



Amoco Production Company

Southeast Business Unit
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James F. Trickett
Manager, Environmental Safety & Regulatory Affairs

May 27, 1994

Ms. Linda K. Dansby
Division of Environmental Coordination
National Park Service
1220 S. St. Francis Drive
Santa Fe, NM 87504



Dear Linda:

Please find enclosed three copies of the work plan for the Amoco Production Company South Sprint facility that were requested by the National Park Service (NPS) in a letter dated March 18, 1994. Also enclosed is a compilation of all of the data that has been accumulated on the South Sprint project to date.

If you have any questions or comments concerning any of the enclosed material, please contact Mike Grimm at 713/366-3245.

Sincerely,


MAG/bl
Enclosures
cc: ✓ C. R. Farabee, Jr.

Superintendent
Padre Island National Seashore
9405 South Padre Island Drive
Corpus Christi, TX 78418-5597

Charles Ross, Director
Regulatory Enforcement
Oil and Gas Division
Railroad Commission of Texas
1701 North Congress
Austin, TX 78711

J. P. Schmitt, Manager
Attention: Heidi Tomich
Damage Assessment and Restoration Program
Pollution Cleanup Division
Texas Natural Resources Conservation Commission
P.O. Box 13087
Austin, TX 78711-3087

WORK PLAN

The South Sprint Gas Collection Facility is located on North Padre Island, about five miles southwest of the last beach access. The facility is a small, remote, gas collection, liquid/gas separation, and compression facility. The gas collected at this field is produced from two wells, one onshore and one offshore. The onshore well is located about 250 feet southeast of the facility. The offshore well and platform are located about one mile directly offshore in the Gulf of Mexico. The field produces an average of about 6 million cubic feet of gas per day (MCFD), 5 barrels of condensate per day (BCPD) and 3 barrels of water per day (BWPD). The produced water is stored on location and hauled away once a week by vacuum truck. The natural gas and condensate are both carried away from the site by pipeline. The wells were drilled in the late 1960's.

Attachment 1 is the 1993 Sara Title III report for the South Sprint facility. It contains a list of all the materials stored or used at this facility. The materials listed on this form, condensate, engine lube oil, natural gas, and methanol, are representative of all that has been and is currently present at this facility. The 500 gallon lube oil tank and the methanol storage tank are both on stands and have 80 mil lined containment.

The contamination was first discovered during routine soil sampling and analysis in March of 1993. This site, due to its location in an environmentally sensitive area and the permeable nature of the soil, was high graded by the South East Business Unit of APC based on a risk based re-prioritization of all of its properties. As the result of this internal initiative, a basic first pass environmental assessment (ie. soil sampling) was performed. Those soil samples, taken at various depths from eight locations and analyzed for TPH using EPA method 418.1 (see Core Lab report dated 2/17/93 and attached sketch map of locations in the attachment labeled Analyses), indicated that there were concerns. As a result, in June 1993, five groundwater and five soil samples were obtained to confirm the March findings. In an effort to limit the impact to the delicate environment surrounding, the groundwater samples were obtained using a hand operated hammer punch, and the soil samples using a hand auger. During this work, a yellow fluid was encountered on top of the groundwater in the area immediately adjacent to the tanks. This was immediately reported to the local Park Service office. A sample of this fluid, and also a sample of the natural gas condensate collected and stored at this facility were obtained and sent to the Amoco Corporation

Groundwater Management Section lab in Tulsa for identification. Comparison of the chromatograms from the two samples (see

Liquid Hydrocarbon Characterization dated July 28, 1993 in attachment labeled Analyses) indicated that the two fluids were similar. They both resemble a light crude or kerosene (the sample collected from off the top of the groundwater appears to be weathered and degraded).

As a result, a more detailed groundwater assessment was completed in August 1993 using the Geo hydropunch (see discussion in Sampling and Analysis Plan). A total of 31 groundwater samples were obtained. The results of the analyses are plotted on a map labeled BTEX Concentrations, Aug. 3, 1993 in the attachment labelled Maps.

The results presented on that map indicated that there were several areas where free phase hydrocarbons (fph) may exist on the groundwater. That area immediately surrounding the tank battery, and the old pit area. This was confirmed by a series of soil borings that were dug first to detect the presence of fph. The first areas where fph was confirmed were chosen as the first sites to begin remediation. Since there is no electricity at this location, a 12-volt product skimming system was devised and installed in the locations labelled RW-1, RW-2, and RW-3 in Dec. 1993 (see general site map, the first map in attachment labelled Maps for locations). Nine more soil borings were dug in locations shown on the map to have higher concentrations of BTEX (see map titled Historical Sample Locations). Three additional locations were picked for installation of the 12-volt skimming system. These last three were installed in Jan. 1994. To date, 131 gallons of fph's have been recovered (see attachment labeled Fluid Recovery Data).

