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Transwestern Pipeline Company
TECHNICAL OPERATIONS
P. O. Box 1717 • Roswell, New Mexico 88202-1717

October 22, 1992

Mr. Ed Horst
New Mexico Environmental Department
Hazardous and Radioactive Materials Bureau
525 Camino de los Marquez
Santa Fe, New Mexico 87502

IXII

Dear Mr. Horst:

As per our conversation on the above referenced date, enclosed find Transwestern Pipeline Company's sampling plan for testing of sites suspected of mercury contamination in the state of New Mexico. This plan has been developed to address mercury contamination concerns of federal lands administered by the Bureau of Land Management (see attached letter).

Upon approval, Transwestern will implement this plan at all suspected mercury contamination sites in the state. At the conclusion of this testing program, representatives of our company will schedule a meeting with your agency to discuss options to be administered in the remediation, if necessary of each contaminated site.

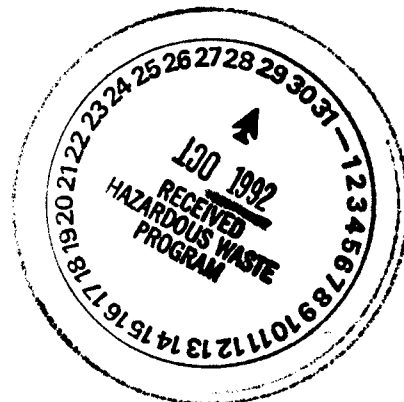
Should you require any additional information, contact me at our Roswell Technical Operations Office at 625-8022.

Sincerely,

Larry Campbell

Larry Campbell
Compliance Environmentalist

xc: Doc Alpers
Lou Soldano
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**Transwestern Pipeline Company
Mercury Meter Site Remediation Work Plan**

Transwestern Pipeline Company (TW) in the past used mercury to measure the natural gas flow at some locations. Due to the concern that some of these meters could have released mercury to the environment, TW has developed this investigation and remediation plan. The field screening method utilizes an electronic mercury vapor analyzer (MVA).

The Mercury Vapor Analyzer

The instrument to be used for the field screening is the Jerome 411 MVA or equivalent. This MVA will be used for a qualitative check to determine the presence or absence of mercury vapor. Specifications for the instrument are:

Range - 0.000 to 1.999 mg/m³
Detection Limit - 0.003 mg/m³
Accuracy - +/- 5% at 0.107 mg/m³
Precision - 5% Relative Standard Deviation at 0.107 mg/m³

Calibration and maintenance procedures and frequency will be in accordance with the MVA manufacturer's recommendations. A copy of the operation and calibration manual can be furnished on request.

The Field Screening Method

- A. The initial field screening will be taken using the MVA. It will be used to determine the presence of mercury vapor in the meter house prior to removal and to determine the presence of non-visible mercury in the soil prior to any excavation. The air in the meter house will be checked at both head height and at ground level.

