StId 1715
November 13, 1996

W/P to be implemented on 12/13/96

Aimee L. West Trust et al
c/o Geoffrey C. Etnire
4900 Hopyard Rd
Pleasanton CA 94588

W.J. Inglhofer
The Goodyear Tire & Rubber Company (214)637-9208
7301 Ambassador Row
PO Box 660245
Dallas TX 75266-0245

Subject: Former Merritt Tire Sales, 3430 Castro Valley Blvd., Castro Valley, CA

Dear Messrs. Etnire and Inglhofer:

This office has completed a review of EMCON's *Workplan for Expanded Assessment and Risk Based Corrective Action*, dated November 11, 1996, for the subject site. This workplan is acceptable. Please incorporate the following additions/comments into the workplan:

1. In order to confirm the composition of the floating product and that the HVOCs detected in groundwater in the vicinity of monitoring well MW-3 are a result of a release from the former waste oil underground storage tank, please have the floating product analyzed for the following constituents: TPH-G and BTEX (EPA method 5030/8015), TPH-D and motor oil (EPA method 3550/8015), HVOCs (EPA method 8010 or 8240), and semi-volatile organic hydrocarbons (SVOCs) (EPA method 8270). This request was initially made in our letter to you dated August 22, 1996; however to date, we have not received results or confirmation that these analyses were performed at the site.

2. Monitoring wells must be surveyed to an established benchmark (i.e. mean sea level) with an accuracy of 0.01 foot.

3. If a RBCA Tier 2 evaluation is anticipated, you may want to consider collecting site specific data (e.g. total organic carbon and soil porosity and density) to assist in a RBCA Tier 2 evaluation as part of the proposed field activities for the expanded assessment.

A final report describing this investigation is due to this office no later than February 5, 1997. Please feel free to call me at (510)567-6755 if you have any questions or comments.

Sincerely,

Amy Leech
Hazardous Materials Specialist

c: John Young, EMCON, 1921 Ringwood Ave., San Jose, CA 95131-1721
Bertram Bell, Goodyear Tire & Rubber Co., Law Dept., 1144 E Market St., Akron OH 44316
Bob Chambers, Alameda County District Attorney's Office
Ed Laudani, Alameda County Fire Department
ALL/ File

EMCON
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Ok per letter dated 11/13/96

ENVIRONMENTAL PROTECTION
96 NOV 13 AM 9:28

5 NV
1715

November 11, 1996
Project 22148-001.001

Ms. Amy Leech
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94502

Re: Workplan for Expanded Assessment and Risk Based Corrective Action at Former Merritt Tire Sales, 3430 Castro Valley Boulevard, Castro Valley, California

Dear Ms. Leech:

EMCON, on behalf of Goodyear Tire and Rubber Company (Goodyear), is pleased to submit this workplan for expanded assessment and risk-based corrective action (RBCA), at the above referenced facility (Figure 1). EMCON proposes to perform a limited down-gradient assessment to determine the extent of petroleum hydrocarbons in groundwater. The assessment will consist of collecting subsurface soil samples and installing a shallow zone monitoring well using direct-push drilling methods (Figure 2). Following completion of the expanded assessment, EMCON will perform a RBCA to determine an acceptable level of residual hydrocarbons to remain at the Site without posing a risk to current and future on-site receptors. EMCON has outlined below the scope of work proposed for the month of December 1996. In addition, EMCON will continue a groundwater monitoring program, as outlined in your letter dated August 22, 1996.

2 qtrly for MW-3

SCOPE OF WORK

Prefield Activities

EMCON proposes to drill 3 to 5 soil borings and install one groundwater monitoring well (Figure 2). Before initiating field activities, EMCON will obtain a monitoring well permit from Alameda County Flood Control and Water Conservation District. A health and safety plan will be prepared before starting field activities to ensure safe work practices at the Site.

Field Activities

EMCON will secure a licensed subcontractor to perform direct-push drilling in the locations proposed in Figure 2. The location of these borings may change depending on the findings determined during field activities. Soil samples will be screened in the field utilizing a photo ionization detector (PID). Borings will be pushed to an approximate depth of 10 feet below grade (fbg). Soil samples will be collected at 3 fbg and at the groundwater interface (≈5 feet). Soil samples will be placed on hold with a certified laboratory pending review of field screening results.

