, antimony	i
mercury	í
iron, manganese, magnesium	
in and in any and in the state of the state	!
zinc, cadmium, copper, chromium (trivalent)	
chromium (hexavalent))
lead	1
Radioactive residues. >50 pico curies/liter	١
uranium residuals & residuals for UF6 recycling	ı
lathanide series elements and rare earth salts	
phosphate slag	
thorium	
[2] (32)	!
radium	!
other alpha, beta & gamma emitters	
Organics	ł
insecticides & intermediates	,
herbicides & intermediates	1
fungicides & intermediates[2] (37)	ı
rodenticides & intermediates	
halogenated aliphatics	
natogenated ariphatics [2] (39)	
halogenated aromatics	
acrylates & latex emulsions	
PCB/PBB's[2] (42)	
amides, amines, imides	
plastizers	
resins	ı
elastomers	
solvents polar (except water)	
carbontetrachloride	
trichloroethylene	
trichloroethylene	
other solvents nonpolar	
solvents halogenated aliphatic	
solvents halogenated aromatic	
oils and oil sludges	
esters and ethers	
alcohols	
ketones & aldehydes	
dioxins	
Inorganics	
morganics	
salts	
mercaptans	
Misc	
pharmaceutical wastes	
paints & pigments	
catalysts (ee vanadim platinum palladium)	
asbestos [2] (65) shock sensitive wastes (eg. nitrated toluenes) [2] (66)	
shock consistive wastes (or mitrated toluenes)	
air water reactive wastes (eg. P4, aluminum chloride)	
wastes with flash point below 100° F	
wastes with mash point below 100° r	

COMPILITE THIS FORM FOR EVERY SITE (INCLUDING THE LOCATION OF THIS FACILITY AS ONE SITE) USED FOR THE DISPOSAL OF PROCESS WASTES CENERATED BY THIS FACILITY SINCE 1950.

oany Name: ility Name:	Kerr-McGee Co Kerr-McGee Ch		<u> </u>	- 4	Handarcon	Dlant	
		lemical_	corporat	cion,	Hender Son	riant	
of Site:	Pla	ınt Site		_			
ress of Site:	P. O. Box 55	Lake	Mead Di	rive_	<u>-</u>		
	no. si	treet					
	Henderson, NV	,		89015			
			state		zip code		
	•		Ac Abo	110			
e of Owner (wi	hile used by fac	ility):	AS AUU				
	no. s	treet					
	city		state		zip code		
rent Owner (i	f different from	above):	-				
	no. s	treet					
-							
	city		state		zip code		
Omership at company owner Current stat IF Year first us year last us still in use Total amount use fens configurations.	rime of use (1= rship) 3=public us (1= closed; 2 CLOSED, specify used for process we for process was the form of process was the form of process was the form of process was the form of process was the form of process was the form of process was the form of process was the form of process was the form of process was the form of process was the form of process was the form of the process was the form of the process was the form of the process was the form of the process was the form of the process was the form of the process was the form of the process was the process w	company ownership = still i year clo waste from aste from thousan hundred thousan method(s)	ownership) 15.45 In use; 9 ised in this faction it facilid gallon I tons d cubic used at	p: Z=pr p: / Kwo =don't acility cility ity dis s yards	know) (enter "79"	19 19 19 1 19 1 19 1 19 1 1 1 1 1 1 1 1	1) (11) (2) (12) (13-14) (15-16) (19) (17-18) (19-26) (10) (27-33
9=don't know	is site (1=this only; 3=this com	landfii landfii landfii landfii pits/px deep w land fi incine treatm reproc other facility; pany and	11, mono 11, mixed 11, drumm 11, munic 11, munic 11, munic 11, inject 12, inject 13, inject 14, inject 15, inject 16, inj	indust: I indust: I indust: Ped was: Pe	rial waste trial waste te efuse co-di lizing) g y and other know)	sposed	(45) (46) (3) (47) (3) (48) (3) (49) (3) (50) (1) (51) (1) (52)
	location (1= Ownership at Company owne Ownership at Company owne Ownership at Year first us Still in use Total amount usc income yusi Specify type is still in 9=don't know	ress of Site: P. O. Box 55 no. si Henderson, Ny city e of Owner (while used by fact ress: no. si city rent Owner (if different from ress: no. s city Location (1= the property on Ownership at time of use (1= company ownership) 3=public Ourrent status (1= closed; 2 IF CLOSED, specify Year first used for process Year last used for process Year last used for process Year last used for process wast use fors chig if persible right justify respires Specify type(s) of disposal is still in use (1=currently 9=don't know) Users of this site (1=this facilities only; 3=this com	ress of Site: P. O. Box 55 Lake no. street Henderson, NV city e of Owner (while used by facility): ress: no. street City rent Owner (if different from above): ress: no. street City Location (1= the property on which fa Ownership at time of use (1= company company ownership) 3=public ownership Ownership at time of use (2= still in IF CLOSED, specify year clo Year first used for process waste from Year last used for process waste from Still in use) Total amount of process waste from Still in use Total year of the property on which fa Company ownership) Total amount of process waste from Still in use I gessible thousan Specify type(s) of disposal method(s) is still in use (1=currently in use; 9=don't know) Landfil Land	ress of Site: P. O. Box 55 Lake Mead D no. street Henderson, NV city state e of Owner (while used by facility): As Abo ress: no. street City state City state City state City state City state Location (1= the property on which facility i Ownership at time of use (1= company ownershi Company ownership) 3=public ownership) .f.=.00 Ourrent status (1= closed; 2= still in use; 9 IF CLOSED, specify year closed Year first used for process waste from this facil vice from colly of process waste from this facil use from colly of process waste from this facil use from colly of process waste from this facil use from colly of process waste from this facil use from colly of process waste from this facil use from colly of process waste from this facil use from colly of process waste from this facil use from colly of process waste from this facil use from colly of process waste from this facil use from colly of process waste from this facil use from colly of process waste from this facil use	ress of Site: P. O. Box 55 Lake Mead Drive no. street Henderson, NV 89015 city state e of Owner (while used by facility): As Above ress: no. street city state rent Owner (if different from above): ress: no. street city state Location (1= the property on which facility is locat Ownership at time of use (1= company ownership; 2=pr company ownership) 3=public ownership) %=.den't Kee Current status (1= closed; 2= still in use; 9=den't IF CLOSED, specify year closed Year first used for process waste from this facility Year last used for process waste from this facility Year last used for process waste from this facility Still in use) Total amount of process waste from this facility dis use from only if periodic thousand gallons right justify fits periodic thousand gallons thousand cubic yards Specify type(s) of disposal method(s) used at site a is still in use (1=currently in use; 2=no longer in 9=don't know) landfill, mono industr landfill, mixed indust	ress of Site: P. O. Box 55 Lake Mead Drive no. street Henderson, NV 89015 city state zip code e of Owner (while used by facility): As Above ress: no. street city state zip code rent Owner (if different from above): ress: no. street city state zip code c	ress of Site: P. O. Box 55 Lake Mead Drive no. street Henderson, NV 89015 city state zip code e of Owner (while used by facility): As Above ress: no. street city state zip code rent Owner (if different from above): - ress: no. street city state zip code Location (l= the property on which facility is located; 2= off-site). Ownership at time of use (l= company ownership; 2=private but not company ownership) 3=public ownership) 7= depity feet Current status (l= closed; 2= still in use; 9=don't know) IF CLOSED, specify year closed Year first used for process waste from this facility (enter "79" if still in use) Year last used for process waste from this facility (enter "79" if still in use) North of the property ownership and tons

Site Name: Plant Site

 Components (or characteristics) of process waste from this facility disposed at site: (1=present in waste; 2=not present in waste; 9=don't know)

FILL IN EVERY BLOCK SPACE

Acid solutions, with pH<3. pickling liquor metal plating waste		
pickling liquor	2]	(10)
metal plating waste	21	(11)
Circuit etchings	41	(12)
inorganic acid manufacture	41	(13)
organic acid manufacture	21	(14)
Base solutions, with pH>12	7	(15)
Caustic soda manufacture	41	(16)
caustic soda manufacture nylon and similar polymer generation scrubber residual	Ζ,	(17)
scribber recidual polymer generation	Σi	(18)
Heavy metals & trace metals (Assis)	21	(19)
Heavy metals & trace metals (bonded organically & inorganically)	г	(20)
arsenic, selenium, antimony mercury iron, manganese, magnesium	21	(21)
ivon managanga	2	(22)
iron, manganese, magnesium zinc, cadmium, copper, chromium (trivalent) chromium (hexavalent)	Ti i	(23)
Chromium (heavylant)	Zi ((24)
lead	Lı (25}
lead	zi (26)
Dranium residuale & residuale for the	21 ((27)
uranium residuals & residuals for UF ₆ recycling lathanide series elements and rare earth salts phosphate slag	ži (28)
phosphate slag	ŭ (29)
phosphate slag	ij (30)
thorium	ī (31)
radium	<u>.</u> (32)
Organics	u (33)
inserticides & intermediates	1 (34)
herbicides & intermediates	y (35)
herbicides & intermediates) (36)
rodenticides & intermediates	1 (37)
halogenated aliphatics	J (38)
halogenated aromatics L2 acrylates & later emulsions L2	ı Ç	39)
acrylates & latex emilsions	ľ	40)
amides, amines, imides	ij	12)
plastizers	! !!	13)
resins	15	14)
elastomers	15	13)
solvents polar (except water)	12	10)
trichloroethylene		0
solvents halogenated aliphatic	75	וו
solvents halogenated aromatic	75	2)
oils and oil sludges	75	3)
esters and ethers	(2	3) 4)
alcohols	75	3
ketones & aldehydes	65	ล์
dioxins [2] Inorganics [2]	čš	ว ัก
salts	(5	οí
mercaptans	(60	ກ່
pharmaceutical wastes	(6:	2)
ratalysts for amodition 121	(6:	3)
paints & pigments	(64	1)
asbestos	(65	5)
air water reactive wastes (eg. P4, aluminum chloride)	(66)
wastes with flash point below 100° F	(67)
praire below 100 F	(68	()

FORM C: HAULER INFORMATION

(DO NOT USE) (1-5)

PROVIDE A COMPLETE LIST OF ALL FIRMS AND INDEPENDENT CONTRACTORS, INCLUDING THE COMPANY AND ITS AFFILIATES AND SUBSIDIARIES, USED TO REMAKE PROCESS WASTES FROM THIS FACILITY SINCE 1950.

Company Name: Kerr-McGee Corporation

Facility Name: Kerr-McGee Chemical Corporation, Henderson Plant

Name of Firm or Contractor Address (If Known) Years Used

Kerr-McGee Henderson, NV 30

March 22, 1979

Mr. W. Marvin Tebeau, Environmental Scientist State of Nevada Department of Conservation and Natural Resources Division of Environmental Protection Capitol Complex 89710 Carson City, NV

Reference: NPDES Permit No. NV0000078

Dear Mr. Tebeau:

In accordance with your letter of February 23, 1979, the following are attached:

- A listing of our ponds with the questions in Item II of the request answered. The answers are designated by the same letter as the subquestions under Item II.
- A drawing of the BMI Complex with the ponds and the pipelines to them superimposed in color.

We do not have any monitoring wells.

I believe this completes the requirements of the order. If you require any other information, please contact me.

Sincerely,

C. B. Armstrong

Plant Manager

CBA: jc

Attachments

WBHayes/RJVreeland-OKC

TLHurst-OKC RFWohletz

DATA ON LINED PONDS

POND C-1

- a. Liner PVC bottom, reinforced butyl side
- b. Surface area 69,000 ft.²
- c. Volume 415,000 ft.3
- d. Process waste and average volume:

Boiler house wastes - 4,000 gallons/day

Main cooling tower waste) - 15,000 gallons/day Cooling tower filter wash)

Cleaning liquor waste - 1,500 gallons/day

e. Impoundment currently in use.

POND AP-1

- a. Liner PVC bottom, CPE side
- b. Surface area 14,000 ft.²
- c. Volume $58,000 \text{ ft.}^3$
- d. Sodium perchlorate purification and ammonium perchlorate process purification filter wash liquor; total recycle; no addition other than that required to maintain volume.
- e. Impoundment currently in use.

POND AP-2

Same as Pond AP-1

POND AP-3

- a. Liner PVC
- b. Surface area 2,000 ft.²
- c. Volume $6,500 \text{ ft.}^3$
- d. Pump basin for AP-1 and AP-2. No flow.
- e. Impoundment currently in use.

POND AP-4

- a. Liner PVC bottom, CPE side
- b. Surface area 20,000 ft.²
- c. Volume 115,000 ft.³
- d. Ammonium perchlorate cooling tower waste; emergency only. Salt crystallizer washout 500 gallons/day.
- e. Impoundment currently in use.

DATA ON LINED PONDS Page 2 March 19, 1979

POND P-1

- a. Liner PVC bottom, CPE side
- b. Surface area 26,000 ft.²
- c. Volume 125,000 ft.³
- d. No process waste at this time.
- e. Impoundment abandoned July, 1975.