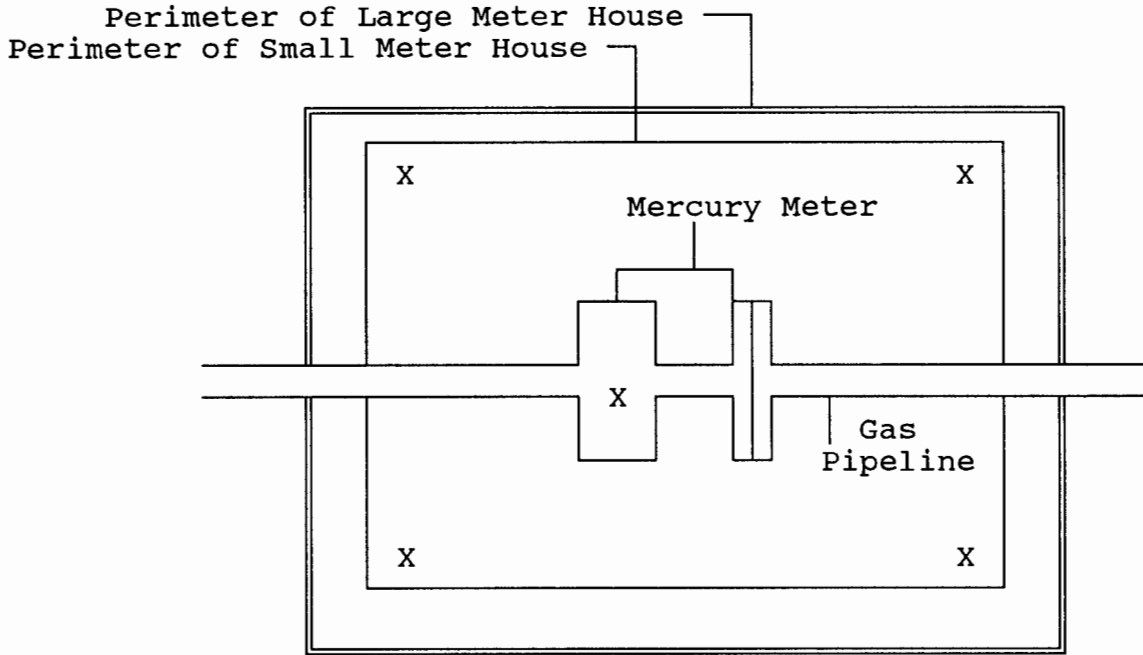
Once the ambient air has been sampled, the soil screening will then be done using a length of plastic tubing connected to a small funnel. The funnel will be inverted on the surface of the soil, and the sample pulled into the MVA. Results from the ambient air sampling and the soil screening will be recorded on the Meter Site Activity Form (Attachment 1). During cold weather, the soil samples will be placed in Pyrex glass containers and heated to increase the mercury volatility.

- B. If no contamination is found at the surface, the soil will be turned over to a depth of 10 inches using a shovel. The turned soil will be mixed and a second screening conducted.
- C. If no contamination is found following testing of the turned soil, composite samples will be collected at the points identified in Figures 1 and 2 below, and sent to a contract laboratory for analysis to confirm that the site is clean. No contamination during the MVA screening is defined as any detectable reading in the 10 second sweep mode of operation for the MVA.

If contamination is found, the remediation plan Decision Chart in Figure 3 will be followed. The clean up levels for remediation will be *15 parts per million (ppm) total mercury at locations in or within one mile of any community, or *140 ppm for all sites in remote areas.

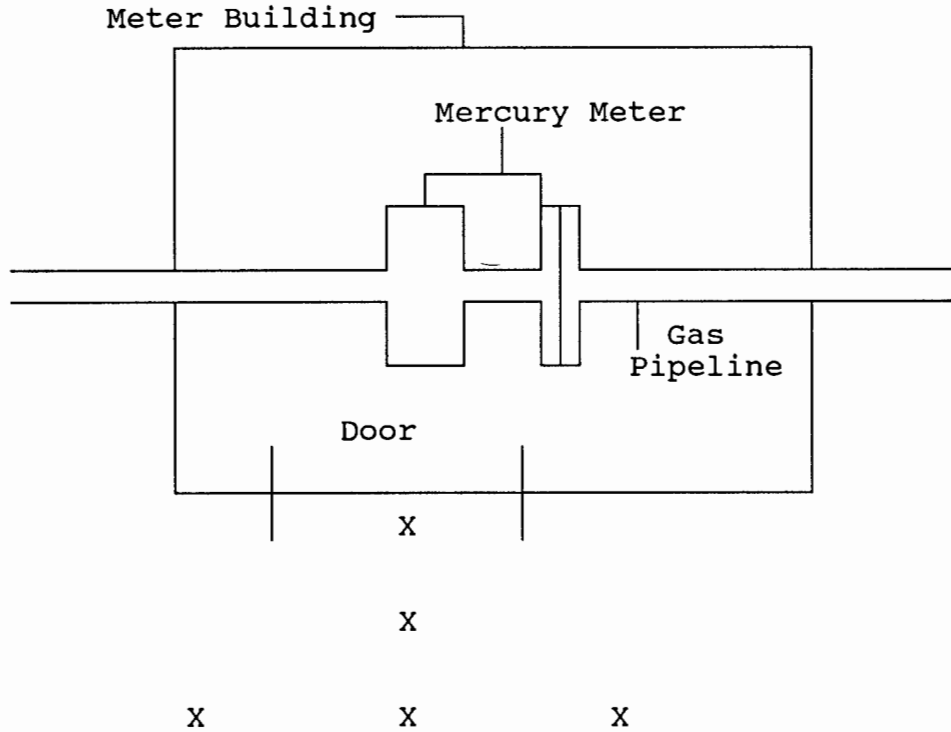
- D. The action level is defined as any measurable reading on the MVA or, a confirmation sample from the laboratory which exceeds the appropriate location clean up levels of 15 ppm or 140 ppm total mercury.
- E. If the confirmation sample from the laboratory indicates mercury levels below the action level, the site will be considered to be clean, requiring no further activity.