Groundwater monitoring well MW-4 will be completed in one boring to a depth of 15 fbg. The well will consist of 1-inch diameter polyvinylchloride (PVC) casing and approximately 10 feet of 0.020-inch screen. Filter pack will be determined in the field to best match soil type to provide maximum well efficiency. After well installation, EMCON will develop and sample the well according to Alameda County Health Care Services Agency (ACHCSA) guidelines. Procedures for drilling exploratory borings, installing a groundwater monitoring well , developing a groundwater monitoring well, and collecting groundwater samples are outlined in Attachment A, "Field and Laboratory Procedures." Groundwater sampling activities will be coordinated with quarterly groundwater monitoring and sampling of well MW-3. EMCON will notify ACHCSA 48 hours in advance of field activities.

Laboratory Analyses

Groundwater samples collected from wells MW-3 and MW-4 will be analyzed for total petroleum hydrocarbons as gasoline (TPHG), benzene, toluene, ethylbenzene, and xylenes (BTEX) [EPA methods 5030/8015/8020], and total petroleum as diesel (TPHD)[DHS Luft]. Method detection limits for TPHG, TPHD, and BTEX are 50 µg/l, 50 µg/l and 0.5 µg/l, respectively. In addition, groundwater samples will be analyzed for total recoverable petroleum hydrocarbons (TRPH)[EPA method 418.1], halogenated volatile organic compounds (HVOCs)[EPA method 8010], and semi-volatile organic hydrocarbons (SVOCs)[EPA method 8270].

Risk-Based Corrective Action

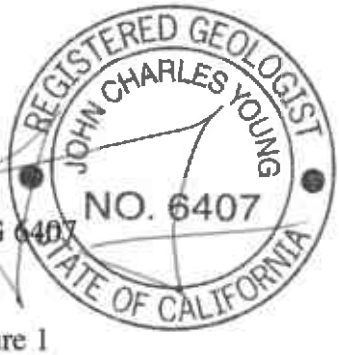
Following field activities, EMCON will perform a RBCA Tier I evaluation to identify probable exposure pathways and compare Site conditions to risk-based screening levels (RBSLs). If Site concentrations are greater than the RBSLs, EMCON will recommend a Tier II evaluation be performed to determine site specific target levels (SSTLs). The

results of the Tier I, and/or Tier II evaluation will be submitted in a report of findings along with the results of the expanded assessment.

Please call if you have questions.