POND P-2

- a. Liner reinforced butyl rubber
- b. Surface area 12,000 ft.²
- c. Volume $47,000 \text{ ft.}^3$
- d. Process waste: sodium chlorate solution; this pond for emergency use only, and all solution is recycled. Caustic scrubber solution from ammonium perchlorate plant - 500 gallons/day.
- e. Impoundment currently in use.

POND P-3

- a. Liner reinforced butyl rubber
- b. Surface area 12,000 ft.²
- c. Volume $47,000 \text{ ft.}^3$
- d. Process waste: sodium chlorate solution; this pond for emergency use only, and all solution is recycled. No regular flows to pond.
- e. Impoundment currently in use.

POND S-1

- a. Liner PVC bottom, CPE side
- b. Surface area 47,500 ft.²
- c. Volume $270,000 \text{ ft.}^3$
- d. Process waste: potassium perchlorate process tailings -5,000 gallons/day; boron leach liquor - 1,000 gallons/day.
- e. Impoundment currently in use.



STATE OF NEVADA

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES DIVISION OF ENVIRONMENTAL PROTECTION

CAPITOL COMPLEX CARSON CITY, NEVADA 89710

TELEPHONE (702) 885-4670

x/c KJU/NBH

RFW c136-

February 23, 1979

Mr. C. B. Armstrong Kerr McGee Chemical Company P.O. Box 55 Henderson, NV 89015

RE: Kerr McGee Chemical Company NPDES Permit No. NV000078

Dear Mr. Armstrong:

The enclosed Order is issued by the Administrator of the Division of Environmental Protection pursuant to Nevada Revised Statutes (NRS) Chapter 445.214 Section 1, 2, 3, 7, and 12 and in accordance with NRS 445.307, NRS 445.317 subsection 1(a) and NRS 445.324.

The Order is requesting that you provide certain information on the lined and unlined impoundments on your property.

Your cooperation with the State in providing this information is appreciated. Should you have any questions, please call at 885-4670.

Sincerely,

W. Marvin Tebeau

Environmental Scientist

gc

Greg Fischer E-5-2

EPA, Region IX

IN THE MATTER OF)
Kerr McGee Chemical Company)
NV000078)

ORDER

The following Order is issued this date pursuant to the powers and duties vested in the Director by Nevada Revised Statutes (NRS) Chapter 445.214 subsection 1, 2, 3, 7 and 12 and in accordance with NRS 445.307 and NRS 445.317, subsection 1(a) and NRS 445.324.

In the recent past the Division of Environmental Protection has sampled discharges of process waste at the BMI siphon prior to entering the upper BMI ponds and in the influent domestic waste at the Henderson treatment plant.

In order for the Division of Environmental Protection to develop and administer a compreshensive plan and program for preventing, reducing or eliminating these discharges and their subsequent impact on the ground water and surface water of the State, your cooperation is needed in providing certain information on the lined and unlined ponds and the process waste they recieve.

On the basis of the findings listed above the Administrator of the Division of Environmental Protection requires Kerr McGee Chemical Company to provide the following information by March 26, 1979.

LINED AND UNLINED IMPOUNDMENT DATA

- I. Depict on a USGS map or provide a drawing of:
 - a. Impoundments in relation to the plant
 - b. Piping schematic of the process waste from the production areas to the impoundment
 - c. Any monitoring well on your property

- II. Concerning each impoundment provide information on:
 - a. Type of liner used, if clay give thickness
 - b. Surface area
 - c. Volume
 - d. Name of process waste and daily average volume being stored or disposed of
 - e. Is the impoundment presently in use, if not last year of operation and age

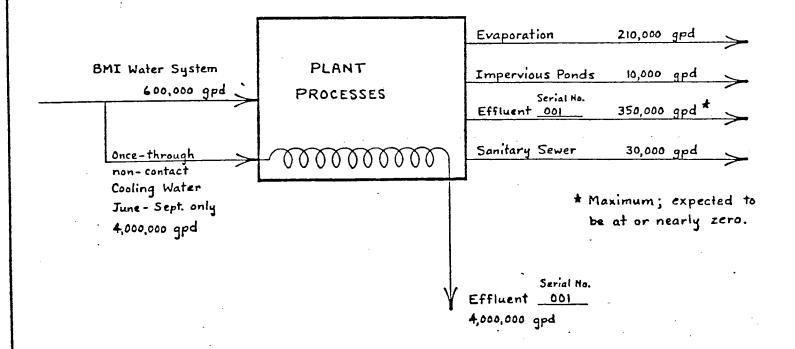
III. Concerning each monitoring well:

- a. Depth to ground water if known
- b. Frequency of sampling and copy of any analysis of the ground water
- c. Copy of any well logs or test hole logs taken in the immediate area if available.

DATED 7-27-79

E.G. Gregory, Administrator

Division of Environmental Protection



	KERR-McC	GEE CHEMICAL CORP. HENDERSON, NEVADA	
ENGR. K.D. Heine	JOB NO.		DRWG. NO.
SCALE	A.F.E.	WATER FLOW SCHEMATIC	0.1 of 1
DATE 8-12-74	APP.		

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

FOF	RAG	ENC	Y U	SE

SECTION IL BASIC DISCHARGE DESCRIPTION

Complete this section for each discharge indicated in Section I, Item 9, that is to surface waters. This includes discharges to municipal sewerage systems in which the wastewater does not go through a treatment works prior to being discharged to surface waters. Discharges to wells must be described where there are also discharges to surface waters from this facility. SEPARATE DESCRIPTIONS OF EACH DISCHARGE ARE REQUIRED EVEN IF SEVERAL DISCHARGES ORIGINATE IN THE SAME FACILITY. All values for an existing discharge should be representative of the twelve previous months of operation. If this is a proposed discharge, values should reflect best engineering estimates.

ADDITIONAL INSTRUCTIONS FOR SELECTED ITEMS APPEAR IN SEPARATE INSTRUCTION BOOKLET AS INDICATED. REFER TO BOOKLET BEFORE FILLING OUT THESE ITEMS.

		12	
	(see instructions)		
	b. Discharge Name	Unnamed drainage ditch to BMI ponds	_
	Give name of discharge, if any.		
	(see instructions)		
	c. Previous Discharge Serial No. If previous permit application	NA NA	
	was made for this discharge (see	is And	
	Item 4, Section I), provide previous discharge serial number.		
	Ous discharge sonar name		
2.	Discharge Operating Dates		
	a. Discharge Began Date If the		
	discharge described below is in operation, give the date (within	46 -	
	best estimate) the discharge	YR MO	
	began.		
	b. Discharge to Begin Date If the discharge has never occurred but	NA NA	
	is planned for some future date,	02b	
	give the date (within best esti- mate) the discharge will begin.	TR WO	
	mately the disensing time beginning	•	
	c. Discharge to End Date If dis-		
	charge is scheduled to be discon- tinued within the next 5 years,	77 12 (For once through noncontact cooling water)	
	give the date (within best esti-	YR MO	
	mate) the discharge will end.	75 12 (For process effluent)	
_	To Board Augilable		
3.	Engineering Report Available Check if an engineering report is		
	available to reviewing agency upon	03	
•	request. (see instructions)		
4.	Discharge Location Name the		
•	political boundaries within which	Agency Us	е —
	the point of discharge is located.	Nevada	
	State	042 204d	
		Clark 204e	_
	County	can all the control of the control o	e j
	(If applicable) City or Town	204c NA Z04f	
5.	Discharge Point Description Discharge is into (check one):		
	(see instructions)		
	Stream (includes ditches, arroyos,		
	and other intermittent watercourses)	ÇSTR	
	Lake	□LKE	
		□oce `	
	Ocean		
	Municipal Sanitary Wastewater	∏мтs	
	Transport System	• • • • • • • • • • • • • • • • • • •	
	Municipal Combined Sanitary and	□mcs	
	Storm Transport System		
		- 77 4	

1. Discharge Serial No. and Name

	:							FOR AGENCY U	SE
	Municipal Storm Water Transport		_						
	System		□ STS						
	Weil (Injection)		MEL						
	Other		ХХ отн			_			
	If 'other' is checked, specify	205b	Combin	ation	evapor	<u>ation ar</u>	<u>id percolati</u>	ion ponas	
6.	Discharge Point — Lat/Long Give the precise location of the point of discharge to the nearest second.		26	O.	3 _{MIN}	32 _{sec}			
	Latitude	2062	36_DE						
	Longitude	2066	114 DE	EG	8 _{MIN}	34 _{sec}			
7.	Discharge Receiving Water Name Name the waterway at the point of discharge (see instructions)	2072	BMI por	nds ne	ar Las	Vegas V	alley drain	age to Lake I	<u>1ead</u>
fall	he discharge is through an out- that extends beyond the shore- s or is below the mean low ter line, complete Item 8.	2076	For Ag	ency Use	207		Agency Use 303e		
8.	Offshore Discharge	2082	NA	feet					
	a. Discharge Distance from Shore						. •		
	b. Discharge Depth Below Water Surface	2085	NA_	feet	~				
9.	Discharge Type and Occurrence								
	 Type of Discharge Check whether the discharge is con- 	2092	₹ \$(con) (Continuou	ıs			p	
	tinuous or intermittent. (see instructions)		[(int)	ntermitter	it .				
	b. Discharge Occurrence Days per Week Enter the average num- ber of days per week (during periods of discharge) this dis- charge occurs.	209b	Z_days p		:				
	c. Discharge Occurrence —Months If this discharge normally	209c	□JAN-	[]FEB	□MAR	□APR	The summer	r use of nonc	ontact:
	operates (either intermittently, or continuously) on less than		□MAY	וווען	חחר	∏AUG	cooling w	åter will be eptember at a	trom June rate of
	a year-around basis (excluding shutdowns for routine mainte-		□SEP	□ост	□nov	DDEC	4,000,000	gallons per	day.
	nance), check the months dur- ing the year when the discharge is operating. (see instructions)			,					
1	Complete Items 10 and 11 if "inter- nittent" is checked in Item 9.a. Otherwise, proceed to Item 12.				• .				
1	10. Intermittent Discharge Quantity	210	N	Α	housand ga	llons per disc	harge occurrence.		
	State the average volume per dis- charge occurrence in thousands of gallons.						•		
	11. Intermittent Discharge Duration and Frequency			:		1	:		
	 a. Intermittent Discharge Duration Per Day State the average number of hours per day the discharge is operating. 	2111	NA no	ours per di	ay				
	 b. Intermittent Discharge Frequency State the average number of discharge occur- rences per day during days when discharging. 	211	NA_di	scharge o	currences ç	oer day			

12. Maximum Flow Period Give the time period in which the maximum flow of this discharge occurs.

11

From June to Sept.

001	

FOR AGENCY USE										
\prod										

 Activity Description Give a narrative description of activity producing this discharge-(see Instructions)

213a	Production of various chlorates and perchlorates by
2132	electrolysis and subsequent double decomposition.
•	Electrolytic production of battery active manganese
	dioxide.
	•
	•
	<u> </u>

14. Activity Causing Discharge For each SIC Code which describes the activity causing this discharge, supply the type and maximum amount of either the raw material consumed (Item 14a) or the product produced (Item 14b) in the units specified in Table I of the Instruction Bookiet. For SIC Codes not listed in Table I, use raw material or production units normally used for measuring production.(see instructions)

a. Raw Materials

	SIC Code	Name	Maximum Amount/Day	-	Shared Discharges (Serial Number)
2142	(I) 4 2 2 2 5 5 5 5 5 6 5 5 6 6 6 6 6 6 6 6 6	(2)	(3)	: (4) \@immed	an elegações (5) de elegações de elegações de
-9090000000000	2819	NaCl	52	K-1	NA
•	2819	NH3	9	K-1	NA NA
-	2819	31% HC1	33	K-1	NA NA
-	2819	MnO2 Ore	55	K-1	NA
•					

b. Products			Maximum	Unit	Shared Discharges (Serial Number)
2145	SIC Code	Name (2)	Amount/Day (3)	(4)	(5)
	NA NA				
. 100				•	
					1

FOR AGENCY USE										
L				Ш	لـا	لسا		Ш		

	_	
15	Waste	Abatement

 Waste Abatement Practices
 Describe the waste abatement practices used on this discharge with a brief narrative. (see Instructions)

b. Waste Abatement Codes
Using the codes listed in Table
II of the Instruction Booklet,
describe the waste abatement
processes for this discharge in
the order in which they occur
if possible.