In Feb. 1994, seventeen 1 1/2 inch monitor wells, one 2 inch vapor extraction well, and the air sparge well were installed (see general location map in the attachment labeled Maps). All installations were done by hand to minimize the impact to the surrounding environment. All of the monitor wells were pre-constructed of 1 1/2 inch pvc, nine feet long with six feet of screen. The vapor extraction well is constructed of two inch pvc, with 7 1/5 feet of screen and 2 1/2 feet of riser. The monitor wells and vapor extraction well were installed using either a two or five inch hand auger. They were completed using the native sand. The air sparging well is constructed of one 3 foot long 1 1/4 inch well point (screen) and eight 33 inch long joints of 1 1/4 inch galvanized pipe. The sparge well

was driven by hand to a depth of 22 feet. Soil samples were collected during the monitor well installation (see Sampling and Analysis Plan).

In March 1994, a 36 hour pilot air sparge/soil vapor extraction was completed. A horizontal vapor extraction well, 12 feet long was installed to a depth of about 2 1/2 feet. This was done to optimize the effects of the vapor extraction in light of the shallow groundwater conditions that exist at this site. The pilot started by first running just the vapor extraction. Then just the air sparging, followed by the combination of both. Observations that can be made at this time are: 1) the soil vapor extraction, due to the shallow nature of the groundwater and extremely permeable nature of the soil, will have to be redesigned in order to prove effective; 2) the air sparging was seen to have affects over a 40 foot radius; 3) no migration of contaminants off site was observed in the control wells; and 4) it can get cold and wet on North Padre Island in early March! A more detailed description and discussion of the process and results of the pilot will be mailed at a later date. The data collected during the pilot as well as the results of analyses from samples taken during the pilot can be found in the attachment labeled Pilot Sparge/SVE Data and Analyses.

Since the pilot, the monitor wells have been measured for water levels once. The data sheets for the groundwater monitoring, and the groundwater elevation summary chart can be found in the attachment labeled Monitor Data. The data for 2/24/94 and 3/30/94 have been plotted and contoured on the maps labeled Potentiometric Surface Map in the attachment labeled Maps. These two maps show that the groundwater gradient in this area is about .0002 to the east-southeast. This helps to explain the distribution of contamination across the site from the two previously mentioned hot spots.

The immediate plans for this site are as follows. Two groundwater samples will be obtained, one in OW-15 and one in OW-16, the week of May 31, 1994. The two samples will be tested for volatiles and semi-volatiles by Core Labs using EPA methods 624 and 625. Any remaining monitor wells that don't contain fph's will be sampled and analyzed for BTEX and TPH by the Amoco lab in Tulsa, OK. Water levels will be measured prior to sampling. All water level monitoring and sampling will be performed on a quarterly basis.

Future Plans:

- evaluate the pilot sparge/vapor extraction results for application to this site.
- determining the zero edge of the dissolved hydrocarbon plume;.
- evaluate the necessity to add or shut in any of the fph skimming systems.
- plan preventative maintenance for the facility.

Determining the zero edge of the dissolved plume is scheduled for Aug./Sept. 1994. The plan is to first take groundwater samples using the Geo hydropunch to locate the zero edge of the plume and to accurately locate the positions of the future monitor wells. Soil borings will also be dug during this investigation to determine the necessity of adding additional fph skimming systems.

Recommendations for preventative maintenance at this facility are currently being reviewed. This includes such things as removal of any redundant or unnecessary equipment and re-piping all fluid lines above ground.

HEALTH AND SAFETY PLAN (HASP)

The South Sprint Gas Collection Facility (SSGCF) is an unmanned facility in a very remote location on North Padre Island. Access to this facility is restricted by a locked gate at the beach access road. Also, the entire facility is surrounded by a locked, six foot high hurricane fence topped with three strands of barbed wire. All necessary signs and warning labels are posted both at the access gate and at the facility.

Amoco Production Company (APC) has developed a safety manual which addresses all OSHA requirements (a copy of this manual can be supplied upon request). All Amoco employees, as well as contractors (attachment 2 includes, for your information, APC's Contractor Safety Policy, Contractor Safety Implementation Plan, and the Introduction to the Contractor Safety chapter of the Safety Manual), are expected to be familiar with and abide with this manual. The contract pumper that visits this facility daily is HAZWOPER trained.

An Oil Spill Prevention and Response Act (OSPRA) plan for this facility has been filed with the Texas GLO. The requirements of this plan have been reviewed with the necessary Amoco employees as well as the contract pumper to ensure compliance.