Sincerely,

EMCON



John C. Young, RG 6407
Project Manager

attachments: Figure 1
Figure 2
Attachment A - Field and Laboratory Procedures

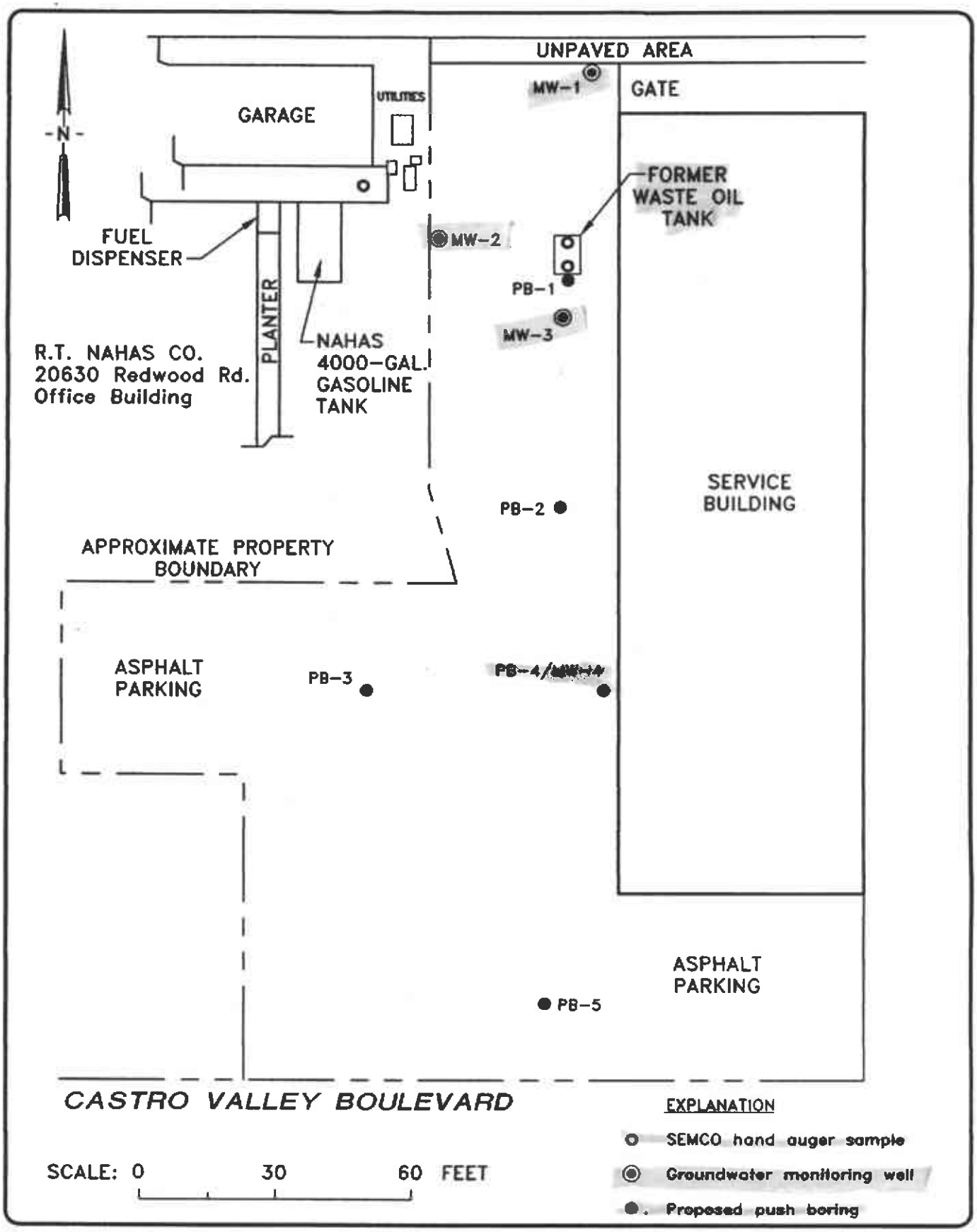
cc: Joe Smerglia, Goodyear

EMCON

GOODYEAR TIRE & RUBBER
GOODYEAR SERVICE CENTER NO. 9578
ADDITIONAL SUBSURFACE INVESTIGATION
CASTRO VALLEY, CALIFORNIA

SITE LOCATION

FIGURE
1
PROJECT NO.
2148-001.001



EMCON

GOODYEAR TIRE & RUBBER
GOODYEAR SERVICE CENTER NO. 9578
ADDITIONAL SUBSURFACE INVESTIGATION
CASTRO VALLEY, CALIFORNIA

SITE PLAN

FIGURE 2

PROJECT NO. 2148-001.001

ATTACHMENT A

FIELD AND LABORATORY PROCEDURES

GROUNDWATER WELL INSTALLATION

GROUNDWATER WELL INSTALLATION

Well permits are obtained from local and state regulatory agencies preparatory to drilling exploratory borings that will be completed as groundwater wells.

The exploratory borings to be converted to verification monitoring wells or extraction wells are drilled no deeper than 20 feet into saturated soil, or until a layer at least 3 feet thick of relatively impermeable clayey material (aquitard) is encountered, whichever comes first. If the aquitard is sufficiently thick, it is backfilled with bentonite through a tremie pipe. Borings are converted to verification monitoring wells with 2-inch-diameter, flush-threaded, polyvinyl chloride (PVC) casing with a screened section of machine-perforated, 0.020-inch slots. For extraction wells, the boring is reamed with a 12-inch-diameter auger, and 6-inch-diameter casing is installed inside the enlarged borehole.

Boring depths and screen lengths are determined from geologic profiles of the boring. Screened sections of casing extend through the saturated interval as much as 5 feet above first-encountered groundwater. A well is completed by the placement of various materials in the annular space around the casing. The annulus is filled to approximately 2 feet above the screen with a sand pack of a grain size predetermined by sieve analysis of the soil. The sand pack is covered with a bentonite plug at least 1-foot thick, and the remaining annular space is sealed within 1 foot of the surface with a sanitary seal of neat cement in compliance with regulatory guidelines. The wells are completed to ground surface with PVC casing. The well heads are protected with traffic-proof vault boxes set in concrete and capped with water-tight locking devices. Well locations are surveyed and top-of-casing elevations measured to the nearest 0.01 foot. Detailed well completion diagrams are prepared. Water well drillers' reports containing geological data, well locations and construction details are submitted to the California Department of Water Resources.