Narr	ative: The following practices are routinely followed:
1.	Washing of filter cakes to remove soluble material
2.	Ponding of effluents for evaporation
3.	Use of recirculated cooling water.
4.	Use of mechanical seal pumps.
5.	Reuse of byproducts as raw materials
(1)	ESEGRE (2) EMERGE (3) ECOUNT
(4)	EPUMPS DREACT DSTUPD
(7)	DECOME DOMING DUCTOR
	RECYCL (11) OMONIT (12)
•	. (14), (15),
	, (17), (18),
(19)	. (21)
122	

001

FOR AGENCY USE									

16. Wastewater Characteristics

Check the box beside each constituent which is present in the effluent (discharge water). This determination is to be based on actual analysis or best estimate.(see instructions)

Parameter 216	Present	Parameter 216	Present
Color 00080	х	Copper 01042	х
Ammonia 00610		Iron 01045	
Organic nitrogen 00605		Lead 01051	Х
Nitrate 00620		Magnesium 00927	x
Nitrite 00615		Manganese 01055	Х
Phosphorus . 00665	X	Mercury 71900	
Sulfate 00945	X	Molybdenum 01062	x
Sulfide 00745	Х	Nickel 01067	
Sulfite 00740		Selenium 01147	
Bromide 71870		Silver 01077	
Chloride 00940	Х	Potassium 00937	,
Cyanide 00720		Sodium	
Fluoride 00951		Thallium 01059	
Aluminum 01105	X	Titanium 01152	
Antimony 01097		Tin 01102	
Arsenic 01002		Zinc 01092	
Beryllium 01012		Algicides* 74051	
Barium 01007	÷	Chlorinated organic compounds* 74052	
Boron 01022		Pesticides* 74053	
Cadmium 01027	X	Oil and grease 00550	
Calcium 00916	х	Phenols	
Cobalt 01037		Surfactants 38260	
Chromium 01034	. x	Chlorine 50060	
Fecal coliform bacteria 74055		Radioactivity* 74050	

^{*}Specify substances, compounds and/or elements in Item 26.

Pesticides (insecticides, fungicides, and rodenticides) must be reported in terms of the acceptable common names specified in Acceptable Common Names and Chemical Names for the Ingredient Statement on Pesticide Labels, 2nd Edition, Environmental Protection Agency, Washington, D.C. 20250, June 1972, as required by Subsection 162.7(b) of the Regulations for the Enforcement of the Federal Insecticide, Fungicide, and Rodenticide Act.

DISCHARGE SERIAL NUMBER

001

FOR AGENCY USE									

17. Description of Intake and Discharge

For each of the parameters listed below, enter in the appropriate box the value or code letter answer called for (see instructions)

In addition, enter the parameter name and code and all required values for any of the following parameters if they were checked in Item 16; ammonia, cyanide, aluminum, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, phenois, oil and grease, and chlorine (residual).

	Influ	ent			Effluent			
Parameter and Code	Untreated Intake Water (Daily Average)	In-Plant Treated 3 Intake Water (Daily Average)	ය Daily Average	Minimum Value Observed or Expected During Discharge Activity	Maximum Value Observed or Expected During Discharge Activity	Frequency of Analysis	Number of Analyses	a Sample Type
Flow* Gallons per day 00056	600,000	NA	350,000	0	4,350,000	1/1	365	24
pH Units 00400	8	NA	\times	6	10	1/1	365	24
Temperature (winter) F 74028	55	NA ·	65	60	70	None	NA	NA
Temperature (summer) F 74027	65	NA	75	70	80	None	NA	NA
Biochemical Oxygen Demand (BOD 5-day) mg/l 00310	A	NA	А	А	A	NA	NA	NA
Chemical Oxygen Demand (COD) mg/l 00340	24	NA	22	15	30	None	NA	NA
Total Suspended (nonfilterable) Solids mg/l 00530	4	NA	150	100	300	None	NA	NA
Specific Conductance micromhos/cm at 25° C C^995				NDET	ERMIN	E D		
Settleable Matter (residue) ml/1 00545				NDET	ERMIN	E D	-	

^{*}Other discharges sharing intake flow (serial numbers) (see instructions)

DISCHARGE SERIAL NUMBER

FOR AGENCY USE										
\Box										
\Box				Ш		لــا				

17. (Cont'd.)

	Γ	Influ	ent	Effluent							
Parameter and Code		Untreated Intake Water (Daily Average)	In-Plant Treated Contact Water (Daily Average)	(C) Daily Average	Minimum Value * Observed or Expected During Discharge Activity	** Maximum Value Observed or Expected During Discharge Activity	Frequency of Analysis	S Number of Analyses	® Sample Type		
Aluminum u g/l	01105	25	NA	60	25	100	None	NA	NA		
Cadmium u g/l	01027	12	NA	60	12	100	None	NA	NA		
Chromium u g/l	01034	8	NA	60	8 .	6,000	None	NA	NA		
	01042	100	NA	150	100	200	None	NA	NA		
Copper u g/l	01042	200	NA	200	150	250	None	NA_	NA		
Lead u g/l Zinc u g/l	01092	12,000	NA	24,000	12,000	36,000	None	NA	NA		
			<u> </u>			<u></u>	<u> </u>		<u> </u>		

- * With cooling water only.
 ** With process water only.

		1.200						•
	Plant Controls Check if the fol- lowing plant controls are available for this discharge.	218						
	Alternate power source for major pumping facility.		☐ APS	NA				
	Alarm or emergency procedure for power or equipment failure		☐ ALM	٠				
	Complete item 19 if discharge is from cooling and/or steam water generation and water treatment additives are used.						·	•
19.	Water Treatment Additives If the discharge is treated with any conditioner, inhibitor, or algicide, answer the following:			NA				
	a. Name of Material(s)	2192						
	•							-
	 Name and address of manufacturer 	2196				<u> </u>		
	 Quantity (pounds added per million gallons of water treated). 	2190				•		

I	FOR AGENCY USE										

	. Chemical composition of these	2194	NA							
(additives (see instructions).									
	1									
(e.g.,	olete items 20-25 if there is a thermal dis associated with a steam and/or power go , steel mill, petroleum refinery, or any o facturing process) and the total discharg illion gallons per day or more. (see inst	eneration ther se flow i	s							
1	Thermal Discharge Source Check the appropriate item(s) indicating the source of the discharge. (see instructions)	220								
1	Boiler Blowdown		BLBD							
	Boiler Chemical Cleaning		BCCL							
	Ash Pond Overflow		☐ APOF							
	Boiler Water Treatment — Evapora- tor Blowdown		□ EPBD	NA						
	Oll or Coal Fired Plants — Effluent from Air Pollution Control Devices		OCFP							
	Condense Cooling Water		COND					•		•
	Cooling Tower Blowdown	est en e	□ство		-					• .
	Manufacturing Process		MFPR							
	Other .		OTHR				•			•
	Discharge/Receiving Water Temper- ature Difference									
	Give the maximum temperature difference between the discharge and receiving waters for summer and winter operating conditions. (see instructions)	2214	°F.						,	
	Winter	221b	NA °F.							
22.	Discharge Temperature, Rate of Change Per Hour	222	NA o _{F./}	hour						
	Give the maximum possible rate of temperature change per hour of discharge under operating conditions. (see instructions)		•					•		
23.	Water Temperature, Percentile Report (Frequency of Occurrence)									
	In the table below, enter the temperature which is exceeded 10% of the year, 5% of the year, 1% of the year and not at all (maximum yearly temperature). (see instructions)									
	Frequency of occurrence		10%	5%	1%	Maxin	num	•		
	Intake Water Temperature	2232	° _F	o _F	o _F		٥F	NA		
	(Subject to natural changes)		0-	0-	o _F		o _F			
	b. Discharge Water Temperature	223b	°F	o _F		<u> </u>				
24.	Water Intake Velocity (see instructions)	224	feet	/sec. NA				ŧ		
25.	Retention Time Give the length of time, in minutes, from start of water temperature rise to discharge of cooling water. (see instructions)	225	min	utes						

PISCHARGE SETHAL NUMBER

001

FR	BR /	VGF	394	v USFI	
			a t i	Ιt	

El. Additional Information

6	ltem	ไพ่ใช/การให้กิดก
		NA
		
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		П			

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

SECTION III. WASTE ABATEMENT REQUIREMENTS & IMPLEMENTATION (CONSTRUCTION) SCHEDULE

This section requires information on any uncompleted implementation schedule which may have been imposed for construction of waste abatement facilities. Such requirements and implementation schedules may have been established by local, State, or Federal agencies or by court action. In addition to completing the following items, a copy of an official implementation schedule should be attached to this application. If YOU ARE SUBJECT TO SEVERAL DIFFERENT IMPLEMENTATION SCHEDULES, EITHER BECAUSE OF DIFFERENT LEVELS OF AUTHORITY IMPOSING DIFFERENT SCHEDULES (Item 1a.) AND/OR STAGED CONSTRUCTION OF SEPARATE OPERATION UNITS (Item 1c.), SUBMIT A SEPARATE SECTION III FOR EACH ONE.

Improvements	300		SCHED, NO.	
Discharge Serial Number Affected List the discharge serial numbers, assigned in	3012	001	<u>L </u>	
Section II, that are covered by this implementation schedule.		,		
b. Authority Imposing Requirements Check the appropriate item Indicating the authority for implementation schedule. If the identical implementation schedule has been ordered by more than one authority, check the appropriate items. (see instructions)				
Locally developed plan	3015	□Loc		
Areawide Plan		☐ARE	•	
Basic Plan		□BAS		
State approved implementa- tion schedule		□sqs		,
Federal approved water quality standards implementa- tion plan.		Äwqs		•
Federal enforcement proced- ure or action		□ENF		
State court order		□CRT □FED		
Federal court order		M-ED		
c. Facility Requirement. Specify the 3-character code of those listed below that best describes in general terms the require-		3-character (general)		•
ment of the implementation schedule and the applicable six- character abatement code(s)	3016	ELI		
from Table II of the Instruction booklet. If more than one schedule applies to the facility	3014	6-character (specific)		
because of a staged construction schedule, state the stage of con- struction being described here		(see Table II) DSTOPD		
with the appropriate general action code. Submit a separate Section III for each stage of construction planned.				

Nava Saallibu	NEW
New Facility Modification (no increase in capacity or treatment)	мог
Increase in Capacity	INC
Increase in Treatment Level	INT
Both increase in Treatment Level and Capacity	ICT
Process Change	PRO
Elimination of Discharge	ELI

F	OR	AGE	NC	Υl	JS	E.

2. Implementation Schedule and 3. Actual Completion Dates

Provide dates imposed by schedule and any actual dates of completion for implementation steps listed below. Indicate dates as accurately as possible. (see instructions)

- a. Preliminary plan complete
 b. Final plan submission
 c. Final plan complete
 d. Financing complete & contract awarded
- . Site acquired
 - f. Begin action (e.g., construction)
 - g. End action (e.g., construction)
 - h. Discharge Began
 - L Operational level attained

2	Schedule	ryr./Mo.	/Day
2.	Schedule	(1 L-/ IVI U.	,00,

3024	6	, 23	<u>, 72</u>
302b	6	23	, 72
302c	8	,15	, 74
302d		NA	/
302+		, NA	/
302f	10	,1 :	, 73
3029	12	,31	<u>, 74</u>
302h		NA	/
3021	1	,31	, 75
	1	_,	

303a	5 , 26 , 72
3035	5,26,72
303c	9,1,74
30 3d	,NA,
30 3a	,NA/
303f	10 , 1 , 73
3039	12 ,31 , 74
303h	,NA ,
303î	12 ,31 ,75
@@.J003034	

KERR MCGLE BUILDING . OKLAHOMA CHY, OKLAHOMA 75102

October 5, 1971

District Engineer
Department of the Army
Los Angeles District, Corps of Engineers
P. O. Box 2711
Los Angeles, California 90053

Re: Discharge Permit Application NV 075-0YQ-2-000254 Discharge Serial No. 001

Dear Sir;

Forwarded herewith is part B of the above captioned water discharge permit application covering the Kerr-McGee Chemical Corp. facility at Henderson, Nevada, together with a certification statement.

Data are not yet complete for some of the required parameters. These will be submitted as soon as they are available.

Please contact me for permit application coordination and any additional information that you may need.

Very truly yours,

7214

T. L. Hurst Director of Environmental Services

TLH:jl Enclosures 2

bcc: C. B. Armstrong w/a - Henderson

M. C. Locke w/a

Permit No.