Figure 1 - Sample Points for Verification Samples for Meter Sites with Wooden Floors, or Without Floors



X - Sample Collection Points for Composite - one below the meter, and one from each of the meter house corners. The corner samples will be collected approximately six inches from the walls.

Figure 2 - Sample Points for Verification Samples for Meter Sites with Concrete or Steel Floors



X - Sample Collection Points for Composite - one at the door, one foot outside the door, and three equally spaced two feet outside the door, and two feet apart.

Figure 3 - Corrective Action Decision Chart

TEST RESULTS / OBSERVATIONS	ACTIVITY REQUIRED
Visible Mercury Found	Remediate Site
MVA Tests Positive	Remediate Site
Remediation Complete	Collect Verification Sample
MVA Tests Negative	Collect Verification Sample
Lab Tests Exceed Action Level	Remediate Site
Lab Tests Negative	No Further Action Required

Remediation Activities

- A. Prior to any necessary remediation activity, gas supply wells feeding the site will be shut in and the meter facility will be depressurized. To prevent accidental spread of any contamination, the field crew leader will establish three work control zones (Exclusion, Decontamination, and Support Zones). The crew leader will then check the meter house with an explosive gas detector to ensure no gas vapors are present in explosive concentrations. In areas known to produce Hydrogen Sulfide, the meter house will also be tested for presence of H₂S in harmful concentrations. The crew leader will then enter the meter house to inspect for any mercury which could be dislodged and spilled when the house is removed.
- B. The meter house will then be removed from the meter setting to allow excavation of the contaminated soils. If no mercury was observed in or on the meter house, it will be stored on plastic in the Contamination Reduction Zone. Any visible mercury on the floor of the meter house will be collected and stored in a properly labeled container for recycling.
- C. Contaminated soils will be removed using shovels where possible. A backhoe will be used only at those sites where the depth of the excavation exceeds five feet. Soils and other solid wastes collected for disposal will be stored either in steel drums, plastic lined fiberglass bags, or palletized fiberboard containers. The packaging used at each site will be based on the volume of material recovered at the site. Once all visibly contaminated material has been removed, the site will again be tested using the MVA field screen. Excavation will continue until the MVA readings are less than the action level. At that point a confirmation sample will be collect in accordance with Figure 1.
- D. The excavation will be lined with plastic sheeting, and refilled with clean soil. The plastic lining will help define the extent of the excavation should the confirmation samples indicate further soil removal is required.
- E. The meter house will be reinstalled, and the meter returned to service. Since mercury meters are no longer used on the TW system, no lining or containment below the meter setting is required, since there is no source for future contamination of the site.