GROUNDWATER SAMPLING AND ANALYSIS

GROUNDWATER SAMPLING AND ANALYSIS

EMCON's sampling and analysis procedures for water-quality monitoring are designed to provide consistent and reproducible results and ensure that the objectives of the monitoring program are met.

The following publications were used as guidelines for developing these procedures:

- Procedures Manual for Ground-Water Monitoring at Solid Waste Disposal Facilities (EPA-530/SW-611, August 1977)
- RCRA Ground-Water Monitoring Technical Enforcement Guidance Document (OSWER 9950.1, September 1986)
- Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (EPA SW-846, 3rd edition, November 1986)
- Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater (EPA-600/4-82-057, July 1982)
- Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020, revised March 1983)

Sample Collection

Sample collection procedures include equipment cleaning, well purging, and water-level, floating-hydrocarbon thickness, and total well-depth measuring.

Equipment Cleaning

The bottles, caps, and septa used to hold samples for volatile and semivolatile organic analysis are triple-rinsed with high-purity deionized water and dried overnight, the bottles at 200°C, the caps and septa at 60°C. The bottles, caps, and septa are protected from solvent contact between drying and use at the site.

The plastic bottles and caps used to hold samples for metals analysis are soaked overnight in a 1 percent nitric acid solution, triple-rinsed with deionized water, and air-dried.

Equipment for sampling groundwater (i.e., pumps, bailers, etc.) is first disassembled, cleaned thoroughly with diluted detergent, and steam-rinsed with deionized water. Parts such as plastic pump valves and bladders, which may absorb contaminants, are cleaned before each use or replaced. The inside of the positive-displacement (bladder) pump tubing is cleaned overnight with a low-flow, inert air source heated to 120°C.

A pump blank made of organic-free water is pumped through the clean bladder-pump assembly, and the resulting effluent is sampled and analyzed by EPA Method 601 or 602. Analytical results must be below the method reporting limit for each constituent analyzed before the pump is used at the site.

The surfaces of well equipment that comes in contact with groundwater during well purging and sampling are steam-cleaned with deionized water between each use.

Water-Level, Floating Hydrocarbon, and Total Well-Depth Measurements

Water levels, floating-hydrocarbon thickness, and total well-depth are measured before wells are purged and sampled. An electric sounder, a bottom-filling, clear Teflon· bailer, or an oil-water interface probe is used to make these measurements. The electric sounder is a transistorized instrument with a reel-mounted, two-conductor, coaxial cable which connects the control panel to the sensor. The cable is stamped in 1-foot increments. The sensor is lowered into the well and as it makes contact with the water, which acts as an electrolyte, a low-current circuit is completed. The current is amplified and fed into an indicator light and an audible buzzer, which produce a signal as the sensor touches the water. A sensitivity control compensates for highly saline or conductive water. The sounder is decontaminated after each use with a deionized-water rinse. The bailer is lowered to a point just below the liquid level, retrieved, and inspected for floating hydrocarbon.

Alternately, an oil-water interface sonic probe can be used to measure floating-hydrocarbon thickness. The probe emits a continuous tone when immersed in a nonconductive fluid, such as oil or gasoline, and an intermittent tone when immersed in a conductive fluid, such as water. Fluid levels are recorded relative to which tone is emitted. The sonic probe is decontaminated after each use with a deionized-water rinse.

Fluid measurements are recorded to the nearest 0.01 foot in a field logbook. The groundwater elevation at the monitoring wells is calculated by subtracting the measured depth to water from the surveyed top-of-casing elevation. When possible, depth to water is measured in all wells on the same day. Water levels are converted to elevations above mean sea level (MSL) and contoured on a groundwater map. Total well depth, recorded to the nearest 0.5 foot, is measured by means of an electric sounder which is lowered to the bottom of a well. This measurement is used for calculating purge volumes and determining the degree to which silt may have obstructed the well screen.

