

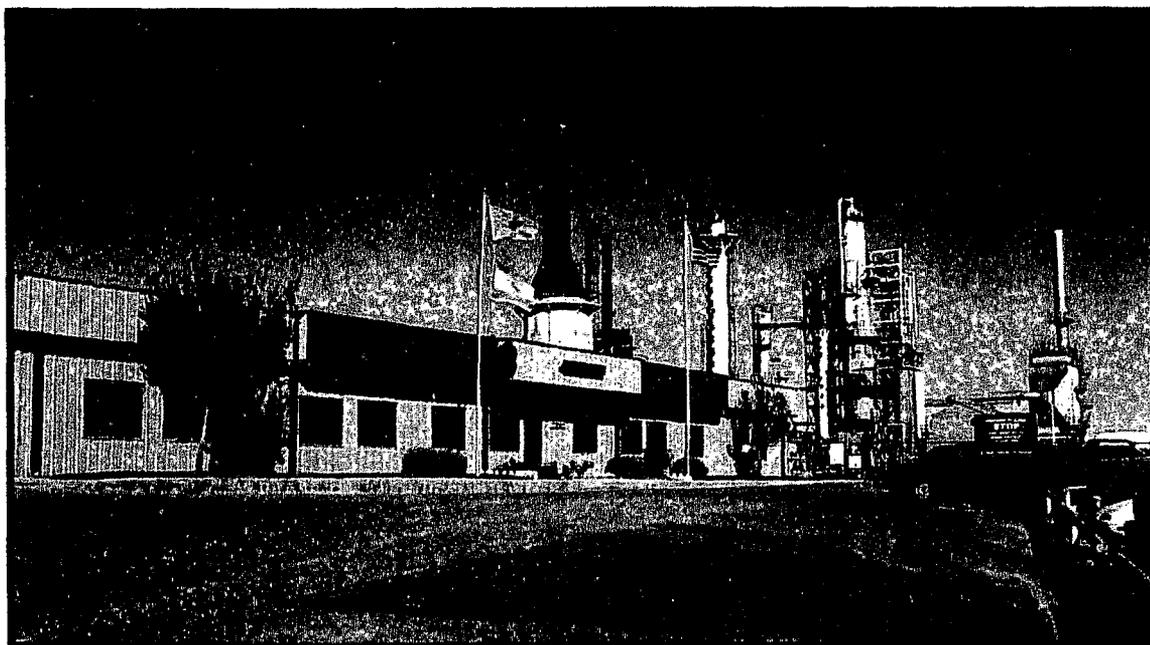
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WORK PLANS

2000

Storm Water Pollution Prevention Plan

Giant Bloomfield Refinery
Bloomfield, New Mexico



Issued: January 25, 2000

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LAP

Prepared by:

Practical Environmental Services, Inc.
2040 South Oneida Street, Suite 200C
Denver, Colorado 80224

Storm Water Pollution Prevention Plan

Revision 0

Prepared by: Tom Atwood

January 25, 2000

Facility Information

Name of Facility: Giant Refining Company Bloomfield Refinery

Type of Facility: Onshore Facility – Petroleum Refinery (SIC 2911)

Location: 50 County Road 4990, Bloomfield, NM 87413
(1 mile south of the City of Bloomfield, NM)
(Latitude 36° 41' 50", Longitude 107° 58' 20")

Owner/Operator: San Juan Refining Company
23733 North Scottsdale Road
Scottsdale, AR 85255

Contact Person: Barry Holman, Environmental Manager

Telephone: (505) 632-8013

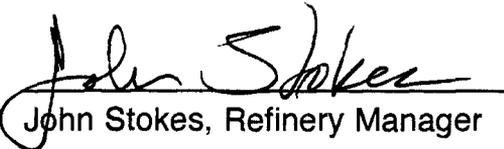
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Environmental Bureau
Oil Conservation Division

Management Approval

This Plan has been approved and implemented as herein described.

Signed:

Name/Title:


John Stokes, Refinery Manager

Professional Engineer Certification

I hereby certify that I have examined the facility, and being familiar with the provisions of the 40 CFR, Part 126 and EPCRA Section 313, attest that this Storm Water Pollution Prevention Plan has been prepared in accordance with good engineering practices.

Signed:

Name:

Registration No.:



Thomas D. Atwood, P.E.

New Mexico #14414



Purpose and Scope

This storm water pollution prevention plan (SWPPP) describes specific activities that will be performed at the Giant Bloomfield Refinery in order to prevent or minimize storm water pollution on refinery property. This type of pollution may arise if storm water comes in contact with petroleum feedstocks, intermediates, finished products, waste materials, or chemical products used in support of refinery operations.

Storm water discharge from Bloomfield Refinery property is regulated under various provisions of the Clean Water Act; including the NPDES permitting and compliance requirements in 40 CFR Part 122.26 and the effluent limitations specified in 40 CFR Part 419. The Bloomfield Refinery is also regulated under the Multi-sector General Storm Water Permit program and has been issued NPDES Permit Number NMR05A641.

Pollution Prevention Team

The following personnel have been assigned to the pollution prevention team and are charged with the responsibility for implementing this plan.

Barry Holman
Environmental Manager
(505) 632-4168

Team Leader

Responsible for overall implementation of the SWPPP. Provides guidance and direction for other team members. Conducts and oversees team meetings. Monitors applicable laws and regulations, and oversees updating of the SWPPP, as needed. Conducts routine inspections to assure plan compliance and monitor improvements when applicable. Maintains self audit and other records. Serves as the primary contact with regulatory agencies.

Craig Meldrum
Operations Manager
(505) 632-4153

Member

Assists with the identification of "significant" materials and determination of material inventory. Assists with the identification of potential release scenarios. Responsible for implementation of BMPs and general housekeeping practices within the refinery process areas. Supervises operations personnel and oversees the routine surveillance of process equipment and tankage. Provides personnel in support of spill response efforts.

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Don Wimsatt
Maintenance Manager
(505) 632-4130

Member

Assists with the identification of potential release scenarios. Responsible for implementation of BMPs and general housekeeping practices in maintenance and warehouse areas. Supervises maintenance personnel and oversees equipment repairs and preventative maintenance activities. Provides personnel and equipment in support of spill response efforts.

Chad King
Technical Services Manager
(505) 632-4145

Member

Assists with the identification of potential release scenarios. Responsible for designing and engineering improvements to ensure compliance with storm water emission limitations and regulatory requirements. Supervises laboratory personnel and oversees storm water sampling and analysis.

Jim Stiffler
Safety Manager
(505) 632-4170

Member

Assists with the identification of potential release scenarios. Assists with employee training in support of SWPPP and spill response activities. Serves as the emergency response coordinator for major spill events.

John Stokes
Refinery Manager
(505) 632-4105

Member

Monitors team activities and provides policy guidance. Reviews budgets and assures adequate resources are provided in order to sustain compliance.

As necessary, team members may temporarily designate other staff to represent them at meetings in which they cannot attend.

The team shall meet and conduct activities as necessary to ensure compliance with all applicable laws and regulations. The team shall meet at least once each year to review the SWPPP and address any relevant changes in refinery operations, equipment, or facilities. The SWPPP shall be updated, revised, or augmented as necessary to reflect changing circumstances or new information.

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Facility Description

The Bloomfield Refinery receives and processes up to 18,000 barrels per day of crude oil and produces propane, butane, gasoline, kerosene, jet fuel, fuel oil, and residual fuel.

The refinery is located in northwestern New Mexico, approximately 1 mile south of the City of Bloomfield in San Juan County. It is further located approximately 1/2 mile east of State Route 44 on County Road 4990 (a.k.a. Sullivan Road).

The refinery is situated on an elevated terrace south of the San Juan River and the Hammond Irrigation Ditch. This terrace is approximately 100 feet above the river level and 20 feet above the irrigation ditch. The northern refinery fence line adjoins the irrigation ditch and the distance from the refinery to the river's edge varies from approximately 300 to 1,000 feet.