NV0000078

Name of permittee

Kerr McGee Chemical

Corporation

Effective date

AUG 2 6 1973

Expiration date

January 31, 1975

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

DISCHARGE PERMIT

In reference to application number: 075-0YQ-2-000254 for a permit authorizing a discharge in compliance with the provisions of the Act of Congress enacted October 18, 1972, (86 Stat. 816) entitled the Federal Water Pollution Control Act Amendments of 1972 (hereinafter referred to as "the Act"), Kerr McGee Chemical Corporation is authorized by the Environmental Protection Agency, Region IX, to discharge

from: Henderson, Nevada plant, Basic Management Incorporated Complex, Henderson, Nevada,

to the waters of the United States at: Las Vegas Wash, approximately five miles from its confluence with Las Vegas Bay,

in accordance with the following general and special conditions:

General Conditions

- I. All discharges authorized herein shall be consistent with the terms and conditions of this permit; facility expansions, production increases, or process modifications which result in new or increased discharges of pollutants must be reported by submission of a new NPDES application at least 180 days prior to such changes or modifications or, if such new or increased discharge does not violate the effluent limitations specified in this permit, by notification of the issuing authority of this permit at least 30 days prior to such new or increased discharges of pollutants; the discharge of any pollutant more frequently than or at a level in excess of that identified and authorized by this permit shall constitute a violation of the terms and conditions of this permit.
- II. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
 - a. Violation of any terms or conditions of this permit;
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- III. Notwithstanding (II) above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act, or amendments thereto, for a toxic pollutant which is present in the discharge authorized herein and such standard or prohibition is more stringent than any limitation upon such pollutant in this permit, the issuing authority of this permit shall revise or modify this permit in accordance with the toxic effluent standard or prohibition and so notify the permittee.
- IV. The permittee shall allow the Director of the State water pollution control agency, the Regional Administrator, and/or their authorized representatives, upon presentation of credentials:

a. To enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit;

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- b. To have access to at reasonable times and copy any records required to be kept under the terms and conditions of this permit;
- c. To inspect at reasonable times any monitoring equipment or monitoring method required in this permit; or,
- d. To sample at reasonable times any discharge of pollutants.
- V. The discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste into waters of the United States is prohibited.
- VI. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the permittee, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Regional Administrator.
- VII. The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.
- VIII. The issuance of the permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.
- IX. This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters.
- X. The specific effluent limitations and other pollution controls applicable to the discharge permitted herein are set forth below in the Special Conditions. Also set forth below are self-monitoring and reporting requirements. Unless otherwise specified, the permittee shall submit duplicate original copies of

all reports to the head of the State water pollution control agency and the Regional Administrator. All such reports shall be available for public inspection at the offices of the head of the State water pollution control agency and the Regional Administrator. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act.

Special Conditions

(Special Conditions are specified on the following pages.)

Special Conditions

Kerr McGee Chemical Corporation

1. Effluent Limits.

a. General

Except as specified in 1b below, the permittee is authorized to discharge to Las Vegas Wash a final effluent which shall not exceed the average daily and maximum daily values as specified on the application dated, June 11, 1971, including any modification thereto, including but not limited to any modifications as recorded in the transcript of the public meeting held on May 17, 1973, at Las Vegas, Nevada, for the permit.

b. Specific

(1) After the effective date of this permit and until December 31, 1974, the permittee is authorized to discharge to Las Vegas Wash, an effluent whose characteristics shall not exceed at any time the following limits:

6-2-

Discharge Serial Number 001

	30-Day Pollu Dischar	tant	Maximum Pollu Dischar	Maximum Concen- tration	
Constituent	(kg/day)	(lbs/day)	(kg/day)	(lbs/day)	(mg/l)
Total Dissolved Solids	8,600	19,000	23,000	51,000	5,600
Chlorides	2,700	6,000	9,100	20,000	4,000

⁽²⁾ All discharge of pollutants shall be eliminated by December 31, 1974.

- 2. Implementation Schedule.
 - a. The Schedule

3. Monitoring and Reporting.

A sampling station shall be established for each point of discharge and shall be located where representative samples of effluent can be obtained prior to discharge and where the effluent can be observed.

The permittee shall monitor and record the quality and quantity of each discharge according to the following schedule and other provisions:

a. Monitoring Schedule

Discharge Serial Number	Constituent	Minimum Frequency of Analysis	Sample Type	
001 .	Flow	Once Every Two Weeks	Discrete	
001	Total Dissolved Solids	Once Every Two Weeks	Composite	
001	Chlorides	Once Every Two Weeks	Composite	

b. Quality Control

The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at sufficiently frequent intervals to ensure accuracy of measurements or shall insure that both activities will be conducted.

Samples shall be representative of the volume and quality of effluent discharged over the sampling and reporting period.

All samples are to be taken during normal operating hours.

c. Recording

The permittee shall record for all samples, the date and time of sampling, the sample method used, the date analyses were performed, the identity of the analysts, and the results of all required analyses and measurements.

- (1) All sampling and analysis records mentioned in the preceding paragraph and all original strip-chart recordings from any continuous monitoring instrumentation together with any calibration and maintenance records shall be retained for a minimum of three years. This period will be extended during the course of any unresolved litigation, or when so requested by the Regional Administrator.
- (2) The permittee shall identify and record the effluent sampling point used for each discharge outfall.
- (3) The permittee shall provide the above records and shall demonstrate the accuracy of the flow measuring devices upon request of the Regional Administrator.

d. Sampling and Analysis

The analytical and sampling methods used, must conform to any one of the following reference methods (latest edition) and to any guidelines establishing test procedures for the analysis of pollutants promulgated by the Administrator of the Environmental Protection Agency pursuant to Section 304(g) of the Act. However, different but equivalent methods are allowable if they receive the prior, written approval of the Regional Administrator.

- (1) Standard Methods for the Examination of Water and Wastewaters, 13th Edition, 1971, American Public Health Association, New York, New York 10019
- (2) A.S.T.M. Standards, Part 23, Water; Atmospheric Analysis, 1970, American Society for Testing and Materials, Philadelphia, Pennsylvania 19103
- (3) Methods for Chemical Analysis of Water and Wastes, April 1971, Environmental Protection Agency Water Quality Office, Analytical Quality Control Laboratory, 1014 Broadway, Cincinnati, Ohio 45202

e. Reporting

The results of the above monitoring requirements shall be reported on the Discharge Monitoring Report Form in the units specified. The permittee shall include in this report any previously approved non-standard methods used. Permanent elimination of a discharge should be brought to the attention of the Regional Administrator within 15 days by a special, written notification. A written report should be submitted if there have been any modifications in the waste collection, treatment, and

disposal facilities not provided for in this permit; changes in operational procedures; or other significant activities which alter the nature and frequency of the discharges or otherwise concern the conditions of this permit.

All reports shall be signed by the principal executive officer or corporate official in a corporation, of at least the level of vice president, or by his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the application originates; or a general partner or the proprietor in the case of a partnership or sole proprietorship, respectively.

f. Other Provisions

(1) Soil Moisture Monitoring

The permittee shall, by December 31, 1973, submit to the Regional Administrator a plan for monitoring soil moisture and water quality of soil moisture beneath each impermeable pond or an alternative plan which would demonstrate the continuing effectiveness of measures taken to prevent the percolation of waste water from each pond into the underlying soil. The plan shall include:

- (a) description of equipment and installation of the equipment required for monitoring;
 - (b) ocation of sampling sites; and may include
- (c) analyses of soil moisture extracts for total dissolved solids and chlorides.

The permittee shall implement the plan upon approval of the Regional Administrator including in such implementation any additions or modifications which the Regional Administrator may make in approving the plan.

4. Oil Discharges.

There shall be no discharge of harmful quantities of oil, as defined pursuant to 40 CFR 110, including (1) any amendments or revisions made subsequent hereto, or (2) any more restrictive limitations which may be imposed otherwise by law or regulation. The authorization of this permit does not preclude the institution of any legal action, nor relieve the permittee

from any liabilities, penalties or responsibilities established by Section 311 of the Act, or amendments thereto, or by any superseding Federal or State legislation.

Other Materials.

Other materials ordinarily produced or used in the operation of this facility which have been specifically identified in the application for the permit dated June 11, 1971, including any modification thereto, may be discharged at the average and maximum frequencies and average and maximum levels noted in the application, provided:

a. they are not

- (1) designated as hazardous under provisions of Section 311 of the Act, or amendments thereto, or
- (2) known to be hazardous or toxic by the permittee; except that such materials may be discharged in certain limited amounts with the written approval of, and under special conditions established by, the Administrator or his designated representative, if the substances will not pose any imminent hazard to public health or safety;
- b. the discharge of such materials will not violate applicable water quality standards; and
- c. the permittee is not notified by the Regional Administrator to eliminate or reduce the quantity of such materials in the discharge.

6. Solids Disposal.

Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of by the permittee or his agent in such a manner as to prevent entry of such materials into waters of the United States. A report of plans, methods and procedures for such disposal shall be submitted to the Regional Administrator by September 1, 1973. If there is no solids disposal, the report shall so state.

7. Non-Compliance.

In the event the permittee is unable to comply with any of the conditions of this permit, due, among other reasons, to

- a. breakdown of waste treatment equipment,
- b. accidents caused by human error or negligence, or

c. other causes such as acts of nature,

the permittee shall notify the Regional Administrator in writing, as soon as he or his agents have knowledge of the incident. The written notification shall include pertinent information explaining reasons for the non-compliance and shall indicate what steps were taken to correct the problem, and the dates thereof, and what steps are being taken to prevent the problem from recurring.

In addition, if the non-compliance is with respect to any of the effluent limits (condition 1) of this permit, the permittee shall promptly initiate a monitoring program to analyse the discharge at least once every day for those constituents for which the effluent limits have been violated. Such daily analyses shall continue until compliance with the effluent limits has been attained, or until such time as the Regional Administrator determines to be appropriate. The results of such monitoring programs shall be included in the Discharge Monitoring Reports required by condition 3e.

8. Emergency Action -- Electric Power Failure.

The permittee shall

- a. by December 31, 1974 provide an alternate source of electric power to operate all waste treatment facilities, or
- b. indicate in writing, within thirty (30) days after the effective date of this permit, to the Regional Administrator, that production shall be controlled or the discharge shall be handled in such a manner that, in the event the primary source of electric power to the waste treatment facilities fails, any discharge into the receiving waters will comply with condition 1 requirements.

The alternate power supply, as referred to in (a) above, whether from a generating unit located at the plant site or purchased from an independent producer of electricity, must be separate from the existing power source used to operate the waste treatment facilities. If a separate facility located at the plant site is to be used, the permittee shall certify in writing to the Regional Administrator when the facility is completed and prepared to generate power.

9. Bypass of Waste Treatment Facilities.

There shall be no bypass of waste treatment or disposal facilities at any time.

10. Other Conditions.

a. Spill Prevention and Containment Plan

Within 90 days from the effective date of this permit, the permittee shall prepare and submit to the Regional Administrator and State Agency, a Spill Prevention, Containment, and Countermeasure Plan for the facility covered by this permit. Such plan shall contain information and procedures relative to the prevention of spills and unplanned discharges of oil and hazardous substances including:

- (1) a description of the reporting system which will be used to alert responsible facility management and appropriate legal authorities;
- (2) a description of preventive facilities (including overall facility plot) which prevent, contain or treat spills and unplanned discharges;
- (3) a list of all oil and hazardous materials used, processed, or stored at the facility which may be spilled into the waters of the United States;
- (4) a brief description of recent spills and the measures taken to prevent recurrence; and
- (5) an implementation schedule for additional facilities which might be required for (2) above, but which are not yet operational.

Permittee shall implement and comply with the provisions of such Plan after the Plan has been approved by the Regional Administrator, including in said implementation and compliance any additions or modifications which the Regional Administrator may make in approving the Plan.

b. Holding Pond Conditions

If any waste waters from the permittee's facility are placed in ponds, such ponds shall be located and constructed so as to:

- (1) contain with no discharge the once-in-one-hundred years storm at said location;
- (2) withstand with no discharge the once-in-one-hundred years flood of said location;

(3) prevent escape of waste water by either seepage or leakage.

11. Reapplication.

If the permittee desires to continue to discharge, he shall reapply not later than 180 days before this permit expires, on the application forms then in use.

12. Definitions.

For purposes of this permit, the following definitions shall apply:

Regional Administrator: Regional Administrator

Environmental Protection Agency

Region IX

100 California Street San Francisco CA 94111

State Agency: Commission of Environmental Protection

201 South Fall Street

Nye Building

Carson City NV 89701

Maximum Daily Pollutant Discharge Rate:

The maximum daily pollutant discharge rate shall be the value of M that is obtained from either of the following calculations for any calendar day:

$$M(lbs/day) = \frac{8.34}{N} \sum_{i=1}^{N} Q_iC_i; M(kg/day) = \frac{86.4}{N} \sum_{i=1}^{N} Q_iC_i$$

in which N is the number of samples analyzed in any calendar day, and Q_i and C_i are the flow rate (million gallons per day or cubic meters per second) and the constituent concentration (milligrams per liter), respectively, which are associated with each of the N samples. For any sample concentration, the associated flow rate is the average rate occurring during the period of sampling.

Thirty Day Average Pollutant Discharge Rate:

The thirty (30) day average pollutant discharge rate shall be the arithmetic average of all of the values of M calculated using the results of analyses of all samples collected during any thirty consecutive calendar day period. If fewer than four (4) samples are collected and analyzed during any thirty consecutive calendar day period, compliance with the thirty day average pollutant discharge rate limitation shall not be determined.

Maximum Concentration:

Maximum concentration limits shall be applied to the concentration values (milligrams per liter, mg/l) associated with any single discrete or composite sample.

Discrete Sample:

An individual sample collected in less than 15 minutes.

Composite Sample:

A combination of no fewer than eight individual samples obtained at equal time intervals over the specified sampling period. The volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling. The sampling period shall equal the discharge period, or 24 hours, whichever is shorter.

The Regional Administrator has notified the applicant and interested agencies and persons of his intent to issue a permit for the discharge described in Application No. 075-0YQ-2-000254 and has provided them an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

This permit shall become effective 30 days following the date of the Regional Administrator's signature, below, and shall expire on January 31, 1975.