Well Purging

Before a monitoring well is sampled, it is purged of standing water in the casing and gravel pack by one of several devices: a bladder pump, a pneumatic displacement pump, a centrifugal pump, or a Teflon bailer. Water will be evacuated from the well until the amount equals the calculate purge volume (as shown in Monitoring Well Purging Protocol, Figure 3), which will allow indicator parameters to stabilize, or until the well is evacuated to practical limits of dryness, if this occurs before the calculated purge volume is removed. These low-yield monitoring wells are allowed to recharge until the volume of water is sufficient for sampling, but not longer than 24 hours. If insufficient water has recharged after 24 hours, a monitoring well is recorded as dry for the sampling event.

The pH, specific conductance, and the temperature meter are calibrated daily before field activities are begun. Meter calibration is checked daily during field activities to verify performance. Field measurements are recorded on a water-sample field-data sheet (Figure 4) and kept in a waterproof logbook. Data sheets are reviewed by the sampling coordinator at the end of the sampling event.

Well Sampling

A Teflon bailer or a bladder pump is the only acceptable equipment for well sampling. When samples are collected for volatile organic compound (VOC) analysis with a bladder pump, the pump flow is regulated to approximately 100 milliliters per minute to minimize pump-effluent turbulence and aeration. Samples for VOC analysis are preserved in 40-milliliter glass bottles (or larger), which are fitted with Teflon-lined septa. The bottles are filled completely to force out air and to aid in forming a positive meniscus. Bottles are capped with convex Teflon septa to seal out air, and are inverted and tapped to verify that no air bubbles remain. Containers of samples to be analyzed for other constituents are filled, filtered as required, and capped.

When required, an appropriate field-filtration technique is used to determine dissolved concentrations of metals. When a Teflon bailer is used, the contents are emptied into a pressure transfer vessel. A disposable 0.45-micron acrylic copolymer filter is threaded onto the transfer vessel at the discharge point and the vessel is sealed. The vessel is pressurized with a hand pump and the filtrate directed into appropriate containers. Each filter is used once and discarded.

When a bladder pump is used to collect samples for dissolved constituents, a sample is filtered through a disposable 0.450-micron acrylic copolymer filter attached directly to the pump effluent line with a pressure fitting. As the pump cycles, the effluent is pressured through the filter and directed into an appropriate container. Each filter is used once and discarded.

Sample Preservation and Handling

Procedures for handling and preserving samples are consistent with the guidelines referenced in the Introduction. Sample containers vary depending on the type of analysis required (e.g., volatile organics, hydrocarbons, or dissolved metals) and are nonreactive with a given chemical.

Sample Handling

Sample containers are labeled immediately after sample collection, and are kept on cold packs which are replaced daily until the containers are received at the laboratory. As a sample is collected, it is logged on the chain-of-custody record that accompanies samples to the laboratory.

Samples are transferred from the site to EMCON's laboratory by the sampling team. Laboratory personnel assign a different number to each sample container and the number is recorded on the chain-of-custody record and used to identify the sample on all subsequent internal chain-of-custody and analytical records. Within 24 hours of sample receipt, samples are routinely shipped from EMCON to laboratories performing the selected analyses. EMCON's laboratory manager ensures that the holding times for requested analyses are not exceeded.

Sample Documentation

The procedures for sample handling provide chain-of-custody control from collection through storage. Sample documentation includes the following:

- Field logbooks for documenting sampling activities in the field
- Labels for identifying individual samples
- Chain-of-custody records for documenting possession and transfer of samples
- Laboratory analysis requests for documenting analyses to be performed

Field Logbook

In the field, the sampler records the following information on the water sample field data sheet (Figure 4) for each sample:

- Project number
- Client name
- Location
- Sampler's name

- Date and time
- Well accessibility and integrity
- Pertinent well data (e.g., casing diameter, depth to water, well depth)
- Calculated and actual purge volumes
- Purging equipment
- Sampling equipment
- Appearance of each sample (e.g., color, turbidity, sediment)
- Results of field analyses (temperature, pH, specific conductance)
- General comments

The field logbooks are signed by the sampler.