SAMPLING AND ANALYSIS PLAN (SAP)

The objectives of the sampling and analysis plan will be to monitor the progress of the remediation of the site and to establish and monitor the zero edge of the dissolved hydrocarbon plume. Previous analyses of groundwater samples at this site indicate that running analyses for both benzene, ethylbenzene, toluene, and xylenes (BTEX) and total petroleum hydrocarbons (TPH) would be sufficient to monitor the site. This will be confirmed by a set of samples that will be acquired within the contaminated area. These samples will be analyzed for both volatiles and semi-volatiles using EPA methods 624 and 625 to confirm the contaminants present at this site.

All BTEX and TPH analyses will be performed by the Amoco Corporation Groundwater Management Section's lab using Amoco's modified 8015 freon extraction method (for information on Amoco's modified 8015 method for BTEX and TPH, please contact Yvan Beausoleil, Lab Manager at (918)660-4422). Soil samples and any other types of analyses will be performed by the Core Laboratories Corpus Christi lab.

The groundwater samples that will be analyzed for BTEX and TPH, as well as the samples to be analyzed using EPA methods 624 and 625 will be obtained from monitor wells using one inch Teflon bailers, and sampled using standard and accepted sampling and decontamination methods.

The groundwater samples that will be obtained to confirm the type of contamination present will be taken only once. The current plan is to obtain these samples the week of May 31, 1994. The results of these analyses, as well as with all analyses performed from this time forward, can be mailed to the National Park Service (NPS), the Texas Railroad Commission (TRRC), and the Texas National Resource Conservation Commission (TNRCC) within one week of receipt by Amoco Production Company (APC) if requested. Periodic sampling of the existing and future monitor wells will be performed quarterly.

A surface water sample has previously been obtained and analyzed (see Core Labs analysis dated 4/5/94 in the attachment labeled Analyses). The sample was obtained from the nearest available location, which is west-northwest of the site. The results indicated that the sample was non detect for BTEX. A random surface water sample may be collected in the future, when there is surface water present to confirm that the contamination from this site is not getting into the adjacent surface water bodies.

Groundwater samples were obtained during the initial site investigation on Aug. 2, 1993 using a Geo probe hydropunch. This technique involves driving a one inch, hollow steel rod with a sacrificial threaded tip through the soil to the desired depth. Teflon tubing (5/8 inch), perforated on the end, is then inserted into the hollow drill string and threaded into the sacrificial tip. The drill string is then pulled up out of the hole around the Teflon tubing. A peristaltic pump is then used to retrieve the groundwater sample. A total of 31 of these groundwater samples were collected and analyzed in the field with a field gas chromatograph running modified EPA method 8020 and modified EPA method 5030 purge and trap sample introduction. The results of these analyses can be found in the attachment labeled Analyses, dated Aug. 5, 1993. This technique may be used again in the future, pending approval of the NPS, to pick the locations for the next monitor wells to be installed

Soil samples were collected during the installation of 17 monitor wells on Feb. 22 - 24, 1994, at two and four foot depths. The samples were obtained using a two inch hand auger and then placed in 8 oz. sample jars. The samples were then immediately placed on ice and delivered to Core Labs the next day. They were analyzed for BTEX using EPA method SW-846 8020. This will be standard procedure for any future monitor well installation at this site.

QUALITY ASSURANCE PROJECT PLAN (QAPP)

The South Sprint project involves the characterization, definition, and remediation of the contamination present at this site. The facility is a small, remote, gas collection, liquid/gas separation and compression facility. The gas collected at this field is produced from two wells. The first well is located about 250 feet southeast of the facility. The second well and platform are located about one mile directly offshore in the Gulf of Mexico. The field produces an average of about 6 million cubic feet of gas per day (MCFD), 5 barrels of condensate per day (BCPD) and 3 barrels of water per day (BWPD). The produced water is stored on location and hauled away weekly by vacuum truck. The gas and condensate leave the site by pipeline.

The contamination was first discovered during routine soil sample analysis in March of 1993. This site, due to its location in an environmentally sensitive areas and the permeable nature of the soil, was chosen by APC as the result of an internal initiative, for a routine assessment. As a result, groundwater samples taken and analyzed in June of 1993 indicated that further work would be necessary to characterize and remediate the site. In addition to all of the sampling that has been done, six free phase recovery wells and 17 monitor wells have been installed and a pilot air sparge/soil vapor extraction test was run. A total of 131 gallons of free phase has been removed to date.

There are two people primarily responsible for all of the sampling at this site. Mike Greenwood, Sr. Field Environmental Coordinator at APC's Old Ocean Operations Center, and Mike Grimm, Sr. Environmental Specialist in APC's Houston office, will either personally perform or supervise all sampling at this site. Amoco's contract pumper has been trained on and is monitoring the free phase recovery systems daily.

Sample custody will not be an issue. All Samples and the chain of custody will be handled by either Mike Greenwood or Mike Grimm. The samples will either be hand-delivered to the Core Lab Corpus Christi office or mailed to the Amoco lab in Tulsa. All results will be mailed directly to Mike Greenwood and Mike Grimm.