



**KERR-McGEE CHEMICAL CORPORATION**

POST OFFICE BOX 55 • HENDERSON, NEVADA 89009

September 19, 1997

Ms. Brenda Pohlman  
Remediation Branch Supervisor  
Nevada Division of Environmental Protection  
555 East Washington, Suite 4300  
Las Vegas City, NV 89101



Dear Ms. Pohlmann:

Subject: KMCC Perchlorate Soil Sampling Plan

Attached is a sampling plan for investigation of perchlorate impact on soil at the Kerr-McGee Chemical Corporation's (KMCC) Henderson facility. Sampling is expected to be completed the first week in October 1997. As with groundwater sampling, which was done at the same facility, Nevada Division of Environmental Protection (NDEP) is invited to participate in this sampling and/or take split samples of the material collected by KMCC.

Please feel free to call me at (702) 651-2234 if you have any comments or questions. Thank you.

Sincerely,

Susan M. Crowley  
Staff Environmental Specialist

Attachment  
By certified mail

cc: ALDooley  
PSCorbett  
PBDizikes  
RHJones  
DAWard  
Doug Zimmerman (NDEP-Carson City)  
Robert Kelso (NDEP - Carson City)

RANapier  
TWReed  
FRStater  
MJPorterfield  
KBailey

smc\Perchlorate Soil Sampling Plan Rev 1.doc

KERR-McGEE CHEMICAL CORPORATION  
HENDERSON, NEVADA



# **PERCHLORATE SAMPLING PLAN**

## **HENDERSON FACILITY SOIL**

September 19, 1997

Prepared by Kerr-McGee Chemical Corporation

## SCOPE

Kerr-McGee Chemical Corporation (KMCC) plans to conduct field and analytical work at KMCC's Henderson, Nevada facility to provide information about KMCC facility soil impact by perchlorate ion. This sampling plan sets out the objectives and scope of the fieldwork and analyses to be performed. A report summarizing the results of the field work and analyses will be prepared and submitted to the Nevada Division of Environmental Protection (NDEP).

## OVERVIEW

The KMCC Site at Henderson, Nevada, occupies part of an industrial area known as the Basic Management Incorporated (BMI) complex (Complex). Figure 1 shows the location of the Facility. Plate 1 is a Facility map showing topographic features and the location of facility features including the stormwater collection system and the Beta ditch.

The Complex, including KMCC's property, is located in an unincorporated portion of Clark County, Nevada, and is completely surrounded by the City of Henderson. Originally sited and operated by the U.S. Government as a magnesium production facility, the Complex operated from August 1942 to November 1944 to support the war effort.

Following cessation of magnesium operations, a portion of the Complex was leased from the Government by Western Electrochemical Co. (WECCO) in 1945. In May 1945, WECCO entered into a contract with the Defense Plant Corporation (DPC) for the production of perchlorates at the facility. The plant was designed and operated for the Department of the Navy. One of the ten existing "Units" was rehabilitated for the production of perchlorates to support the World War II war effort. The conversion involved removal of magnesium cell lines and installation of Schumacher type chlorate and perchlorate cells along with other related equipment. By June or July of 1945, the plant was operating

even before the conversion was complete. However, the plant only operated for one month as production was stopped the day after V-J day. A clean-up program was initiated and the equipment was placed in standby condition.

Six months later, WECCO negotiated a lease with Reconstruction Financing Corporation (RFC), which had dissolved DPC. WECCO resumed operations in February 1946 for the production of chlorates and perchlorates for the commercial market. By 1952, WECCO had purchased various portions of the Complex. In 1955, WECCO merged with American Potash and Chemical Company (AP & CC). In 1962, AP & CC purchased the current ammonium perchlorate plant, sodium perchlorate plant, and half of the sodium chlorate plant from the Government. KMCC acquired AP & CC by merger in 1967. Later, KMCC acquired the remainder of the sodium chlorate plant. In addition to the production of chemical oxidizers, KMCC also produced manganese dioxide and boron-based products.

## SAMPLING LOCATIONS

Sampling locations were selected to provide information about perchlorate impact on facility soils. Locations are shown on Plate 1. Table 1 lists the locations to be included in the sampling effort.