Labels

Sample labels contain the following information:

- Project number
- Sample number (i.e., well designation)
- Sampler's initials
- Date and time of collection
- Type of preservative used (if any)

Sampling and Analysis Chain-of-Custody Record

The sampling and analysis chain-of-custody record (Figure 1), initiated at the time of sampling, includes the well number, sample type, analytical request, date of sampling, the name of the sampler, and other information deemed pertinent. The sampler signs his name and records the date and time on the record sheet when transferring the samples to another person. Custody transfers are recorded for every sample; for example, if samples are split and sent to more than one laboratory, a record sheet accompanies each sample. The number of custodians in the chain of possession is kept to a minimum. A copy of the sampling and analysis chain-of-custody-record is returned to EMCON with the analytical results.

Groundwater Sampling and Analysis Request

The Groundwater Sampling and Analysis Request or the purchase order that accompanies samples to the laboratory serves as official communication of the particular analysis(es) required for each sample and is evidence that the chain of custody is complete (Figure 5).

At a minimum, the groundwater sampling and analysis request includes the following:

- Date submitted
- Specific analytical parameters
- Well number
- Sample source

Analytical Methods

Samples collected as part of the proposed monitoring programs are analyzed by accepted analytical procedures. The following publications are the primary references:

- Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020, revised March 1983)
- Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater (EPA-600/4-82-057), July 1982)
- Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods (EPA SW-846,3rd edition, November 1986)
- Leaking Underground Fuel Tank (LUFT) Manual, State Water Resources Control Board, State of California Leaking Underground Fuel Tank Task Force, May 1988

The laboratories performing the analyses are certified by the Department of Health services (DHS) for hazardous waste testing.

Quality Control

Quality assurance measures confirm the integrity of field and laboratory data generated during the monitoring program. Procedures for assessing data quality are discussed in this section. Field and laboratory quality assurance data are evaluated in the technical reports.

Field Quality Assurance

Field quality assurance for each monitoring event includes the documentation of field instrument calibration and collection and analysis of trip blanks, field blanks, and duplicate samples. Split samples may also be included in the monitoring program.

Trip and Field Blanks

Trip and field blanks are used to detect contamination introduced through sampling procedures, external field conditions, sample transportation, container preparation, sample storage, and the analytical process.

Trip blanks are prepared at the same time and location as the sample containers for a given sampling event. Trip blanks accompany the containers to and from that event, but are never opened or exposed to the air. One trip blank for volatile organic parameters is typically included for each sampling event.

Field blanks are prepared in the same manner as trip blanks, but are exposed to the ambient atmosphere at a specific monitoring point during sample collection for the purpose of determining the influence of external field conditions on sample integrity. One field blank for volatile organic parameters is typically included for each day of sampling.

Duplicate Samples

Duplicate samples are collected so that field precision can be documented. For each sampling event, a specified percentage(typically 5 percent) of monitoring well samples is collected in duplicate. Where possible, field duplicates are collected at sampling points known or suspected to contain constituents of interest. Duplicates are packed and shipped blind to the laboratory to be analyzed with the samples from that particular event (i.e., duplicates have no special markings indicating that they are quality control samples).

Laboratory Quality Assurance

Laboratory quality assurance includes procedures required under the DHS Hazardous Waste Testing Program. For sites where Columbia Analytical Services conducts the chemical tests, its quality assurance procedures include the reporting of surrogate recoveries, matrix spike recoveries, and matrix spike duplicates (or duplicate) results.

Method blanks are analyzed daily for the purpose of assessing the effect of the laboratory environment on analytical results, and are performed for each constituent analyzed.

Samples to be analyzed for organic constituents contain surrogate spike compounds. Surrogate recoveries are used to determine whether analytical instruments are operating within limits.

Surrogate recoveries are compared with control limits established and updated by the laboratory on the basis of its historical operation.

Matrix spikes are analyzed at a frequency of approximately 10 percent. Matrix spike results are evaluated to determine whether the sample matrix is interfering with the laboratory analysis, and provide a measure of the accuracy of the analytical data. Matrix spike recoveries are compared with control limits established and updated by the laboratory on the basis of its historical operation.

Laboratory duplicates are analyzed at a frequency of approximately 10 percent. Spike duplicate results are evaluated to determine the reproducibility (precision) of the analytical method. Reproducibility values are compared with control limits established and updated by the laboratory on the basis of its historical operation.

Laboratory QC data included with the analytical results are method blanks, surrogate spike recoveries (for organic parameters only), matrix spike recoveries, and matrix spike duplicates.

When other state-certified laboratories conduct the testing, each laboratory will follow its own internal QA/QC program.