By authority of the United States Environmental Protection Agency.

JUL 2 7 1973

Date

Regional Administrator

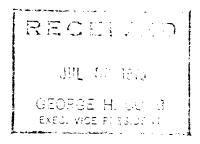


UNITED STATES ENVIRONMENTAL PROTECT IN MOUNCY BECOME

101 CALLED A STEER ET STARBANISE - UA - OF MAINSTE

Mr. George H. Cobb, Executive
Vice President
Kerr McGee Chemical Corporation
133 Robert S. Kerr Drive
Oklahoma City OK 73102

Dear Mr. Cobb:



In accordance with the provisions of the Federal Water Pollution Control Act (33 USC 1251 et. seq.), the Environmental Protection Agency has reviewed your application (No. 075-0YQ-2-000254) for a National Pollutant Discharge Elimination System permit to discharge waste waters from your Henderson, Nevada facility into Las Vegas Wash. This Agency has published a public notice regarding the application and our proposed action with respect to it, and held a public hearing to receive the views of all interested parties.

After consideration of the expressed views of all interested persons and agencies, pertinent Federal statutes and regulations, and State action regarding certification of this discharge, the enclosed National Pollutant Discharge Elimination System permit has been issued on this date by the Environmental Protection Agency for the discharge referred to above. The permit as issued differs from that proposed at the public hearing in the following significant respect:

1) The requirement for groundwater monitoring has been deleted.

The permit shall take effect thirty days from the date of this notice, unless a valid request for an adjudicatory hearing on this matter is received within twenty days

of the date of this notice. A request for an adjudicatory hearing will be considered to be valid if it complies in all respects with the requirements for such requests as described in pertinent Federal regulations (40 CFR 125.34).

Sincerely,

Paul De Falco, Jr.

Regional Administrator

Enclosure

cc: Nevada Commission

of Environmental Protection

(w/encl.)

UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION IX

100 CALIFORNIA STREET SAN FRANCISCO, CALIFORNIA 94111

Mr. James J. Kelley, President Kerr-McGee Chemical Corporation Kerr-McGee Building 73012 Oklahoma City OK

Dear Mr. Kelley:

We have received your letter of May 26, 1972 outlining the measures you intend to take to bring wastewater discharges from your facility at Henderson, Nevada into compliance with State-Federal water quality standards established for Lake Mead and the Colorado River.

As we understand your intentions, these measures include:

- Technical studies, design, and process changes for the chlorate plant, ammonium perchlorate plant, and manganese dioxide plant;
- 2. Design and construction of completely lined and sealed evaporation ponds for potassium wastewaters;
- Design and construction of completely lined and sealed evaporation ponds for wastewaters from the chlorate plant;
- Design and construction of completely lined and sealed evaporation ponds for wastewaters from the ammonium perchlorate plant;
- Design and construction of completely lined and sealed evaporation ponds for blowdown from cooling towers.

We understand further that these measures will result in a complete cessation of wastewater discharges to groundwaters and surface waters and will be taken in accordance with the following schedule:

> Date Item

7/1/72 Initiate item #1 above

Complete item #2 above 10/1/72

9/30/73	Initiate item #4 above
12/31/73	Complete item #1 and initiate item #3 above
3/31/74	Complete item #4 above
6/30/74	Complete item #3 and initiate item #5 above
12/31/74	Complete all work

We find that your proposed schedule of progress report submission to this office is satisfactory and will, accordingly, expect reports by 1/15/73, 7/15/73, 1/15/74, 7/15/74, and 1/15/75. Please furnish copies of these reports to the Nevada Commission of Environmental Protection, as well.

You are to be commended for your forthright response to the environmental problems in Las Vegas Valley and we will look forward to completion of the pollution abatement facilities you will be installing.

Sincerely,

R. L. O'Connell, Director Enforcement Division

cc: Nevada Commission of Environmental
Protection

U.S. Attorney, Las Vegas Mr. Charles Armstrong

COPY

Department of the Army Los Angeles District, Corps of Engineers P. O. Box 2711 Los Angeles, California 90053

Mr. R. P. Young Attention:

Chief, Construction-Operations Division

Re: 075-0YQ-2-000254

Gentlemen:

As mentioned in my letter to you of March 6, 1972, enclosed herewith is an original tracing and four copies of waste water discharge serial 001 from the Kerr-McGee Chemical Corp. facility at Henderson, Nevada.

Very truly yours,

T. L. Hurst Director of Environmental Services

TLH: jl Enclosures 5

C. B. Armstrong Henderson w/a

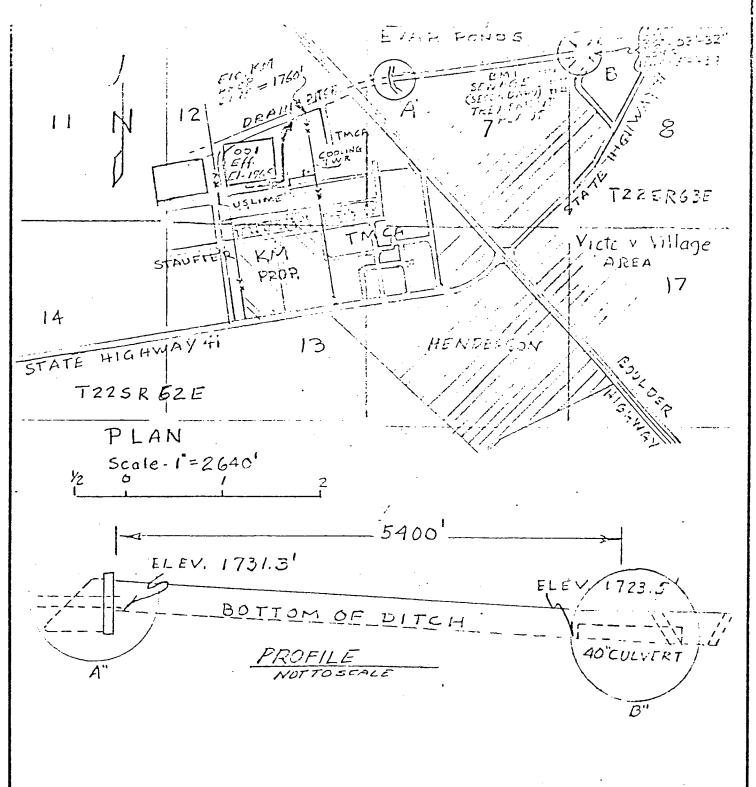
L. E. Craig w/a

M. C. Locke w/a

BLIND NOTE TO C. B. Armstrong:

Chuck, you will note the changes that we asked Ralph Vreeland to make to show a commingled outfall 001 that conforms with the data in the original application.

TIL.H.



Kerr Mc Gee Chemical Corp.

Discharge 075-040.2.00254

Ser, 001. Drain Ditch to

BMI Ponds with Elevations

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DRAWN OF CHECK L PAPER.

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March 6, 1972

Department of the Army Los Angeles District, Corps of Engineers P. O. Box 2711 Los Angeles, California 90053

Mr. R. P. Young Attention:

Chief, Construction-Operations Division

Re: 075-0YQ-2-000254

Gentlemen:

Returned herewith is above captioned application that provides additional data you requested on the Kerr-McGee Chemical Corp. facility at Henderson, Nevada.

A yellum or reproducible negative copy of the revised discharge drawing will be sent to you as soon as it is available which we expect to be in the next few days.

Sincerely,

T. L. Hurst

Director of Environmental

Services

TLH: jl Enclosure

bcc: C. B. Armstrong - Henderson w/a

L. E. Craig w/a

M. C. Locke w/a





FOR AGENCY USE								
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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

SECTION I. APPLICANT AND FACILITY DESCRIPTION

Unless otherwise specified on this form all items are to be completed. If an item is not applicable indicate "NA."

ADDITIONAL INSTRUCTIONS FOR SELECTED ITEMS APPEAR IN SEPARATE INSTRUCTION BOOKLET AS INDICATED. REFER TO BOOKLET BEFORE FILLING OUT THESE ITEMS.

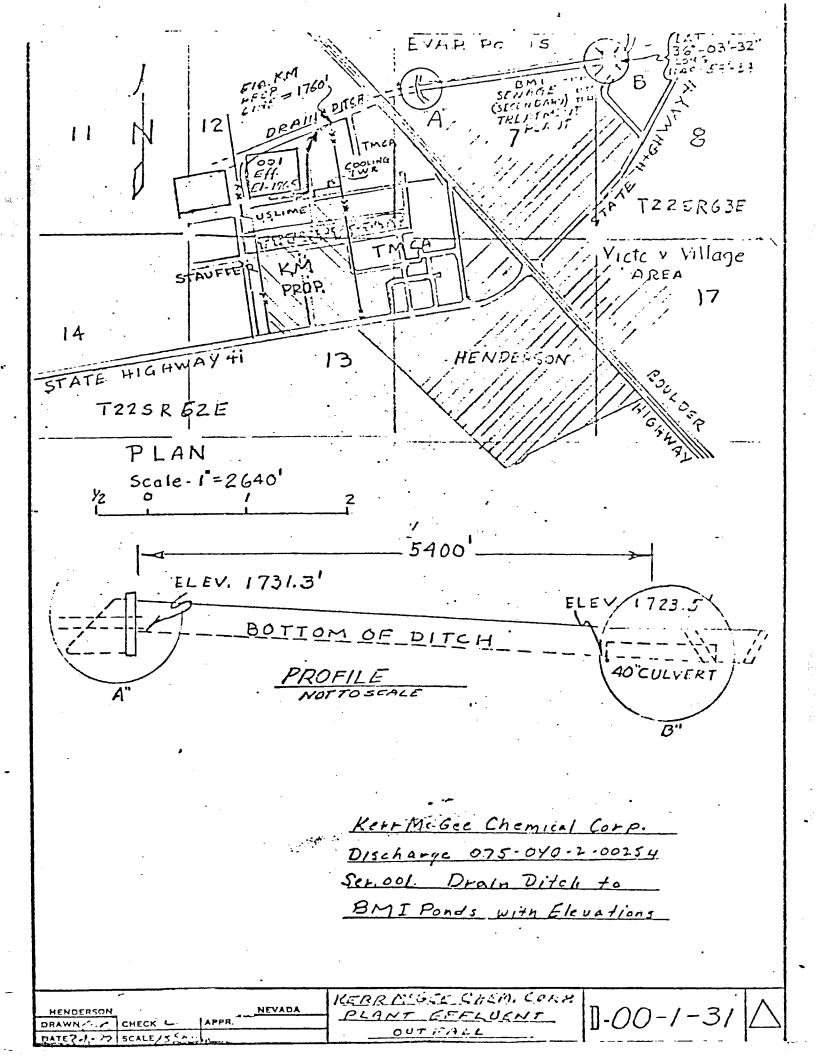
ВОС			Please Print or Type
1.	Legal Name of Applicant (see instructions)	101 _	KERR-McGEE CHEMICAL CORPORATION
2.	Mailing Address of Applicant (see instructions) Number & Street	102a _	McGee Tower Oklahoma City
	City	1025	
	State .	102e _	Oklahoma 73103
	Zip Code	102d _	73102
3.	Applicant's Authorized Agent (see instructions) Name and Title	1032 _	C. B. Armstrong, Plant Manager
	Number & Street Address	103b _	P. O. Box 55 Henderson
	City	103c _	
	State	103d _	Nevada
	Zip Code	1038 _	89015
	Telephone	1031 _	702 565-8901 Area Number
4.	Previous Application If a previous application for a National or Federal discharge permit has been made, give the date of application. Use numeric designation for date.	104	71 10 5 YR MO DAY
1 c	ertify that I am familiar with the inform	nation contain	ned in this application and that to the best of my knowledge and belief such information
is (rue, complete, and accurate. C. B. Armstrong		Plant Manager
_	Printed Name of Person		Title YR MO DAY
	Signature of Applicant or Au	thorized Agen	t Date Application Signed
18	U.S.C. Section 1001 provides that:		

Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly and wilfully falsifies, conceals or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statement or representation, or makes or uses any false writing or document knowing same to contain any fulse, fictitious or fraudulent statement or cutry, shall be fined not more than \$10,000 or imprisoned not more than five years, or both.