- F. Reusable equipment such as shovels will be decontaminated in the Contamination Reduction Zone, and the cleaners and sorbents used will be collected for disposal with the contaminated soils. Disposable items such as gloves and tyvek coveralls will be disposed of with the soils as well.

- G. Solids collected for disposal will be transported by TW vehicle to a central location and transferred to a roll off disposal boxes for storage. When the roll off box is filled it will be transported to a hazardous waste disposal site permitted by the EPA to handle mercury contaminated solids.

Documentation

The following documents will be completed for each site, and maintained at the TW Roswell, New Mexico technical office.

- A. Meter Site Activity Form (Attachment 1)

The Meter Site Activity Form will be used to record all MVA readings, visual inspection observations, and sampling and excavation activities. The back of the form will be used to sketch the extent of the excavation and the sample locations. If verification samples indicate further excavation is required, a new form will be used to document that activity.

- B. Field Sample Logbook (Attachment 2)

All samples will be documented in the Enron Field Sample Logbook. Required information includes sample ID number, date, time, sample location, and the type of analysis requested. The sample log will also record the ambient air temperature and the soil temperature for each sample. Each sample log page will be initialed by the sampler.

- C. Chain of Custody Document

Each sample will be properly identified on a chain of custody document. The receiving laboratory will sign for the samples on the custody document, and return a signed copy to TW.

Sample Quality Assurance / Quality Control (QA/QC)

The following table summarizes the QA/QC to be required for both field activities and laboratory analytical work.

Field QA/QC

1. MVA field calibration is to be performed daily. Factory service will be performed at intervals recommended by the manufacturer, or at any time instrument performance is suspect.
2. Samples will be collected in 8 ounce large mouth bottles supplied by the contract laboratory.
3. One duplicate (split) sample will be collected for every 20 verification samples
4. One blank (clean backfill soil) sample will be prepared for every location.
5. One "equipment blank" will be taken each day to verify proper decontamination of tools and equipment.
6. One trip blank will be included for each lot of samples sent to the laboratory.

Laboratory QA/QC

1. All analyses will be performed using U.S. EPA methods, or their equivalent or better. Total mercury analyses will be performed using U.S. EPA Method 245.
2. Accuracy, precision and completeness requirements as set forth under the U.S. EPA Contract Laboratory Program will be followed. Contract laboratories will submit their standard operating procedures for mercury analysis to TW prior to any analytical work.
3. Spike Samples - the laboratory will include one spike sample analysis for every 10 samples received. Spikes will be prepared according to EPA Contract Laboratory protocols. Spike recovery on all chromatographic analyses must be within 90% to 110% of the actual known spike concentration.
4. Duplicate Samples - the laboratory will run as a duplicate sample a separate extraction and analysis of one randomly selected sample for every 20 samples received. The duplicate analysis must agree with the original analysis of the selected sample within +/- 25%.

5. The laboratory will appoint a Project Manager who is responsible to review all QA/QC data, including sample receiving logs, to ensure the quality and accuracy of the data.
6. When QA/QC review indicates that unacceptable data is being produced, the Project Manager will initiate a review of all analytical procedures, instrument calibration, standards preparation procedures, and data reduction methods to determine the source of the faulty data. Analytical work will not resume until the necessary corrections have been made.

Record Keeping

All project records will be maintained at the Roswell technical operations office for a period of three years following completion of all remediation projects.

Remediation Considerations

At this time, Transwestern Pipeline is pursuing options other than removing the mercury contaminated soil for disposal as a hazardous waste. Transwestern is actively involved with several companies which are utilizing a process of washing the mercury from the soil and collecting the mercury as a recoverable product. This will eliminate any hazardous waste considerations and allow the cleaned soil to be returned to the site upon removal of the mercury.

It is anticipated in the near future that this recovery technique will be in operation at each site which has mercury contamination above target levels established by the State of New Mexico Environmental Department.