The main part of the refinery is located on a 45 acre site north of County Road 4990 and includes the following general areas:

- Office Area (buildings, warehouse, storage yard, & parking lots)
- Process Area
- Wastewater Treatment Unit (WWTU)
- Tank Farm
- Firefighting Training Area

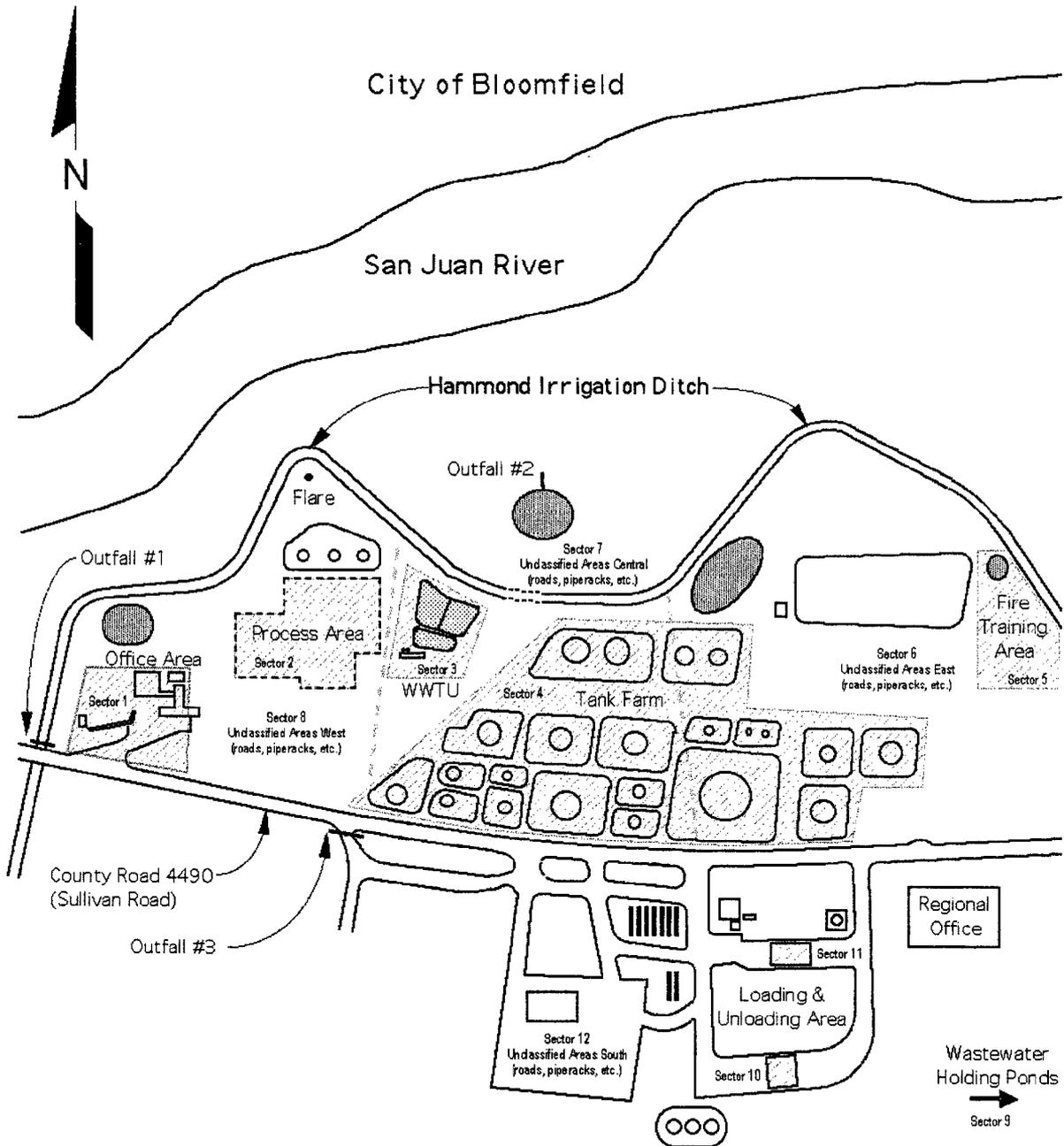
A terminal facility is located on a 15 acre site south of County Road 4990 and includes the following general areas:

- Terminal office & parking areas
- Crude Oil Unloading Station & Storage Tank Area
- Product Loading Station & Storage Tank Area
- High Pressure Storage Bullets Area

Topography in the vicinity of the refinery is characterized by a local high point at the southeastern boundary of the site. On the north side of County Road 4990, the predominant slope is gradually downward to the north and west toward the Hammond Irrigation Ditch. Opposite the ditch, the slope is more steeply downward until intersection with the San Juan River. On the south side of County Road 4990, the predominant slope is gradually downward to the north and west toward the side ditch on the south side of County Road 4990.

See Figure No. 1 – Refinery Plot Plan, for the general plant layout.

Figure No. 1
Refinery Plot Plan



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Significant Materials

Crude oil, intermediate feedstocks, and finished products are stored in various fixed tanks located on-site. Most of these tanks are located within a central Tank Farm in the main part of the refinery. A few tanks are located near the refinery Process Area and others are located at the Terminal facility south of County Road 4990. All storage is aboveground. There are no underground storage tanks at the refinery.

In addition to petroleum feedstocks and products, various lubricants, additives, and treatment chemicals are used on-site to support the operation of the refinery. These materials are typically received in pails, drums, and totes of various sizes. These containers are generally kept within the main warehouse, stockpiled in the outdoor storage yard at the west end of the refinery, or distributed for use.

In addition, tank trucks and trailers are used to unload crude oil and load-out finished products. These trucks and trailers may be temporarily parked in lots at the Terminal facility south of County Road 4990.

In addition, process wastewater is collected and treated within three aeration basins located at the WWTU east of the Process Area. This wastewater may also be placed within two holding ponds located southeast of the Terminal.

See Appendix A for an inventory of significant materials.

Potential Pollutants

The refinery primarily receives, handles, processes, stores, and transports crude oil and petroleum-based intermediates and finished products. In addition, various chemical products are used on-site in support of refinery operations. As such, these liquids, solids, and gases may contain various chemicals which are potential pollutants if dissolved in storm water. Some of these chemicals are designated as water quality priority pollutants under provisions of SARA Section 313.

See Appendix B for a list of potential pollutants contained in significant materials.

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Storm Water Assessment

See Appendix C for a site map showing storm water related information.

In general, significant materials are contained within steel walled tanks, vessels, drums, piping, and other impervious types of containment. As such, contact with storm water is substantially prevented. As a matter of policy, Giant does not allow significant materials to be located outdoors unless properly protected against exposure to storm water.

In the event of a leak or spill, storm water can come into contact with significant materials. A leak or spill can occur in areas where these materials are unloaded, transferred, processed, stored, or loaded-out. Incidental leakage can also occur in areas where mobile equipment is maintained or parked. These areas are identified on the storm water site map.

Storm water falling onto refinery property is divided into two primary drainage zones by County Road 4990.

On the north side of County Road 4990 is the main part of the refinery. Here, storm water drainage flows predominantly north toward the Hammond Irrigation Ditch and the San Juan River.

On the south side of County Road 4990 is the Terminal facility. Here, storm water drainage flows predominantly north toward the side ditch on the south side of the county road and then west toward the Hammond Irrigation Ditch.

Drainage sectors are identified as follows and shown on the storm water site map.

- Sector 1: Main office, warehouse, west storage yard, & parking lots
- Sector 2: Process Area
- Sector 3: WWTU
- Sector 4: Tank Farm & ancillary tankage areas
- Sector 5: Fire Training Area
- Sector 6: Refinery roads, piperacks, & unclassified areas (east)
- Sector 7: Refinery roads, piperacks, & unclassified areas (central)
- Sector 8: Refinery roads, piperacks, & unclassified areas (west)
- Sector 9: Wastewater holding ponds
- Sector 10: Crude oil unloading station
- Sector 11: Product load-out station
- Sector 12: Terminal roads, piperacks, & unclassified areas (south)

Overall drainage patterns and flow directions are shown the storm water site map. Individual drainage sectors are described as follows.