	Facility/Activity (see instructions) Give the name, ownership, and physical location of the plant or other operating facility where dis-				FOR AGENCY USE	
	charge(s) does or will occur.		Henderson P	Plant		
	Name	1C5a				
						— `
					•	
	Ownership (Public, Private or Both Public and Private)	1056	□PUB XXPRV	□вРР		
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	and give GSA Inventory Control		NA	•		
	Number	105d				
					·	
	. t modion		Lake Mead	Drivo		
	Location Street & Number	105e				_
	City	1051	Henderson			_
	• combre	1059	Clark			
	County		Nevada			
	State	105h				
	-		Chemical	Processing		
. 6.	Nature of Business State the	106a	<u> </u>	· · · · · · · · · · · · · · · · · · ·		
	nature of the business conducted at the plant or operating facility.					
	at the plant of operating seems,				•	
		1065	AGENCY US	SE	•	
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	-		<u> </u>			
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7.	Facility Intake Water (see instruc- tions) Indicate water intake volume		-		Addition of Common Flore	
	not day by sources. Estimate		Continuous	• •	Additional Summer Flow	
	average volume per day in thousand		Year Around		June - September	
	gallons per day.		600	housand gallons per day	4,000	
	Municipal or private water system	1072			NA	
	Surface water	1075	NA NA	thousand gallons per day	IMA .	
-	Surface water		NA .	thousand gallons per day	NA	
	Groundwater	107c			NA	
•		107d	NA	thousand gallons per day	nn.	
	Other -		600		4,000	
	Total Hom 7	1074	000	thousand gallons per day	4,000	
•	Total Item 7		1			
	*If there is intake water from		NA			
	'other,' specify the source.	1071			•	
	the same that make					
8	average volume per day in thousand			•		
	callons per day for the following	Ì			June - September	
	types of water usage at the facility.					
	(see instructions) Noncontact cooling water	1082	220	thousand gallons per day	4,000	
	Moncontact cooming water	1	80		NA	
	Boiler feed water	1085		thousand gallons per day		
			270		NA	
•	Process water (including contact cooling water)	1086	270	thousand gallons per day	ושו	
	Cooming water)		30		NA	
	Sanitary water	105d	1	thousand gallons per day		
	Other*	1030	NA	thousand gallons per day	NA	
	Omer	1	600		4,000	
	Total Item 8	1031		thousand gallons per day	e e e e e e e e e e e e e e e e e e e	
		1	MA			
	*If there are discharges to 'other,' specify.	1089	NA NA			
		1	200			
	If there is 'Sanitary' water use, give the number of people served.	1081	200	people served		
	The state of the s	•	-			

FOR AGENCY USE

Att Facility Disch Losses; flumber a Instructions) Volu number of discha	nd Discharge (see ume Specify the	1							
number of discha- volume of water of lost from the faci- the categories bel averaga volume po- gallons per day.	sischarged or lity according to ow. Estimate		Dis	nber of charge oints		ear Around Fotal Volume U or Discharged, Thousand Gal/C	sed .	June	tional - Septeml
Surface Water		10	0041		10012	<u>ina</u>			NA
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ystem					100c2	NA			NA
torm water tran			CDc1 —		10362	NA			NA
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Evaporation		1	co11		10912	210	 .		NA
Consumption			m. tien		109j2	<u>NA</u>		-	NA
Other*		. I.	109K1		109k2	<u>NA</u>			NA
Facility discharg	ges and volume		10a1 1 —	3	10912	600		4,0	000
*If there are dis specify.	charges to 'other	.	109m1		NA				
Permits, License	es and Application, pending or deni-	ns ed permit	s, licenses	and appli	ications rela	ted to discharge:	from this facill	ty (see instruction	ons).
Issuing Agency	For Agency L	ту Ту	pe of Perm or License	. 1	Number	Date Filed YR/MO/DA	Date Issued YR/MO/DA	Date Denied YR/MO/DA	Expiration Date YR/MO/DA
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5. Date	(Office use only)
6 11 71	075-078-2-000254
mo day yr 6. Chack typs of application:	7. Number of original application
a. Original X b. Revision	
8. Name of facility where discharge or construction will occur.	
Henderson, Nevada	
Kerr-McGee Chemica	al Corp.
· · · · · · · · · · · · · · · · · · ·	
9. Full mailing address of facility named in item 8 above. P. O. Box 55	
Henderson, Nevada	89015
·	
10. Names and mailing addresses of all adjoining property owners whose pr	roperty also adjoins the waterway.
Unnamed drainage ditch discharging	to BMI imponding lagoons
Stauffer Chemical Company - Hender	son, Nevada
	son, Nevada
Titanium Metals Corp. of America -	Henderson, Nevada
	`
11. Check to indicate the nature of the proposed activity:	struction with Discharge b. Discharge only
	struction with Discharge . b. Discharge only X
12. If activity is temporary in nature, estimate its duration in months.	
PERMAUGNT	
If application is for a discharge:	
If application is for a discharge: 13. List intake sources	
13. List intake sources	Estimated Volume in Million Gallons Per day or Fraction
13. List intake sources Source	
13. List intake sources Source Municipal or private water supply system —	Gallons Per day or Fraction
13. List intake sources Source	Gallons Per day or Fraction
13. List intake sources Source Municipal or private water supply system Surface water body	Gallons Per day or Fraction
Source Municipal or private water supply system Surface water body Ground water	Gallons Per day or Fraction Thereof 8
Source Municipal or private water supply system Surface water body Ground water Other 14. Describe water usage within the plant	Gallons Per day or Fraction Thereof 8
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Source Municipal or private water supply system Surface water body Ground water Other 14. Describe water usage within the plant Type Cooling water Boiler Feed water Process water	Far. 14 Other** Estimated Volume in Million Gallons Per day or Fraction Thereof 2 2 2 cooling .07
Source Municipal or private water supply system Surface water body Ground water Other 14. Describe water usage within the plant Type Cooling water Boiler Feed water Process water Sanitary system Source Municipal or private water supply system Type Cooling water Process water	Gallons Per day or Fraction Thereof 8 Par. 14 Other** Estimated Volume in Million Gallons Per day or Fraction Thereof 2 2 Cooling One of the state of the sta
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128 Will (5gm).

FORM APPROVED
OMB NO. 45-R (408

DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS

APPLICATION FOR PERMIT TO DISCHARGE OR WORK IN NAVIGABLE WATERS AND THEIR TRIBUTARIES

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· ·	· •	1. State	Application	on Number (to	be assigned b	by Corps of Engineers)		
SECTION I. GENERAL INFORMATION		<u>N</u> <u>A</u>	Div.	Dist.	Тура	Sequence No.		
2. Name of applicant and title of signing official	Kerr-McGe							
Subsid. of Kerr-McGee Corp.	George H.	Cobb,	Execu	tive Vice	-Preside	ent		
3. Mailing address of applicant	133 Rober Oklahoma			та 73102				
4. Name, address, telephone number and title of applicant	's authorized age	nt for pern	a: applicat	tion coordinati	on and corre	spondence.		
4. Name, audress, telephone numeer and two or epp.	T. L. Hur Director Kerr-McGe 133 Rober Oklahoma	rst of Env ee Corp rt S. K City.	ironmen oration err Oklahon	ntal Stud n ma 73102		<u>.</u>		
Required Information a. All information contained in this application will, up entitled "Confidential Answers" must be used to set mercial or financial information of a confidential natification of information of a confidential natification of the set. However, in no event will identificate information. b. The applicant shall furnish such supplementary information. c. If additional space is needed for a complete response that sheet the item numbers to which answers apply. d. Drawings required by items 20 and 21 should be attained at the item numbers to which answers apply. frees If any discharge or deposit is involved, an application additional point of discharge or deposit. Signature a. If a discharge is involved, an application submitted be an official of the rank of corporate vice president or by the principal executive officer to make such application must be signed by a general partner of the set of the set of the set of the set of the set of the set of the set of the set of the application must be signed by a general partner of the set o	NOTE TO APPLICANT: Refer to the pamphlet entitled "Permits for Work and Structures in and for Discharges or Deposits into Navigable Waters" before attempting to complete this form. Required Information a. All information contained in this application will, upon request, be made available to the public for inspection and copying. A separate sheet entitled "Contidential Answers" must be used to set out information which is considered by the applicant to constitute trade secrets or commercial or financial information of a confidential nature. The information must clearly indicate the item number to which it applies. Confidential treatment can be considered only for that information for which a specific written request of confidentiality has been made on the attached sheet. However, in no event will identification of the contents and frequency of a discharge be recognized as confidential or privileged information. b. The applicant shall furnish such supplementary information as is required by the District Engineer in order to evaluate fully an application. c. If additional space is needed for a complete response to any item on this form, attach a sheet entitled "Additional Information." Indicate on that sheet the item numbers to which answers apply. d. Drawings required by items 20 and 21 should be attached to this application. Other papers which must be attached to this application include, if applicable, copies of a water quality certification or a written communication which describes water quality impact (see Item 22 and Item 10 of Section II below), the additional information sheet(s) in "c" above, and the confidential information sheet described in "a" above. Fees If any discharge or deposit is involved, an application submitted by a corporation must be signed by the principal executive officer of that corporation or by an official of the rank of corporate vice president or above who reports directly to such principal executive officer and who has been designated by the principal executive officer of t							
Application is hereby made for a permit or permits to authorize the activities described here in y certify and tall that the information contained in this application, and that to the best of my knowledge and belief such information is true, complete, and accurate. Signature of Applicant GEORGE H. COBB Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly and wilfully falsifies, conceals or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulant statements or representations, or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulant statement or entry, shall be fined not more than \$10,000 or imprisoned not more than five years, or both.								
Acronym name of applicant Date received, form not complete — — —		Are discha	rga structu	Minor?	N/A	' □		
Date received, form complete but without certificate Date received, form complete Date of Cert./Ltr. day n	no yr	Date sent 1	=	rm not comple DAA, D/I, AEC orm		mo vi		

5. Date	(Ot nly)
6 _ 11 .	,
mo Ciy yr	<u>· </u>
6. Check type of epplication:	7. Number of original application
a. Original X b. Revision	
8. Name of facility where discharge or construction will occur.	
Handangan Novada	D1
Henderson, Nevada	
Kerr-McGee Chemic	cal Corp.
9. Full mailing address of facility named in item 8 above.	
P. O. Box 55	•
Henderson, Nevada	a 89015
•	
10. Names and mailing addresses of all adjoining property owners whose p	property also adjoins the waterway.
	•
Unnamed drainage ditch discharging	
Stauffer Chemical Company - Hender	
	rson, Nevada
Titanium Metals Corp. of America -	Henderson, Nevada
	•
44 Charles Librards and a fabruary and a side a	
11. Check to indicate the nature of the proposed activity:	
a. Dredging b. Construction c. Cor	nstruction with Discharge b. Discharge only
12. If activity is temporary in nature, estimate its duration in months.	
	•
If application is for a discharge:	
13. List intake sources	
	Estimated Volume in Million
Source	Gallons Per day or Fraction
Municipal or policeta contar acceptance	Thoracf 8
Municipal or private water supply system — Surface water body —	
Ground water	
Other	
14. Describe water usage within the plant	
	Estimated Volume in Million
Туре	Gallons Per day or Fraction
	Thoreof 2 2
Cooling water	· 1 · - 2
Boiler Feed water	$\frac{3}{5}$
Process water —— Sanitary system* ——	$-\frac{1}{0} - \frac{1}{3}$
Other	$ \frac{1}{1} - \frac{1}{2}$
15. List volume of discharges or losses other than into navigable waters.	
	Estimated Volume in Million
. Туро	Gallons Per day or Fraction
1	Thereof
Municipal waste treatment system	
Surface containment	<u> </u>
Underground disposal	
Waste Acceptance firms	:
Evaporation	<u></u>
Consumption	
•	125
• Indicate number employees served per day	135

ENG FORM 4345 MAY 71

If structures exis	t, or drudging of the activit,	other const , 🏎 described,	ruction will occur,	the	in pr	niy)		
		rithin which the str	ructures exist or the	· L			· · · · · · · · · · · · · · · · · · ·	·
activity will occu	State Ner	vada	17. County C	Clark	City o	None None		
. Name of waterw	ray at the location	n of the activity		-				
19			itch to BMI					 -
and non-structu	iral points of disc	charge, must be att	aracter of each stru ached to this applic	ation.				
fully shown on tion (Section II	detailed plans to of this form) ha	s been submitted with	which a separate per this application. N	ote on the u	rewings tuose	structures for whic	n separate dischar	rge morn
22. List all approva described in th	als or denials gran	ted by Federal, int	terstate, State or loc	al agencies f	or any structu	res, construction, d	ischarges or depo	sits
. •	Type of	documenţ	ld. No.	1	Date	Issuing A	pancy	
			•				•	
•								
	•	•	,			•	•	
			• :					
						•	•	
		,			•	٠		
					. <u>E</u>	 रा		
23. Check if facili			nstruction prior to A	tprn 3, 1970				· · · · · · · · · · · · · · · · · · ·
			in cubic yards, and	the proposed	d mothod of r	neasuroment.		
		Not Appli	cable					
•		•			•	•		
·			•		٠			
			·					
25. Describe the production determine its	proposed method offect upon the	of instrumentation waterway.	n which will be used	i to measure	the volume of	f any solids which r	nay be deposited	and to
	A weir-typ	e continuou luent strea	s sampler ar m.	nd conti	nuous co	nductivity n	nonitoring	
						• .		
na.					•	•		
26 State rates an	d periods of dep	osition described in	11em 25.				<u>,</u>	 ·
20, 51818 18185 811	a perious or dep				•	•		
		Not Appl	icable			•	•	
				·	-			
į				-	•	•		