Table 1. Soil Sampling Locations

Location	Description
1	Upgradient (off-site)
2	Upgradient (on-site)
3	North of Unit 4
4	North of Unit 5
5	Beta Ditch - east of Outfall 001 entrance
6	Beta Ditch - Outfall 001 entrance
7	Beta Ditch - North of D-2
8	Beta Ditch - North of AP-2
9	Beta Ditch - Eastern plant boundary
10	BMI siphon
11	South of M-37

Soil samples will be taken at the surface, and at 6 inches and 12 inches below surface grade. Samples taken from the surface and 6 inches below surface will be analyzed as listed below. Samples taken from 12 inches below surface grade will be retained for later analysis. Please refer to the KMCC Phase II Work Plan (Section 3) for surface and subsurface soil sampling protocols.

ANALYTICAL DATA

The general quality indicator, soil pH, will be determined for each sampling location. In addition, concentrations of perchlorate and chlorate ions will be determined. Table 2 lists the Methods to be used for each analyte.

Table 2. Methods of Analysis

Analyte	Method	Expected Detect Limit
pH	SW-846, Method 9045	NA
Perchlorate Ion, >10mg/l	X1-C.7.5*	10 ppm
Perchlorate Ion, <10mg/l	SLR Method**	4 ppb
Chlorate Ion	X1-C.7.1*	1 ppm
* KMCC Internal Method		
** SLR Method - Determination of Perchlorate by Ion Chromatography, Rev 1		

DATA COLLECTION and QUALITY CONTROL

Please refer to the Data Collection and Quality Assurance Plan (DCQAP) portion of the KMCC Phase II Work Plan (Section 3) for protocols that will be used for field data collection and quality control. The following exception to this protocol should be noted:

- Samples will be obtained utilizing KMCC personnel without the assistance of ENSR.
- KMCC's laboratories will be utilized for all analytes.

PROJECT MANAGEMENT

KMCC personnel will coordinate the field related activities associated with this Work Plan. The work group is headed by Susan Crowley, Staff Environmental Specialist at KMCC's Henderson facility. Table 3 summarizes the key personnel for the project.