Sector 1 consists of the main office, warehouse, west storage yard, and the employee and contractor parking lots. Storm water falling within this sector flows generally south toward the side ditch on the north side of County Road 4990 and then west to a culvert crossing over the Hammond Irrigation Ditch. At this point, storm water exits refinery property. The culvert outlet is designated as Outfall No. 1.

Stormwater falling upon the main office and warehouse buildings is channeled by gutters and downspouts to the ground surface. Storm water falling within the west storage yard is generally confined by secondary containment structures. The parking lot adjacent to the main office is paved and the remaining parking areas are earthen. In the parking areas, storm water sheet flow is unconfined until it enters the side ditch on the county road.

Risk of a spill or leak on building roofs or within the main office is nil. Risk of a spill or incidental leakage in the employee and contractor parking areas is low. Risk of a spill or leak within the warehouse or west storage yard is moderate.

Sector 2 consists of the refinery Process Area. Storm water falling within this sector is generally confined by concrete curbing and paving, and conveyed via the process sewer system to the WWTU. In some areas, storm water is confined in a concrete sump and later pumped to the WWTU. Risk of a spill or leak is high. Storm water originating within the Process Area is assumed to contain some amount of hydrocarbon pollutants and is therefore treated in the WWTU.

Sector 3 consists of the WWTU. Storm water entering and falling within this sector is confined within three holding and aeration basins. These basins are designed and operated with sufficient retention capacity and freeboard to contain a 100 year storm event. Treated wastewater is reused or injected deep underground. The injection well can pump at a rate of up to 110 gpm. If needed, excess wastewater can be diverted to holding ponds.

Sector 4 consists of the main Tank Farm and ancillary tankage areas. Storm water falling within tankage areas is confined by secondary containment berms. Tank berms are designed with retention capacity sufficient contain a 100 year storm event. Following light rainfall events, this water is allowed to evaporate. Following heavy rainfall events, this water may be allowed to evaporate or may be transferred to the WWTU using a vacuum truck or temporary pumps and hoses. Tank berms are not equipped with drains. Risk of a leak or spill is low.

Sector 5 consists of the Fire Training Area. This area is used a few times each year to train employees in firefighting techniques. Small amounts of fuel oil are used to set mock equipment fires. Fuel oil is not stored in the area. Storm water falling within this sector flows generally north to Detention Pond No. 3. This pond is designed with retention capacity sufficient to contain a 100 year storm event. Risk of a spill or leak is moderate.

Sector 6 consists of roadways, piperacks, and unclassified areas in the eastern section of the refinery. Storm water falling within this sector flows generally north toward the Hammond Irrigation Ditch. Risk of a spill or leak is low.

Sector 7 consists of roadways, piperacks, and unclassified areas in the central section of the refinery. Storm water falling within this sector flows generally north toward the service road that crosses over the Hammond Irrigation Ditch. After crossing over the ditch, storm water flows to Detention Ponds No. 1 and 2. Risk of a spill or leak is low.

Sector 8 consists of roadways, piperacks, and unclassified areas in the western section of the refinery. Storm water falling within this sector flows generally north toward the Hammond Irrigation Ditch. Risk of a spill or leak is low.

Sector 9 consists of the two wastewater holding ponds located south of County Road 4990. Stormwater falling within this sector is confined by these bermed and lined ponds. Each pond is designed and operated with retention capacity sufficient contain a 100 year storm event. Risk of a spill or leak is low.

Sector 10 consists of the crude oil unloading station. Stormwater falling within this sector is confined by concrete curbing and paving and then conveyed via an underground sewer line to an earthen pit. The pit is designed with retention capacity sufficient to contain a 100 year storm event. Contaminated storm water is pumped to the WWTU. Risk of a spill or leak is moderate.

Sector 11 consists of the product load-out station. Storm water falling within this sector is confined by concrete curbing and paving and then conveyed via an underground sewer line to an earthen pit. The pit is designed with retention capacity sufficient to contain a 100 year storm event. Contaminated storm water is pumped to the WWTU. Risk of a spill or leak is moderate.

Sector 12 consists of roadways, piperacks, and unclassified areas within the Terminal facility. Storm water falling within this sector flows generally north toward the side ditch on the south side of County Road 4990 and then west toward the Hammond Irrigation Ditch. Risk of a spill or leak is low.

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Storm Water Outfalls

Unconfined storm water falling within Sector 1 exits refinery property at Outfall No. 1. This outfall is located at the outlet of the culvert crossing the Hammond Irrigation Ditch on the north side of County Road 4990. This storm water then flows into an ephemeral arroyo which empties into a natural retention basin. Storm water that does not evaporate or percolate in the retention basin will eventually flow into the San Juan River west of the refinery.

Unconfined storm water falling within the remaining northern drainage zone, Sectors 2 through 8, is captured in detention ponds. In the unlikely event that storm water detention capacity is exceeded, excess storm water will exit refinery property at Outfall No. 2. This outfall is located north of Detention Pond No. 2. This storm water will eventually enter the San Juan River north of the refinery.

Unconfined storm water falling within the southern drainage zone, Sectors 10 through 12, ultimately exits refinery property at Outfall No. 3. This outfall is located in the side ditch on the south side of County Road 4990 at the western edge of the refinery property line. This storm water then flows into a natural retention basin located east of the Hammond Irrigation Ditch. Storm water that does not evaporate or percolate in the retention basin will eventually flow into the San Juan River west of the refinery.

Non-Storm Water Discharges

In general, process wastewater is reused within the refinery. Excess wastewater is disposed via an injection well located on-site.

There is no non-contact cooling water in use at the Bloomfield Refinery.

Sanitary wastewater is disposed via on-site sanitary waste septic systems.

Storm Water Monitoring Data

In 1992, a composite storm water sample was collected from the drainage zone on the south side of County Road 4990.

See Appendix D for analytical results.

Potential Release Scenarios

Storm water can come into contact with significant materials if a leak, spill, or other type of release occurs. Potential release scenarios are described as follows.

1. Spills may arise from overflow, leakage, or rupture of storage tanks containing petroleum feedstocks, intermediates, or products. Storage tank numbers, contents, and maximum volume are shown in Appendix A. Tank location is shown on the storm water site map in Appendix C.
2. Spills may arise from leakage or rupture of portable drums, totes, pails, or containers located in the outdoor storage yard at the west end of the refinery. The location of this storage yard is shown on the storm water site map.
3. Spills may arise from leakage or rupture of vessels, pumps, piping, and related equipment located within the Process Area.
4. Spills may arise from leakage or rupture of piping that interconnects various parts of the refinery. Piperack locations are shown on the storm water site map.
5. Spills may arise from overflow, leakage, or rupture of facilities at the loading and unloading terminal on the south side of County Road 4990. These facilities include filling apparatus, hose connections, and tank trucks.
6. Spills may arise from incidental leakage associated with mobile equipment operations, maintenance, or at parking locations.
7. Spills may arise from overflow or leakage of facilities at the residual fuel load-out station.
8. A release may arise from overflow or liner failure at the WWTU or waste-water holding ponds.
9. Spills may arise from leakage or overflow at fueling stations. Fueling station locations are shown on the storm water site map.

Spill History

There have been no reportable spills, releases, or discharges at the refinery as related to Clean Water Act or CERCLA reporting requirements.

Minor spills have occurred as follows and were reported to the New Mexico Oil Conservation Division.

1. On March 18, 1991, approximately 180 barrels (7,560 gallons) of jet fuel spilled inside the dike of Tank No. 26. The spilled material was recovered using a vacuum truck and recycled.
2. On February 4, 1993, approximately 45 barrels (1,890 gallons) of reformate spilled inside the dike of Tank No. 5. The spilled material was recovered using a vacuum truck and recycled.
3. On January 9, 1998, approximately 2 barrels of wastewater overflowed a containment pad and flowed into the side ditch along County Road 4990. Most of the spilled material was recovered using a vacuum truck. Some of the wastewater absorbed into soil before it could be recovered.
4. On January 17, 1998, approximately 1,800 barrels of treated process wastewater spilled outside the north evaporation pond. The spilled material was contained, recovered, and returned to the evaporation pond.
5. On January 12, 1999, approximately 3,150 gallons of treated process wastewater spilled into the south side ditch on County Road 4990 west of the regional office building. The spilled material was contained by an earthen dike installed in an arroyo downstream of the spill.

Best Management Practices (BMPs)

In order to minimize potential contact between storm water and significant materials, the following operating, maintenance, and management practices have been implemented at the Bloomfield Refinery.

Best Management Practice #1: Good Housekeeping

Good housekeeping shall be practiced at the Bloomfield Refinery.

1. Refinery operations personnel shall maintain a clean and orderly work environment within the Process Area, Tank Farm, and the terminal facilities. Chemical drums, pails, and containers shall be placed in safe locations and used properly in order to minimize the risk of a spill or leak. At least once each month, employees shall police and clean-up their area of responsibility. Oily waste materials, rags, sample containers, and other debris shall be placed in appropriate disposal bins. The Operations Manager shall oversee compliance with this task.
2. Refinery maintenance personnel shall maintain a clean and orderly work environment within maintenance shops, roads, and unclassified sections of the refinery. Maintenance-related drums, pails, and other containers shall be stored and stacked properly in order to minimize the risk of a spill or leak. At least once each month, employees shall police and clean-up their area of responsibility. Oily waste materials, rags, and other debris shall be placed in appropriate disposal bins. The Maintenance Manager shall oversee compliance with this task.
3. Refinery warehouse and office personnel shall maintain a clean and orderly work environment within the warehouse and main office building. At least once each month, these employees shall police and clean-up their area of responsibility. The Administration Manager shall oversee compliance with this task.

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Best Management Practice #2: Spill Prevention

Design and standard operating practices shall be used to minimize the likelihood of leaks, spills, or releases occurring within the refinery.

1. Process equipment, vessels, tanks, and piping shall be engineered to safely and reliably contain applicable process fluids under normal operating conditions. Appropriate industry standards and engineering practices shall be used in the design, construction, and maintenance of all equipment.
2. Process vessels, equipment, and piping shall be protected against over-pressure and rupture by installation of properly sized safety relief valves.
3. All petroleum storage tanks shall be constructed of carbon steel, or approved equal, and protected against corrosion.
4. Storage tanks shall be gauged daily and recorded. Tank inventory shall be checked against input and output quantities to detect potential leakage.
5. Portable storage tanks and drums used within the refinery shall be placed within secondary containment pads or dikes.
6. All terminal operations shall be performed in compliance with DOT regulations and shall be attended full-time. Warning placards shall be placed in front of tank trucks to alert drivers that disconnection must be ensured prior to departure.

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Best Management Practice #3: Process Surveillance & Visual Inspections

Routine visual inspections shall be conducted at the Bloomfield Refinery.

1. At least once per shift, operations personnel shall conduct a visual inspection of the Process Area, Tank Farm, and the Terminal Facility. Surveillance rounds shall include process equipment, vessels, tanks, piping, containment berms, and facility grounds. Each area shall be visually inspected for signs of abnormal conditions, leakage, or spills.
2. At least once per day, maintenance personnel shall conduct a visual inspection of maintenance areas, vehicle parking areas, and unclassified areas of the refinery. Each area shall be visually inspected for signs of abnormal conditions, leakage, or spills.
3. Leaks or spills shall be immediately reported to the Shift Supervisor.
4. At least once per month, maintenance personnel shall conduct a visual inspection of storm water control facilities; including berms, drains, culverts, ditches, swales, and detention ponds. A work order shall be generated whenever any signs of equipment damage, failure, plugging, obstruction, or contamination have been discovered. Repairs shall be implemented as soon as practicable. The Environmental Manager shall be notified if contamination is discovered.

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Best Management Practice #4: Leak and Spill Controls

The following controls have been installed to contain potential leaks and spills.

1. All petroleum storage tanks are located within full encirclement earthen containment dikes constructed of low permeability soil. All basins are sized to contain the maximum volume of the largest tank within the dike, plus an additional freeboard height of at least 6 inches. Tank dikes are not equipped with drains. Precipitation is infrequent and stormwater trapped within diked areas typically evaporates. Spills are removed via vacuum trucks or portable pumping systems. Recovered material is transferred to a slop tank or the WWTU, as appropriate.
2. Refinery processing units are located in the Process Area. Within this area, all vessels, pumps, piping, and related equipment are located within curbed concrete containment pads. Most containment pads drain directly to the WWTU. Some containment pads drain to sealed collection sumps which can then be pumped to either a slop tank or the WWTU, as appropriate.
3. Terminal stations are located within curbed containment pads equipped with sumps and drains. All terminal stations drain to earthen pits. Contaminated storm water is pumped to the WWTU.
4. Portable containers located within the west storage yard are handled as follows. Drums are placed within a special secondary containment structure located at the south end of the yard. Totes are placed within a curbed concrete containment pad which drains to a sealed sump.
5. Transfer piping and other spill sources located within the refinery but outside of containment structures are located such that surface topography will cause spills to flow to various retention basins as shown on the storm water site map.
6. Spilled material which accumulates in any retention basin is removed via portable skimmers and pumps, and then transferred to either a slop tank or the WWTU, as appropriate.

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Best Management Practice #5: Preventative Maintenance

Refinery equipment shall be inspected, maintained, and repaired as necessary in order to reduce the likelihood of containment failure.

1. Pressure vessels, drums, tanks, pumps, piping, and other containment equipment shall be routinely inspected for mechanical integrity. Inspection procedures and schedules are described in the refinery Process Safety Management (PSM) program.
2. Tank berms and secondary containment structures shall be routinely inspected for stability and integrity.
3. Storm water collection piping, culverts, ditches, channels, swales, diversion boxes, valves, and other control devices shall be routinely inspected for obstructions, plugging, leaks, damage, stability, and integrity.
4. Inadequate facilities shall be repaired or replaced in a timely fashion.

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Best Management Practice #6: Spill Response & Clean-up

In the event that a spill occurs, the following procedures shall be followed:

1. Safety is the first priority. Alert fellow employees. Notify the Shift Supervisor. Assess and respond to imminent safety hazards first. If flammable materials are involved, eliminate area ignition sources and assign a fire watch to the site. Assure that all persons involved in the clean-up use appropriate PPE.
2. When safe to do so, the Shift Supervisor will devise a plan and implement an appropriate spill response. All response actions are incident specific, but may include the following key elements:
 - a) If a spill threatens to escape refinery boundaries, an emergency response under the Integrated Contingency Plan must be initiated; otherwise,
 - b) Stop the source of the spill,
 - c) If not already contained, stop the spread of the spill,
 - d) Recover free product and absorb residual product, and
 - e) Remove impacted soil and sorbents to containers or onto a plastic lined holding pile in a safe location.
3. The appropriate managerial authority will investigate the cause of the spill, document the circumstances and response, and if appropriate, make recommendations to the Refinery Manager to prevent a recurrence.

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Best Management Practice #7: Sediment and Erosion Control

Soil erosion and sediment build-up shall be controlled in order to prevent failure of the storm water controls.

1. Build-up of sediment within drains, culverts, ditches, swales, and detention ponds can undermine the operation of storm water controls. Accumulated sediment shall be removed, as necessary, to allow for proper operation of these facilities.
2. Soil and bank stabilization shall be employed, wherever necessary, in order to inhibit excessive erosion and sediment buildup.

Approved methods include the following:

- Minimize slope and grade of barren areas
- Use of rock, stone, or other form of rip rap
- Use of vegetative coverings in areas where a grass fire will not negatively impact fire protection and plant safety

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Best Management Practice #8: Self-Audits & Annual Compliance Evaluations

Compliance with the provisions of 40 CFR Part 122.26 and this SWPPP shall be demonstrated annually via a self inspection audit conducted as follows:

1. The Environmental Manager, or other appropriate person(s) designated by the Refinery Manager, will conduct the self inspection audit each year.
2. A written inspection report shall be prepared and used to record findings and recommendations. Recommendations, if any, must be promptly reported to the Refinery Manager for review and evaluation.
3. The inspection report must be signed and dated by the inspector, and kept on file in Appendix E for at least five years.

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Best Management Practice #9: Employee Training

All employees shall receive general safety and environmental compliance training at the beginning of employment and prior to performing normal duties and assignments. In addition, specific SWPPP training shall be provided to all process and maintenance employees that may become involved in SWPPP related activities. This training shall cover the provisions of this plan and include the following topics:

- Spill prevention, detection, and response procedures,
- Location of potential spill sources, and
- Location and proper use of spill response equipment and supplies.

In addition to initial employment training, all employees shall receive annual refresher training which must include the following topics:

- Review of spill prevention, detection, and response procedures,
- Review of changes in facilities or operations during the previous year, and
- Review of spill events and response actions during the previous year.

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Best Management Practice #10: Recordkeeping

As required by applicable regulations, records shall be kept and maintained as follows:

1. Self audit reports and documentation. Appendix E of the SWPPP.
2. Spill reports and documentation.. Appendix E of the SWPPP.
3. Preventative maintenance and equipment inspection records. This documentation will be included in the PSM program records.
4. SWPPP updates, revisions, and modifications.

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Non-Storm Water Discharge Assessment Certification

There are no non stormwater discharge sources at the Bloomfield Refinery.

NPDES Certifications

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I certify under penalty of law that I have read and understand Part I. B eligibility requirements for coverage under the Multi-Sector storm water general permit, including those requirements relating to the protection of species identified in Addendum H.

To the best of my knowledge, the discharges covered under this permit, and construction of BMPs to control storm water run-off, are not likely to and will not likely adversely affect any species identified in Addendum H of the Multi-Sector storm water general permit or are otherwise eligible for coverage due to previous authorization under the Endangered Species Act.

To the best of my knowledge, I further certify that such discharges, and construction of BMPs to control storm water run-off, do not have an effect on properties listed or eligible for listing on the National Register of Historic Places under the National Historic Preservation Act, or are otherwise eligible for coverage due to a previous agreement under the National Historic Preservation Act.

I understand that continued coverage under the Multi-Sector general permit is contingent upon maintaining eligibility as provided for in Part 1.B.

Signed:

Name/Title:


John Stokes, Refinery Manager

Date:

2/29/00

Significant Materials
Atmospheric Storage Tanks

Tank No.	Contents	Maximum Volume (barrels)
3	Turbine fuel/Reformate	10,000
4	Turbine fuel/Reformate	10,000
5	Reformate	10,000
8	Slop oil	500
9	Slop oil	500
10	Spent caustic	400
11	Reformate	55,000
12	Poly/Cat mix	55,000
13	Gasoline	30,000
14	Gasoline	30,000
17	Reduced crude	40,000
18	Diesel	55,000
19	Diesel	36,000
20	FCC slop oil	5,000
22	Gasoline slop	1,500
23	Base Gasoline	40,000
25	Reformer feed	10,000
26	Naphtha	4,000
27	Residual oil	10,000
28	Crude oil	80,000
29	Diesel	17,000
30	Blend stock	17,000
31	Crude oil	110,000
32	Gasoline	20,000
35	Reformer feed	55,000
36	Poly/Cat mix	55,000
41	Crude oil	700
42	Crude oil	700
43	Crude oil	700
44	Ethanol	2,000
45	MTBE	5,000

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Significant Materials
Pressurized Storage Tanks

Tank No.	Contents	Maximum Volume (barrels)
B-01	Out-of-service	286
B-02	Out-of-service	430
B-12	LPG	692
B-13	LPG	500
B-14	LPG	500
B-15	LPG	714
B-16	LPG	714
B-17	LPG	714
B-18	LPG	714
B-19	LPG	714
B-20	LPG	714
B-21	LPG	714
B-22	LPG	714
B-23	LPG	714

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Significant Materials
Chemical Inventory

Product	Maximum Volume	Location
Antifreeze/coolant	3 - 55 gallon drums	West storage yard
Betz 2W157	521 gallon tote	Boiler house
Betz 5K7	521 gallon tote	Boiler house
Chevron TPM 15W40	25 gallons	Storage yard
Chlorine	1 - 2000# cylinder	Cooling tower
Chlorine	22 - 150# cylinder	Cooling tower/Storage yard
DPW CA-100	1 - 550 gallon tote	SRU building
Dow CA-2102	1 -550 gallon tote	SRU building
Dow CA-299	1 - 550 gallon tote	SRU building
Dow IC-110	2,500 gallon tank	SRU building
Dow IC-210	2,500 gallon tank	SRU building
Du Pont Antioxidant #22	2 - 55 gallon drums	Storage yard/Process area
Du Pont Stadis 425	2 - 55 gallon drums	Storage yard/Process area
Exxon XD30 motor oil	2 - 55 gallon drums	Storage yard/Firehouse
Glycol ether DM	3,200 gallon tank	Process area
Hydraulic fluid	5 -5 gallon pails	Storage yard
Hydraulic fluid	2 -5 gallon pails	Storage yard
Marvel oil	10 gallons	Storage yard
Merox WS reagent	4 gallons	Storage yard
Methanol	4 - 55 gallon drums	Storage yard/Process area
Monosodium phosphate	4 - 55 gallon drums	Storage yard/Process area
Nalco 7356	3 - 200 gallon tote	Storage yard/Process area
Nalco 71+D5	2 - 400 gallon tote	Storage yard/Process area
Nalco Eliminox 02	2 - 400 gallon tote	Storage yard/Boiler house
Nalco Transport Plus 7200	2 - 400 gallon tote	Storage yard/Boiler house
Nalco Tri-act 1802	2 - 400 gallon tote	Storage yard/Boiler house
Nalcolyte 8157	3 gallons	Storage yard/Pump house
Octel Oil Red B liquid dye	2 -250 gallon tote	Storage yard/Terminal
Pennzoil motor oil	2 - 55 gallon drums	Storage yard
Phillips 80 Octane	2 - 55 gallon drums	Storage yard
Phillips Isooctane	2 - 55 gallon drums	Storage yard

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Product	Maximum Volume	Location
Phillips Toluene	10 gallons	Storage yard

Significant Materials
Chemical Inventory (Continued)

Product	Maximum Volume	Location
Philips Heptane	15 - 5 gallon pails	Storage yard/Laboratory
Philips Scentinel A	200 gallon tank	Terminal
Shell Naphtha 96	2000 gallon tank	Terminal
Stoddard solvent	3 - 55 gallon drums	Storage yard
Sulfuric acid	3 - 500 gallon tanks	Cooling towers
Safety Kleen solvent	1 - 55 gallon drum sink	Maintenance shop
Terrestic 32	4 - 55 gallon drums	Compressor building
Texaco additive	2000 gallon tank	Terminal
Perchloroethylene	3 - 55 gallon drums	Storage yard/Process area
Betz 8Q31	3000 gallon tank	Process area
Unocal ATF Dextron R II	6 - 55 gallon drums	Storage yard/Process area
WD-40	32 - 12 oz. cans	Storage yard/Shop
Zeplon	12 - 20 oz. cans	Terminal

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Potential Storm Water Pollutants

Conventional Pollutants

- pH
- BOD₅
- COD
- Oil & grease
- Total organic carbon (TOC)
- Total Kjeldahl nitrogen
- Nitrate & nitrite nitrogen
- Total phosphorus
- Phenolic compounds
- Sulfide
- Total suspended solids (TSS)
- Total chromium
- Total hexavalent chromium

SARA 313 Water Quality Criteria Pollutants

- Benzene
- Ethylbenzene
- Toluene
- Xylenes

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Storm Water Information Site Map

Storm Water Sampling & Analysis Data

On August 14, 1992, a grab sample was collected from Outfall No. 1 during a significant rainfall event (0.73 inches).

Analytical results are as follows:

pH	7.36	
Oil & grease	6.0	mg/l
Biological oxygen demand (BOD)	8.6	mg/l
Chemical oxygen demand (COD)	200	mg/l
Total suspended solids (TSS)	592	mg/l
Total Kjeldahl nitrogen	1.06	mg/l
Nitrate	0.24	mg/l
Nitrite	<0.02	mg/l
Ammonia	0.16	
Total phosphorus	0.60	mg/l
Sulfide as H ₂ S	5.71	mg/l
Phenols	0.97	mg/l
Total chromium (Cr)	0.03	mg/l
Total hexavalent chromium	0.02	mg/l

Audit Performed By: **Thomas D. Atwood, P.E.**

Date Performed: **Friday, November 19, 1999**

Observations & Findings:

A walking tour and comprehensive visual inspection of the refinery, terminal, and surrounding vicinity was conducted on Friday morning, November 19, 1999. The weather was clear and sunny. No rainfall had been reported during the prior week. All ground surfaces, equipment, berms, storm water structures and controls were plainly visible.

1. The west storage yard was inspected first. Totes and 55 gallon drums containing various chemical products were observed within the yard. Totes were observed on a curbed, concrete containment pad. Drums were observed within an "L" shaped, elongated shed. The base of the shed consists of a concrete containment basin and the drums are elevated above the floor by a bar support. The shed is covered by a roof and side wall. A gasoline tank and refueling pump are also located in the yard. Both the tank and pump are located within a high-walled concrete containment basin. The topography of the yard is such that storm water falling outside of containment areas will flow to the southeast and be trapped by the drum shed containment wall. No spills are known to have occurred in the yard. The ground surface showed no indication of staining. Housekeeping was in good order.
2. The main office, warehouse, and parking areas were visually inspected. No chemical products or outdoor chemical or petroleum storage was observed. The parking areas were observed to be in normal automobile use. The ground surface showed no indication of staining. The side ditch on the north side of County Road 4990 was clean and unobstructed.
3. The process area was visually inspected. In general, housekeeping was observed to be in good order. Most secondary containment pads were observed to be clean and structurally competent for spill and storm water containment. In a few areas, containment pads were deteriorated or lacked curbing. At the west side of the process area, a heater labeled as H-404 lacks adequate containment and it appears that a major leak in this equipment could potentially migrate to the Hammond Irrigation Ditch. Stained soil was observed at the base of the flare stack. It appears that this area is also a low collection point for unconfined run-off originating in the western part of the refinery.

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4. The WWTU was visually inspected. Housekeeping was observed to be in good order. The holding and aeration basins were in operation and appeared to have at least 18 inches of freeboard space available. The north sidewall was inspected and found to be structurally competent with no indication of erosion or deterioration.
5. The Tank Farm and ancillary tankage areas were visually inspected. In general, housekeeping was observed to be in good order. All petroleum and chemical storage tanks were found to be within secondary containment berms or concrete basins. In general, the earthen berms were found to be structurally competent; however, in a few isolated areas, these berms showed indications of soil erosion. No drains were observed within the bermed areas.
6. The Fire Training Area was visually inspected. Housekeeping was observed to be in good order. Minor soil staining was observed in vicinity of fire training equipment. A shallow earthen berm has been constructed on the east and west sides of this area in order to control run-on and run-off. The area drains to Detention Pond No. 3, which was dry at the time of inspection. No indication of staining was present on the floor of the pond.
7. The roads, piperack alleys, and other unclassified areas of the refinery were visually inspected. In general, housekeeping was observed to be in good order. Fueling stations consisting of elevated fuel drums (gasoline and diesel) were noted in several areas. All were found to be within secondary containment basins. The burner fuel load-out rack appears to lack adequate curbing to control storm water run-on or run-off.
8. The process wastewater holding ponds were visually inspected. The north pond was empty at the time of inspection. The south pond was partially full and appeared to have at least 3 feet of freeboard space available. Housekeeping was observed to be in good order. The area impacted by the 1998 wastewater spill was also inspected. No soil staining or other indication of contamination was evident. Berms and side walls were found to be structurally competent; however, minor soil erosion was evident in several areas.
9. The Terminal Area was visually inspected. In general, housekeeping was observed to be in good order. Minor soil staining was evident in the vicinity of the crude oil unloading rack, the product load-out rack, and the crude oil storage tanks.

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Recommendations:

1. Stained soil at the base of the flare stack should be cleaned up. The source of this leakage should be investigated and corrected, if feasible.

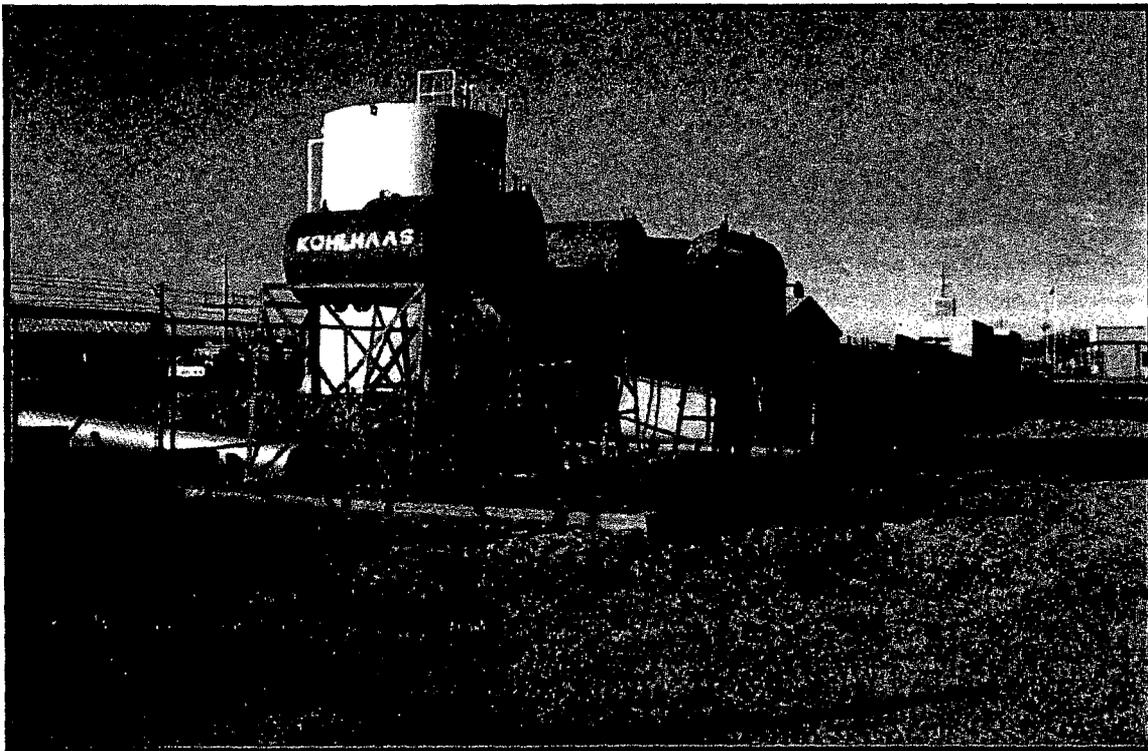
The base of the flare stack is located at a low collection point for unconfined storm water originating in the western section of the refinery. Because this run-off may come into contact with leakage at the flare stack, the storm water should be either diverted from flowing into this area or contained or recovered in order to prevent an overflow into the Hammond Irrigation Ditch.

2. Unconfined storm water may also come into contact with potential leakage in the vicinity of H-404 at the northwestern edge of the process area. If so, a containment structure and extension of the process sewer should be evaluated for this area.
3. Significant soil erosion was noted on the side walls of earthen berms in several locations within the tank farm, along the north and east faces of the raw water holding pond, and at the process wastewater holding ponds. These berms should be repaired.
4. At the fire training area, the earthen berms which form the detention pond at the north end of this sector should be built up and thickened in order to ensure containment.
5. At the crude oil unloading station and the product load-out station, the earthen pits which provide containment for storm water run-off should be built up and thickened in order to ensure containment.

Site Inspection Photographs

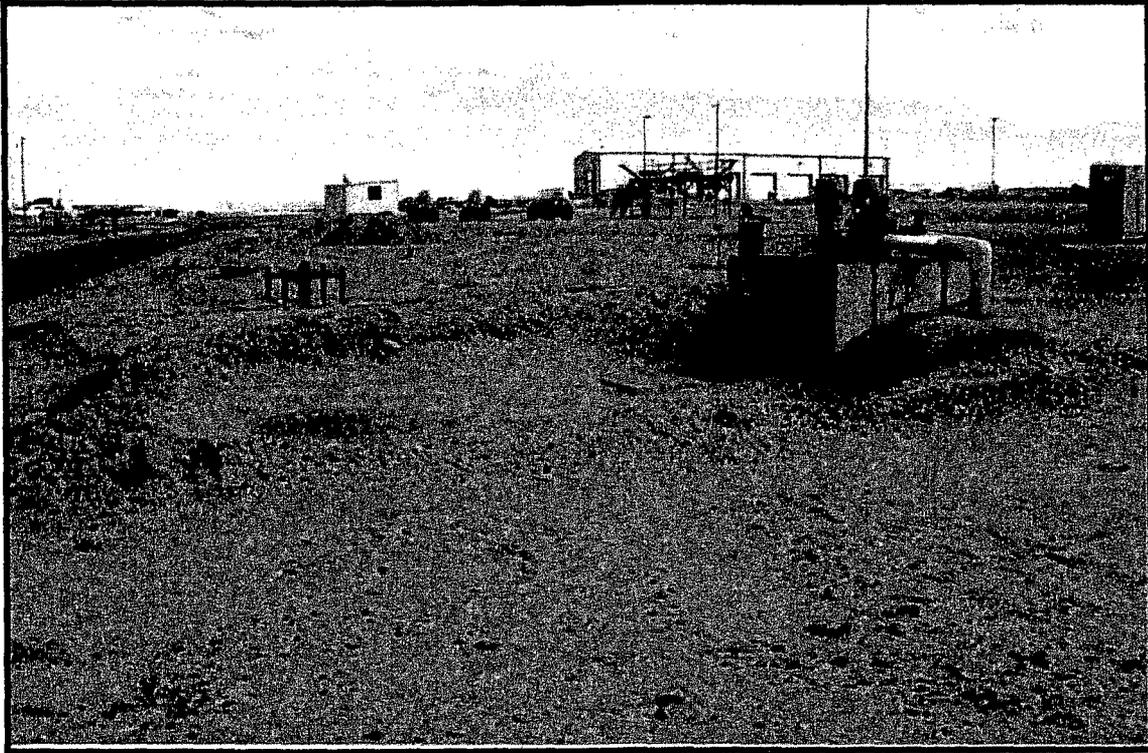


Containment Pad & Curbing – Process Area

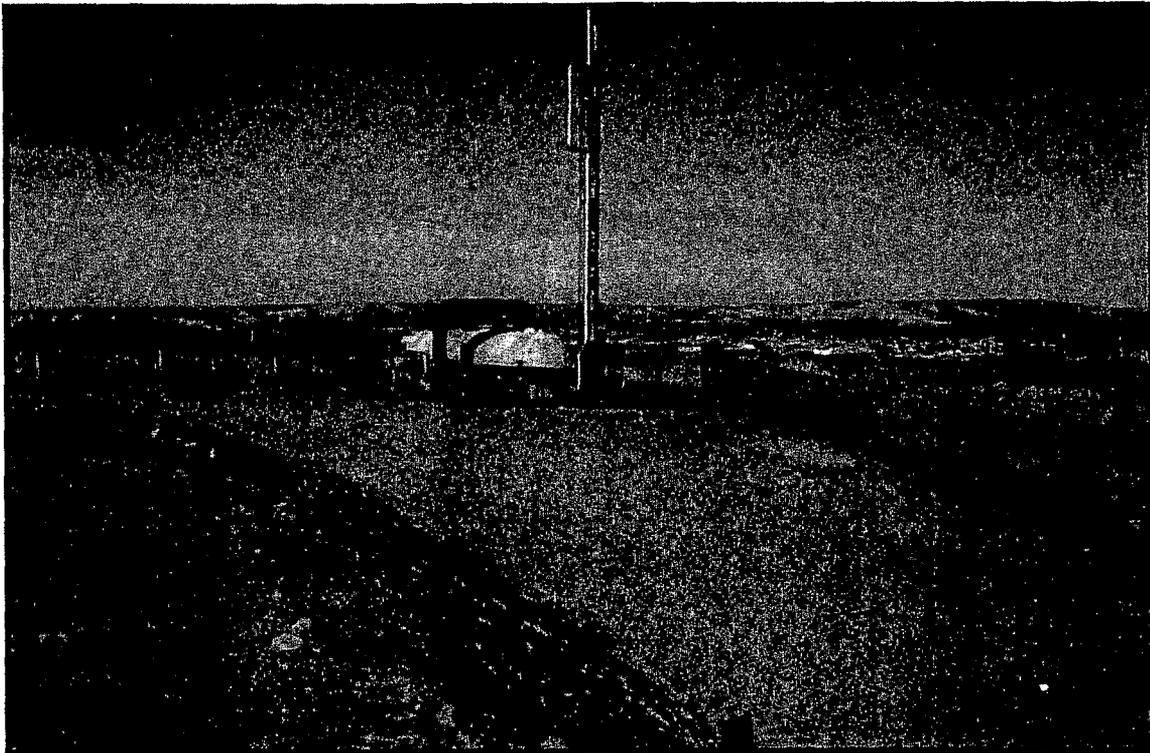


Containment Pad & Curbing – Refueling Station

Site Inspection Photographs



Earthen Containment Basin – Crude Oil Unloading Station

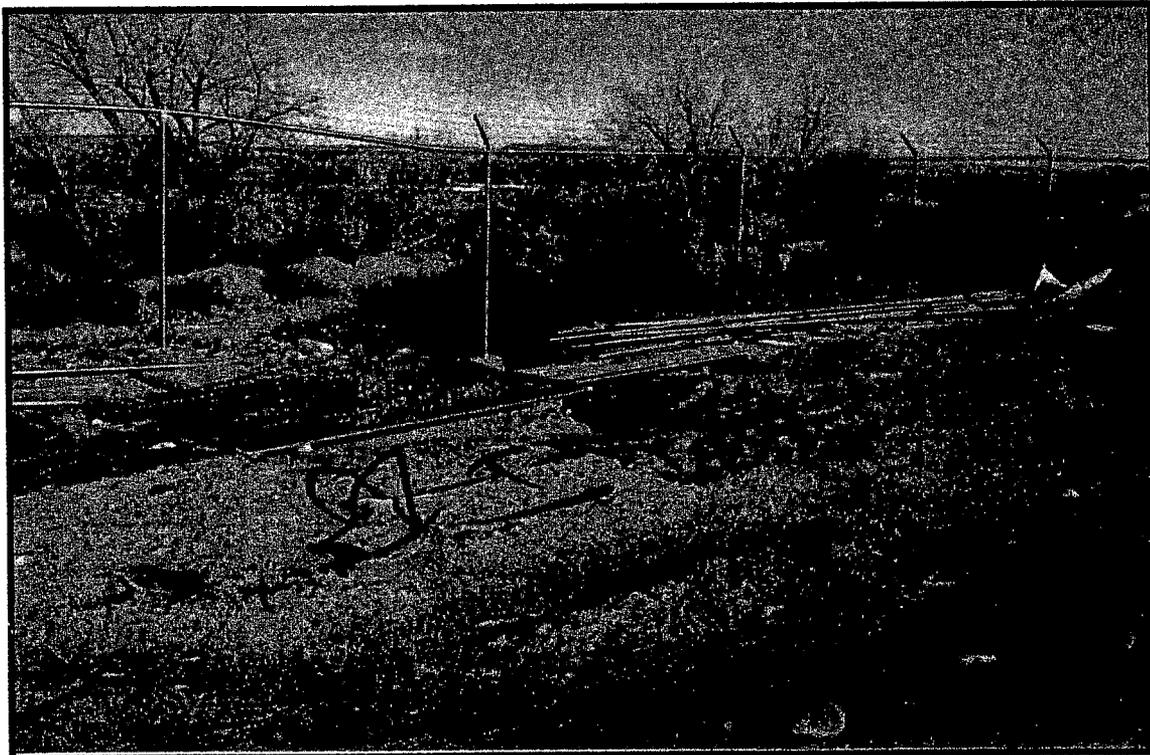


Stained Soil at Base of Flare Stack

Site Inspection Photographs

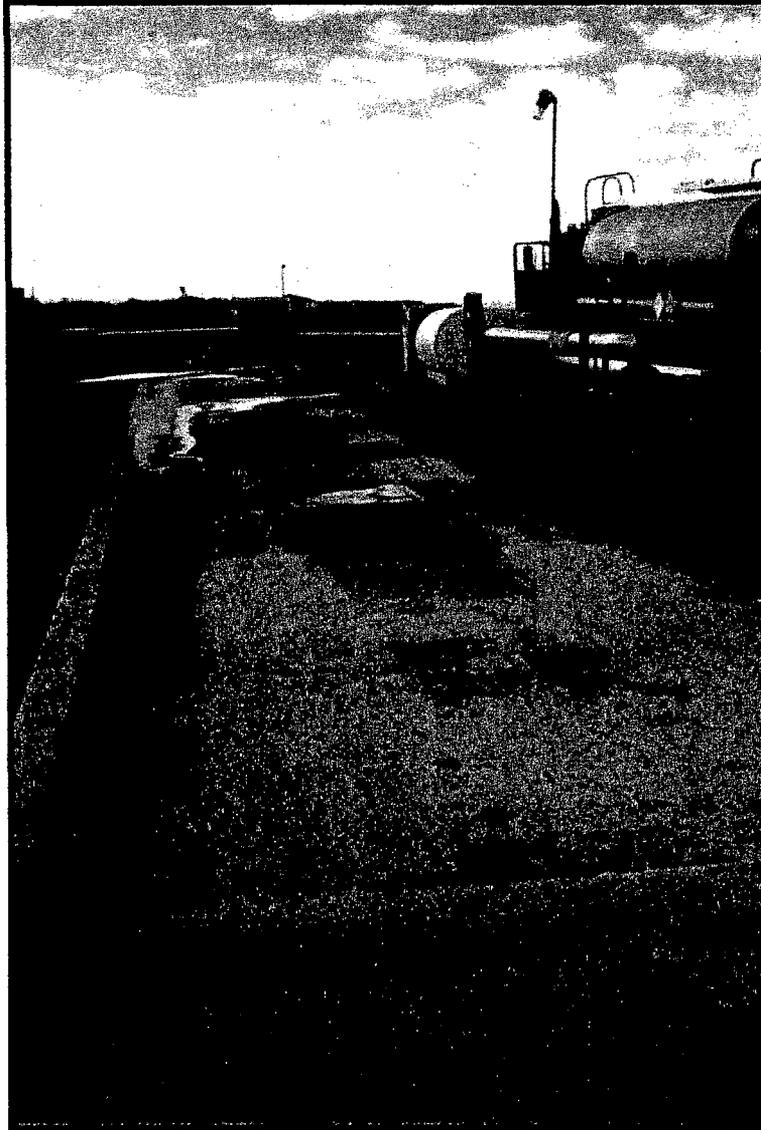


Soil Erosion on Earthen Berm

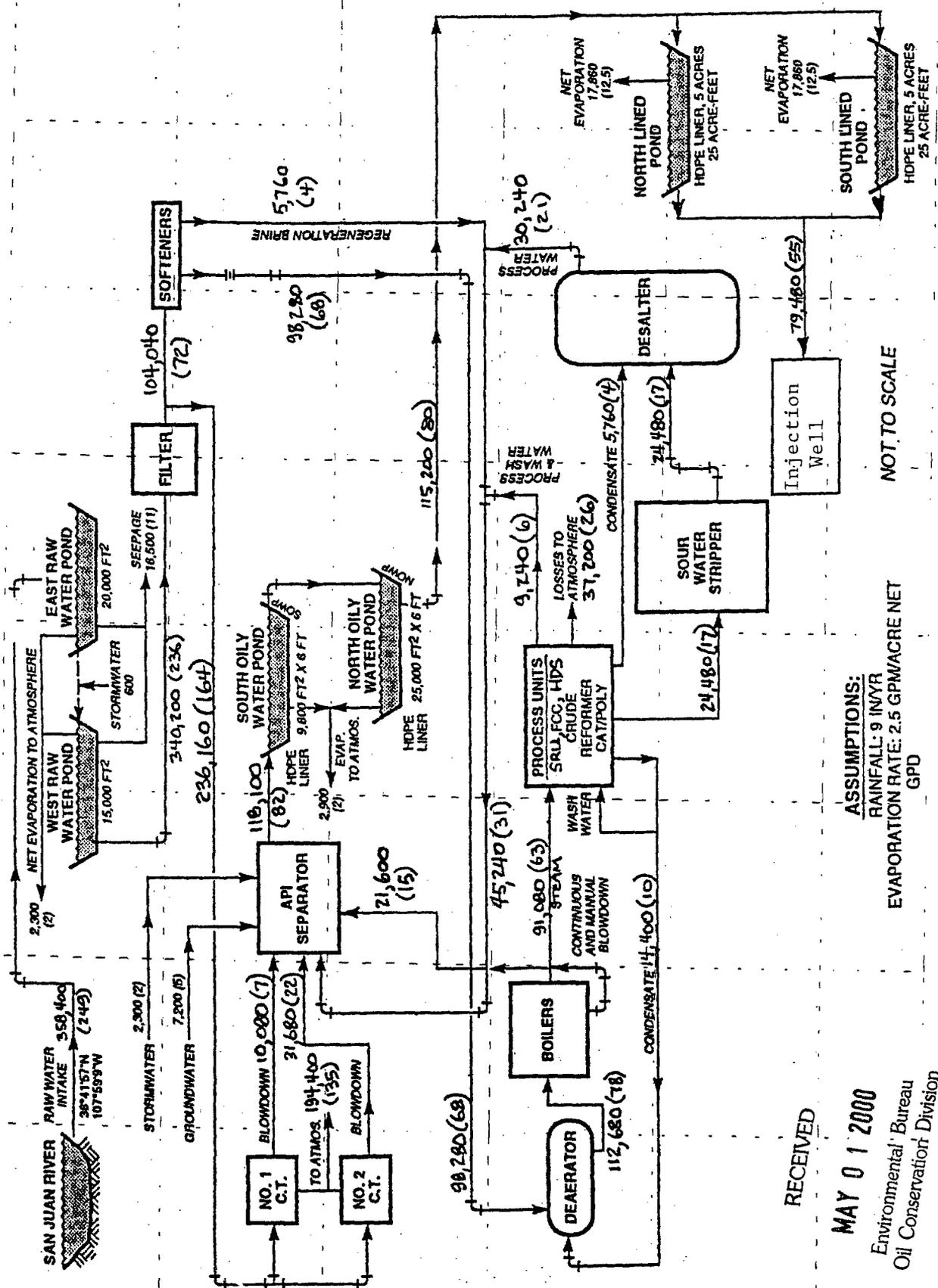


Soil Erosion at North Boundary

Site Inspection Photographs



Containment Pad & Curbing – Crude Oil Unloading Station



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MAY 01 2000

Environmental Bureau
Oil Conservation Division

ASSUMPTIONS:
RAINFALL: 9 IN/YR
EVAPORATION RATE: 2.5 GPM/ACRE NET
GPD

NOT TO SCALE

R.T. HICKS CONSULTANTS, LTD.

4865 Indian School Road NE Suite 106 Albuquerque, NM 87110
505.266.5004 Fax: 505.266.7738

Giant Refining Company

Wastewater Flow Diagram

Plate 5

May, 1999