	D. ANT DD 0.05					
.c.iON il.	PLANT PROCES	S AND DISC	JUL DESCI	RIPTION	·	
1. Discharge described below is a. Faesent X or changed	2. Implementation schedule		fice use only)			•
Name of corporate boundaries within which the poi State	nt of discharge is loc County			City or	6. Discharge Serial	No.
3. <u>Nevada</u>	4	Clark			None	
file size of discharge		9. Name of waterw	at the point	of disabases		
State the precise location of the point of discharge. 7. Latitude 3 6 Degrees; 0 2 Min	5 7 Sec		-		o BMI impond	ling
8. Longitude 1 1 4 Degrees; 5 9 Min		lagoons.	ar azriago		o wie emporte	1116
10. Has application for water quality certification o	r description of imp	act been made? If s	o, give date:	· · ·		
Date	Check if certi		Name	Issuing Agen	су	
-	is ottoched to		<u> </u>			
11. Narrative description of activity (include terms	of general 4-digit Sta	indard Industrial Cl	assification, an	d specific ma	anufacturing proces	s). ·
Salt water is electrolyzed to electrolyzed to sodium perch muriatic acid to ammonium pe	to sodium chl lorate. Soc	orate. A po	ortion of	this c	hlorate is f	furthe:
Manganese ore (pyrolusite) i in a water soluble form. Th manganese dioxide.	s roasted and is solution	d treated to is electroly	o extract yzed to f	the mar	nganese cont tery active	ent
Some sodium chlorate and per	chlorate is	converted to	o potassi	um chlo	rate and per	chlora
(All processes included un	•				•	
12. Standard industrial classification number.	13. Principal	product.		14. Amount per day.	of principal produc	t produce
				p. 007.		
2819						
	.		-			
15. Principal raw material.	16. Amount o	of principal raw mat	erial	17. Number	of batch discharges	per day.
Salt		48 To			inuous	
Manganese Ore	1	22 To:			inuous	
Ammonia Muriatic Acid	1	2 To: 11 To:			-continuous	
18. Average gallons per batch discharge.	19. Date discharge b		1	ate discharge		
	_	_		•	•	
	<u>B</u> e:	fore <u>1950</u>		-	mo day	
21. Describe waste abatement practices.						
Wastes are minimized by use of waters (ECOUNT), recovery of a	f mechanical material for	seals on mareuse in pr	ny pumps ocess (RE	(EPUMPS), recycle o	of wasl
Vacuum filtration with wash wash RECOVE, SLAGOO.		-		-	anese area S	SVACUM,
Pressure filtration with wash perchlorate areas.	water recove	ery to proce	ss in the	chlora	te and ammon	iium
Continuous sampling and conduc	ctivity moni	oring is pr	acticed c	on the e	ffluent stre	eam.
•						

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		3101	AL D	ESCRIPTIO	ON OF INTAK				DISCHARGE	·		1,49	
Intako				Discharge		(01	lice v	se on	ly)				1
		· `					\			Discharge Serial	No.		
TATAL AND THE PARTY OF THE PART	Int Re	PAROLES	\	RLERACE DAILY	CREARING SEAR	OREAN	Stance I	N.C.	TRESTANDLE CY	Montage Contractor			
Parameter and (Code)	(1)	<u> </u>		(2)	(3)	(4)		**************************************	(5)	(6)		7)	
00026 (Gallous Est qah) Elom	800	,000		None	600,000	500	,000) 4	1,000,000	Daily	Mo	on	
pH 00400		3		-	8		5		10	Daily	Mo	on .	16.1914.4
Temperature (Winter) (°F) 74028	5!	5		-	65	Ambi	ent		Ambient	Other	A	BS	18 18 18 18 18 18 18 18 18 18 18 18 18 1
Temperature (Summer) (°F) 74027	6!	5		-	75	Ambio	ent		Ambient	0ther	A)	BS	
23.				Dt	SCHARGE CO	NTENTS	3						
PARAMETER		PRESENT	ABSENT	P	ARAMETER	٠	PRESENT	ABSENT	P.	ARAMETER		PRESENT	ABSENT
Color 00080		χ		Aluminum 01105			-	χ	Nickel 01067			х	
Turbidity 00070		Х	٠,	Antimony 01097		:	Х		Selenium 01147				κ
Radioactivity 74050			х	Arsenic 01002			х		Silver 01077				K
Hardness 00900		Х		Beryllium 01012				х	Potassium 00937			Х	
Solids 00500		х		Barium 01007				Х	Sodium 00929			Х	
Ammonia 00610		Х		Boron 01022				х	Titanium 01152				K
Organic Nitrogen			х	Cadmium 01027				Х	.Tin 01102				X
Nitrate 00620			х	Calcium 00916			Х		Zinc 01092			Х	
Nitrite 00615	· · · · · ·		х	Cobalt 01037			X		Algicides 74051				>
Phosphorus 00665		х		Chromium 01034			х		Oil and Greas 00550	e			7
Sulfate 00945		х		Copper 01042			x		Phenols 32730				>
Sulfide 00745			χ	1ron 01045			X		Surfactants 38260				}

X

X

χ

χ

χ

38260

74052

74054

Pesticides 74053

Coliform Bacteria 74056

Chlorinated Hydrocarbons

Fecal Streptococci Bacteria

Iron 01045

Lead

01051

00927

01055

Mercury 71900

Magnesium

Manganese

Molybdenum 01062

χ

χ

χ

ENG FORM 4345-1

00745

Sulfite

00740

71870

00940

Bromide

Chlorido

Cyar-111 00720

Fluoride

00/251

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•	•				
1	H. Fall k	nown hazzidous (ially hazardous substances in	your pla	nt boer	d7
	$\overline{\Sigma}$	Yes No	•		
	: 			·	
24b.	If yes, ha this disch		lity of a	ny such kr	nown hazardous or potentially hazardous substance entering
	Ľ	Yes No			
25 B	emarks.				
25, 1	ciiio iio.		•		
	•				
		•			
		·			
The i	nformation tivity inclu	n above completes the basic reporting requirements whic ded within any of the Standard Industrial Classification	h are rec Code (S	quired of a IC Code) o	Il applicants. Those applicants whose discharge results fron categories listed below must complete Part A of this form as
		CRITICAL INI	DUSTR	IAL GR	OUPS .
SIC	098	FISH HATCHERIES, FARMS, AND PRESERVES	SIC	285	PAINTS, VARNISHES, LACQUERS, LNAMELS, AND ALLIED PRODUCTS
SIC	10-14	DIVISION B - MINING	SIC	2871	FERTILIZERS
SIC	201	MEAT PRODUCTS	SIC	2879	AGRICULTURAL PESTICIDES, AND OTHER AGRI-
SIC	202	DAIRY PRODUCTS			CULTURAL CHEMICALS, NOT ELSEWHERE CLASSIFIED
SIC	203	CANNED PRESERVED FRUITS, VEGETABLES (EXCEPT SEAFOODS, SIC 2031 AND 2036)	SIC	2891	ADHESIVES AND GELATIN
SIC	2031,	CANNED AND CURED FISH AND SEAFOODS;	SIC	2892	EXPLOSIVES
	2036	FRESH OR FROZEN PACKAGED FISH AND SEAFOODS	SIC	29	PETROLEUM REFINING AND RELATED INDUSTRIE
SIC	204	GRAIN MILL PRODUCTS	SIC	3011, 3069	TIRES AND INNER TUBES; FASRICATED RUBEER PRODUCTS, NOT ELSEWHERE CLASSIFIED
SIC	205	SUGAR	SIC	3079	MISCELLANEOUS PLASTICS PRODUCTS
SIC	207	CONFECTIONARY AND RELATED PRODUCTS	SIC	311	LEATHER TANNING AND FINISHING
SIC	208	MISCELLANEOUS FOOD PREPARATIONS AND	SIC	32	STONE, CLAY, GLASS, AND CONCRETE PRODUCTS
SIC	209	KINDRED PRODUCTS	SIC	331	BLAST FURNACES, STEEL WORKS, AND ROLLING AND FINISHING MILLS
SIC	22	TEXTILE MILL PRODUCTS	SIC	332	IRON AND STEEL FOUNDRIES
SIC	23	APPAREL AND OTHER FINISHED PRODUCTS MADE FROM FABRICS AND SIMILAR MATERIALS	SIC .	333, 334	PRIMARY SMELTING AND REFINING OF NON- FERROUS METALS; SECONDARY SMELTING AND REFINING OF NONFERROUS METALS
SIC	242	SAWMILLS AND PLANING MILLS	SIC	336	NONFERROUS FOUNDRIES
SIC	2432	VENEER AND PLYWOOD	SIC	347	COATING, ENGRAVING, AND ALLIED SERVICES
SIC	2491	WOOD PRESERVING	SIC	35	MACHINERY, EXCEPT ELECTRICAL
SIC	26	PAPER AND ALLIED PRODUCTS	SIC	36	ELECTRICAL MACHINERY, EQUIPMENT, AND
SIC	281	INDUSTRIAL INORGANIC AND ORGANIC CHEMICALS (EXCEPT SIC 2818)	SIC	37	SUPPLIES TRANSPORTATION EQUIPMENT (EXCEPT SHIP
SIC	2818	INDUSTRIAL ORGANIC CHEMICALS	0.0	•	BUILDING AND REPAIRING, SIC 3731)
sic	282	PLASTICS MATERIALS AND SYNTHETIC RESINS, SYNTHETIC RUBBER, SYNTHETIC	SIC	3731	SHIP BUILDING AND REPAIRING
		AND OTHER MAN-MADE FIBERS, EXCEPT GLASS	SIC	491	ELECTRIC COMPANIES AND SYSTEMS
SIC	283	DRUGS	SIC	493	COMBINATION COMPANIES AND SYSTEMS
SIC	284	SOAP, DETERGENTS, AND CLEANING PREPARATIONS, PERFUMES, COSMETICS, AND OTHER TOILET PREPARATIONS			

PART A

(Note: Submission of Part A is required of all applicants whose processes are listed on page 3 above.)

(Vino esu o. 2)

Discharge Serial No.

INFORMATION REQUIRED OF SPECIFIED INDUSTRIES

Intake Discharge													
PARAMETER AND CODE ALKALINITY (as Ca CO ₃)	MAXIMUM CO INTAICE MA MATERIALION	MAXIMUM PER PRO INCENTRATIO (2)	And the Politics of the Constant of the Consta	CONCENT ON CENT ON YUND ON Y (4)	AVERICA TRATION (5)	SARAN SARAN (6)	SAMPLE TYPE (7)	Or MAN	CONITION SIS	TINGOUS (10)	(11)		
ALKALINITY (as Ca CO ₃) 00410	122	NA	120	NA .	4,000	\ <u>`</u>	550		OTHER	STD	ABS		
B.O.D. 5-DAY 00310	· NA	f1	NA	11	NA	NA	NA	NA	NA	NA	NA		
CHEMICAL OXYGEN DEMAND (C.O.D.) 00340	24	11	36	11	875	22	110	COMP	OTHER	STD	ABS		
TOTAL SOLIDS	800	11	6,036	11	52,800	4,036	20,200	COMP	OTHER	STD	ABS		
TOTAL DISSOLVED SOLIDS	7 96	ŧı	5,606	11	50,600	3,822	19,100	COMP	OTHER	STD	ABS		
TOTAL SUSPENDED SOLIDS	4	†1	430	11	2,200	216	1,080	COMP	OTHER	STD	ABS		
TOTAL VOLATILE SOLIDS 00505	176	11	1,380	ff	11,900	968	4,840	COMP	OTHER	STD	ABS		
AMMONIA (as N) 00610	ND	11	30	71	184	.7	35	COMP	OTHER	STD	ABS		
KJELDAHL NITROGEN 00625	ND	*1	30	11	184	7	35	COMP	OTHER	STD	ABS		
NITRATE (as N) 00620	1.0	11	.92	*1	31	0.49	2.5	COMP	OTHER	STD	ABS		
PHOSPHORUS TOTAL (as P) 00665	0.25	11	.80	**	12	0.4	2	ССМР	OTHER	STD	ABS		

ENG FORM 4345-1

TABLE A Guide for Completion of Par

PARAMETER & UNITS	METHOD	STANDÅRD METHODS 13TH ED. 1971	A.S.T.M. STANDARDS Pt. 23 1970	W.Q.O. METHODS 1971	SIGNIFICAN IN REPORTING DATA
ALKALINITY AS Ca CO ₃ Mg/liter	ELECTROMETRIC TITRATION TECHNICON METHYL ORANGE METHOD	p. 370	p. 154	p. 6	x.
B.O.D. 5-DAY Mg/liter	MODIFIED WINKLER METHOD OR PROBE METHOD	p. 489	p. 712 ·	p. 15	x.
CHEMICAL OXYGEN DEMAND (C.O.D.) Mg/liter	DICHROMATE REFLUX METHOD	p. 495	_	p. 17	x.
TOTAL SOLIDS Mg/liter	GRAVIMETRIC, 105°C. METHOD	p. 535	-	p. 280	x .
TOTAL DISSOLVED (FILTERABLE) SOLIDS Mg/liter	GLASS FIBER FILTRATION METHOD, 180°C.	p. 539	-	p. 275	x.
TOTAL SUSPENDED (NON-FILTERABLE) SOLIDS Mg/liter	GLASS FIBER FILTRATION METHOD, 103-105°C.	p. 537	-	p. 278	x.
TOTAL VOLATILE SOLIDS Mg/liter	GRAVIMETRIC METHOD 550°C.	р. 536	-	p. 282	x.
AMMONIA (as N) Mg/liter	DISTILLATION-NESSLERIZATION METHOD OR TECHNICON-DIGESTION & PHENOLATE METHOD	p. 453	-	p. 134	.xx
KJELDAHL NITROGEN Mg/liter	DIGESTION-DISTILLATION METHOD OR TECHNICON-DIGESTION & PHENOLATE METHOD	p. 469	-	p. 149	.xx
i NITRATE (as N) Mg/liter	BRUCINE SULFATE METHOD OR TECHNICON-HYDRAZINE REDUCTION METHOD	p. 461	-	p. 170	.xx
TOTAL PHOSPHORUS (as P) Mg/liter	PERSULFATE DIGESTION & SINGLE REAGENT METHOD OR TECHNICON-MANUAL DIGESTION & SINGLE REAGENT OR STANNOUS CHLORIDE	р. 526	-	p. 235	.xx

ENG FORM 4345-1

Discharge Permit Application No. NV 075-0YQ-2-000254

Discharge Serial No. 001

I certify that I am familiar with the information contained in the attached form B and that to the best of my knowledge and belief, such information is true, complete and accurate.

George H. Cobb

Executive Vice President

GHC:j1 Attachment

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				SCHIPTOON	· · ·		
Attole: Selimission of Part B Histographical to Allebili Phil A. a Indicated in the instructions are t	かいしん おいしこり もらり いりばから	ni d artorinelikatili A	-	fice use only)			
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3-1. PHYSGBAL A	WED BIOLOGICA	AL PARMITER	ers of intra	KE WATER A	PANDEND OF	PEE (See Tob	
ntake	·			Dischurge	•		
	\ . \		\ \		\ co.		-
WENTE	WIATRE AL	ERA OPE	AMINI OP	Sala Sall	2r 1	INUOL	
INTREATED HATER	WYAREATED AV	ERAGE IDAILY,	MINIMUM (OPERATING YEAR)	SANI SANI SANI SANI SANI SANI SANI SANI	CONT CLE FREQUENCY	INUOUS MONITORI	
· ·	(A)	1,2	CARI	EARI	Ne,	, ORI	no l
PARAMETER	\		$\overline{}$				
AND CODE	(1)	(2)	(3)	(4)	(5)	(6)	(7)
COLOR ;	₹ 5.	NA.	∢ 5	\times	< 5	D	Λ
SPECIFIC CONDUCTANCE 00095	NA -	NA .	NA	ΝΛ	AII	на	117
TURBIDITY 00070 &	< 4	An'	:1·0		15.	. 0	۸
FECAL STREPTOCOCCI BACTERIA 74054	- NA	NA	NA ·	X	на	liA.	NA
FECAL COLIFORM BACTERIA 74055	NA	NA	NA -	X	AM	пА	na.
TOTAL COLIFORM BACTERIA 74055	NA	NA	NA	X	NA	· IIA	NA NA
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PART B

(Office use only)

NV 075-0YQ-2-000254

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B-2. CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

3-2. C	HEMICAL P	ARAMETE	RS OF INT	AKE WAT	ER AND DI	SCHARGE	(See Table	B-2)	<u>. </u>		
Intake	·				Pischarge						
UNTREATED INTAKE WA	MAXIMUM, OINTAKE NATE,	CONCENTRATIO	MA + MILIN POCKS SERI	OAIL + AL	G. CONCENTRAL	SA SA SA SA SA SA SA SA SA SA SA SA SA S	CONTROLLE TO OF PROJECT OF THE OWNER OF THE OWNER OF THE OWNER OWN	MINOUS PRAIL CX	Lionings	ORING	
PARAMETER AND CODE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	1	(1
ACIDITY (as CaCO ₃) 00435	ΝΛ	АИ	ΙΙΑ	ЦA	. NA	NA	АИ	IΙΑ	нA	AII	H/
TOTAL ORGANIC CAREON (T.O.C.) 00680	А	NA	-3	NA	15	2	10	С	D	S	Α
TOTAL HARDNESS 00900 p	360	NA	1,200	АИ	11,000	1,100	5,500	С	D	0	ļ
NITRITE (as N) 00615	AM	NA	NA	NA	NA	NA	All	Аи	IIA	ΛИ	ы
ORGANIC NITROGEN 00505	NA	АИ	NA.	NA.	NA	NA	ΝΛ	NА	ΝА	AII	N
PHOSPHORUS-ORTHO (as P) 70507	Аи	ИА	. NA	NA	Аи	НĀ	NA	АИ	ΛИ	All	K.
SULFATE 00945 K	315	NA	2,500	АИ	13,000	1,700	8,500	С	D	ō	
SULFIDE 00745	0.2	NA	1.0	NA NA	· 5′ 6	0.6	3.0 3.6	С	D	S	
SULFITE 00740	NA	NA	IIA	АИ	пА	NA	НА	NA	ιτν	ПA	l I
BROMIDE 71870	нА	NA	пA	ИA	NA ·	Ait	NA	AH	111	NA NA	11

ENG FORM 4345-1

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		1	1V 075-	OYQ-2-	000254	USCHAPGE	ISen Tabl	o P.2)	00		\dashv	
B-2. (cont.)	CHEMICAL	PARAMETE	HS OF IN		IER AND L	JOUNANGE		C D-21		•		
Intake					A .	77	77				-	
UNTREATED INTAKE WATER WATER WATER TO WITH THE STATE OF T												
PARAMETER AND CODE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		(11)	
CHLORIDE 00940	110	NA .	4,000	АИ	20,000	1,200	6,000	С	D	0	R	
CYANIDE 00720	Α .	NA	0.01	АИ	. <i>05</i> 0.06	А	A	С	D	S	Α	
FLUORIDE 00951	0.30	NA	0.30	NA	1.5 1.8	0.30	1.5	С	D	S	A	
ALUMINUM-TOTAL 01105	25	NA	100	NA	0.5	60	0.3	С	D	S	Α	
ANTIMONY-TOTAL 01097	Α	NA	A	NA	A	А	A	C	D	S	A	
ARSENIC-TOTAL 01002	А	NA	6	NA	0.03	4	0.02	С	D	S	A	
BARIUM-TOTAL 01007	Аи	NA	· na	An	NA .	НΛ	NA	HΛ	нА	tιΑ	ΗΛ	
BERYLLIUM-TOTAL 01012	NA NA	Аи	NА	IIA	на	NA	NA	нА	ПA	IIA	IIA	
BORON-TOTAL 01022	NA	МА	NΑ	NA	NA	ПA	NA	ИA	NΛ	ŀΛ	111	
CADIAIUM-TOTAL 01027	12	NA	100	АИ	0.5	60	0.3	С	D	S	А	

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B-2. (cont.)	CHEMICAL	PARAMET	ERS OF IN	TAKE WAT	ER AND I	DISCHARGE	(See Tabl	e B-2			
Intako					schnryo		· · · · · ·			•	
UNTREATED INTAKE WATER ATON THE ATON THE ATON THE WATER ATON THE W											
PARAMETER AND CODE .	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		(10)	(11)
CALCIUM-TOTAL 00916	100.0	nА	500	NA	2,500	400	2,000	С	D	S	Α
CHROMIUM-TOTAL 01034	8	NA	6,000	NA ·	30	60	0.3	С	D	S	А
COBALT-TOTAL 01037	0	NA	500	NA	2.5	300	1.4	С	D	S	Λ
COPPER-TOTAL 01042	100	НΛ	1,000	NA	ς,δ 8.0	800	4.0	С	D	S	٨
IRON-TOTAL 01045	o p	нA	480,000	An	2,400	220,000	1,100	С	D _.	S	Λ
LEAD-TOTAL 01051	200	NA	1,000	NA	12.0	800	4.0	С	D	S	Α
MAGNESIUM-TOTAL 00927	28	АИ	40	All	1,200	30	150 ′	С	D	S	А
MANGANESE-TOTAL 01055	0 1	ŊА	600,000	ĮĮA	3,000	360,000	1,800	С	D	S	A
MERCURY-TOTAL 71900	Α .	NA	А	NA	A	А	Α	С	D	S	A
MOLYEDENUM-TOTAL 01062	10 .	NA	60	АИ	.03	45	.02	С	D	s	А

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				, [· 					
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B-2. (cont.)	CHEMICAL	PARAMET	TERS OF IT	TAKE WA	YER AND	DISCHARG	E (See Teb	le B-Z	2)	-		
Intake					Discharge							
UNTREATED INTAKE WATER PROUNDS PER DAY PARAMETER												
PARAMETER AND CODE	(1)	(2)	(3)	(4)	(5)	(6)	. (7)	(8)	(9)	_(10)	(11	
NICKEL-TOTAL 01067 &	A	AN	2,000	ПA	10.0	1,600	8.0	С	D	0	А	
POTASSIUM-TOTAL,	5.00	AN	480	ΝΑ	2,400	240	1,200	С	D	0	А	
SELENIUM-TOTAL 01147	АИ	NA	АИ	АИ	АИ	Аи	МУ	АИ	ΝΑ	AM	11/	
SILVER-TOTAL 01077	NA .	NA	NA	NA	NΑ	NA	NA .	АИ	HA	NA	11/	
SODIUM-TOTAL 00929	150	NA	3,000	NA .	15,000	1,000	5,000	С	D	S	R	
THALLIUM-TOTAL 01059	АИ	NA.	АИ	NA	MA	АИ	An	NA	Λſ	NA	NA	
TIN-TOTAL 01102	NA .	NA	NA	NA_	iλΛ	на	NA	нА	ил	An	NA	
TITANIUM-TOTAL 01152	A	NA	A	NA.	A	А	A	<u></u>	D	0	A	
ZINC-TOTAL 01092	12,000	НΑ	30,000	Alf	600	26,000	130	С	D	S	,	
OIL AND GREASE 00550	АИ	NA	на	AN	MA	NA	Λи	Aii	::IA	ıιΛ	n/	

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B-2. (cont.)

CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

Intoks			·		Discharge	<u>.</u>				•	
UNTREATED INTAKE NAT	Maximum O INTAKE NATE	NA THE PER TO A TH	AN SARAL PROCESS UNIT	OAIL A A POUNOS PER	AVERACONCENTRA	Tion State	CO. STATE CO. ST	STRIVOUS RASH	is it or in series	ronik's	
PARAMETER AND CODE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(1
PHENOLS 32730	Α	NA	А	NA	. A	A	A	С	D	s	А
SURFACTANTS 38260	ΙΙΑ	An	ИА	AH ·	nA	АИ	AM	на	IIΑ	HΛ	11
ALGICIDES* 74051	АИ	ΝА	NA ·	АИ	NA	NA	NA	АИ	NА	IΙΛ	11
CHLORINATED HYDRO- CARCONS* (EXCEPT PESTICIDES) 74052	NA	АИ	NA	NA NA	NA	нА	NA	NA	ΠA	All	N
PESTICIDES® 74053	NΑ	, NA	Аи	АИ	AM	ΝΑ	ИИ	iιΛ	ΙΙΛ	HA	N
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·											

^{*}Name specific compound(s) and fill in the required data for each. Use extra blanks at the end of the form and the "Romarks" space as necessary.

	1		Parric C				
NV NV	.		(0	ifice use emly)			
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6-3. RAPIRA	Cypue PARA	eters of h	IN RE VIATE	er and disc	BARAGE (Soo	Tan Ba	
Intake !				Disthuse	· İ	į į	
INVANTE E	Wrangar.	Enage loans	RATING VEARI	Sens Seams Seams	CONT	INUOUS INORITORING	
INTAKE ATED	Mrake Naren	(OA)(LY)	AC XEARI	TO SEARY	OUENCY.	"OFITORING	
PARANTEER ALD CODE	(1)	(2)	(3)	(4)	(5)	(G)	(7)
ALPHA-TOTAL 01501	NA .	ΝΛ	Аи		NA	NA	NA
ALPHA COUNTING ERROR 01502	NA	RЯ	NA		 NA	NA	NΛ
BETA-TOTAL 03501 .	NA .	NA	NA		NA	HA	АИ
DETA COUNTING ERROR 03502	NA .	NA .	NA .		NA .	NA	NA
GAMMA-TOTAL 05501	. NA	ΝA	NA		. NA	NA	. NA
GAMMA COUNTING ERROR 05502	NA NA	NA	NA	X	An	NA :	, NA
TRITIUM-TOTAL 070CO	NA	NA	NA NA		NA.	NA	- NA
TRITIUM COUNTING ERROR 07001	All	NA	NA		NA	NA	Аи
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3. Chi 4. Nite	fate – Bari ordec – Hoh kel & Potas	um Chloridd ir Method Siqum – Ato	te Grawine mic Absor	etric Pitaan Speci	i Eraphotama	ster turbidicies	:
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