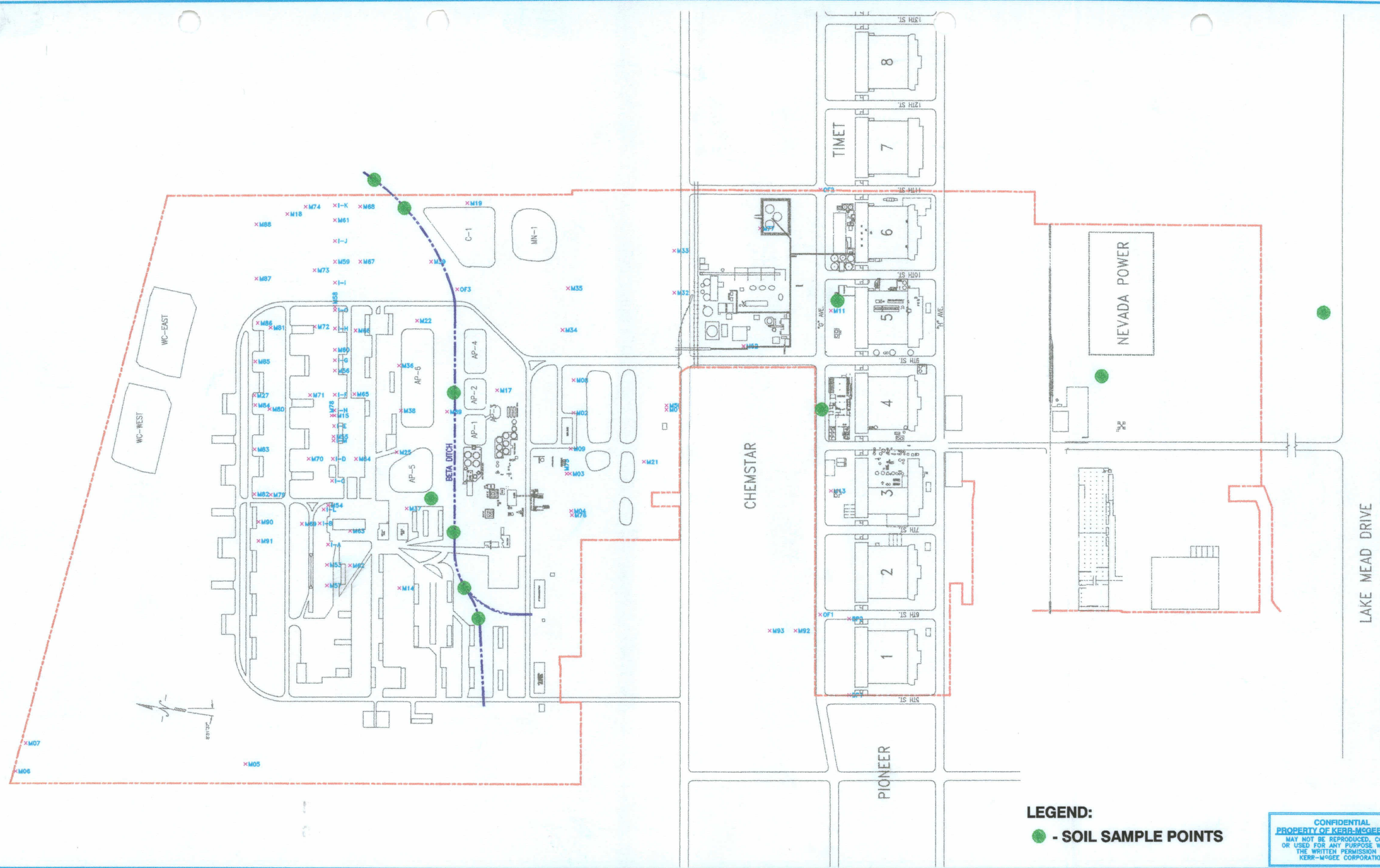
Table 3. Key Personnel

Title	Location	Name, Phone
KMCC Project Manager	KMCC, Henderson	Susan M. Crowley (702) 651-2234
Site Health & Safety Officer	KMCC, Henderson	Greg B. Cowley (702) 651-2228
Managing Hydrogeologist	KMC, Oklahoma City	Tom W. Reed (405) 270-2654
Regulatory Consultant	KMC, Oklahoma City	Russ Jones (405) 270-2665
Legal Council	KMC, Oklahoma City	Pam Dizikes (405) 270 2878

HEALTH AND SAFETY

Please refer to the Health and Safety (HSP) portion of the KMCC Phase II Work Plan (Section 5) for protocols that will be used during this sampling effort.

U:\BUCO\DWG\Inprog\PLATE1.dwg Mon Sep 22 09:23:29 1997



**LEGEND:**  
 ● - SOIL SAMPLE POINTS

CONFIDENTIAL  
 PROPERTY OF KERR-MCGEE CORP.  
 MAY NOT BE REPRODUCED, COPIED,  
 OR USED FOR ANY PURPOSE WITHOUT  
 THE WRITTEN PERMISSION OF  
 KERR-MCGEE CORPORATION

TOLERANCE UNLESS OTHERWISE SPECIFIED		FRACTIONS ±	
		0.00 ±	0.000 ±
REV	DESCRIPTION	BY	DATE



**KERR-MCGEE CHEMICAL CORP.**

P.O. BOX 55 HENDERSON, NEV. 89015-0055

AFE No. \_\_\_\_\_ JOB No. \_\_\_\_\_

APPROVED FOR CONSTRUCTION				DESIGN			
BY	DATE	BY	DATE	BY	DATE	BY	DATE
SAFETY		PROCESS ENGR.		DRAWN BY	GM BUCO	9/12/97	
ENVIRONMENTAL		PROJECT ENGR.		PROJ. ENGR.			
OPERATIONS MNGR.		ENGR. MNGR.		ENGR. MNGR.			
PRODUCTION SUPT		PLANT MNGR.					
GLTY. CONTROL							

DATE: \_\_\_\_\_  
 SCALE: 1"=200'-0"

PLATE 1  
 HENDERSON PLANT  
 PERCHLORATE SOIL SAMPLING

DRAWING NO.  
**PLATE-1**

SHEET  
 1  
 OF  
 1  
 REVISION  
 A

Drawing: / Date: / Time: