UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

MAR 24 2010

Ref: 8EPR

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Marcus Levings, Chairman
Three Affiliated Tribes
404 Frontage Road
New Town, North Dakota 58763

Re: Proposed Changes to MHA Nation Clean Fuels Refinery and Information Request

Dear Chairman Levings:

As you are aware, the United States Environmental Protection Agency (EPA) Region 8, the United States Bureau of Indian Affairs (BIA) and the Mandan, Hidasta and Arikara Tribes (Tribes) have been working jointly for a number of years on the Environmental Impact Statement (EIS) associated with the Tribes' proposed Clean Fuels refinery. We recognize that the Tribes have invested significant time and resources towards developing the proposed refinery and we would like to continue to work with you to resolve the important NEPA and air emissions issues identified in this letter. Understanding the Tribes' significant interest in this project, EPA would like to schedule a meeting with the Tribes and BIA in Denver at your earliest convenience.

In our letter of December 21, 2009, the EPA requested additional information about the feedstock for the proposed refinery and air pollution calculations prepared by the Tribes' DEIS contractor. To date, we have not heard back from the Tribes. However, we have had several follow-up discussions with the Tribes' consultants and attorneys and it is our understanding that the Tribes are now likely to use the Bakken formation crude as the refinery feedstock. As we have mentioned to the Tribes several times in the past years, changing feedstock from the originally proposed synthetic crude from the Alberta tar sands to the Bakken formation crude may necessitate changes in the environmental analysis for this proposed project. Several sections of the EIS will need to be evaluated to determine if the environmental impacts of refining Bakken crude are significantly different from the impacts of refining synthetic crude. Additional information may be needed later, depending on the magnitude of project changes. We are requesting that the Tribes submit the information as soon as possible. The details of our initial information request are enclosed with this letter. EPA cannot make a decision on the NEPA analysis, until we have determined if the environmental analysis needs to be amended.

In regards to air quality requirements, we have two significant concerns that need to be addressed because they may affect the regulatory status of the refinery project: 1) the likely use of

In regards to air quality requirements, we have two significant concerns that need to be addressed because they may affect the regulatory status of the refinery project: 1) the likely use of Bakken formation crude as feedstock; and 2) uncertainties associated with the Tribes' 2004 "potential to emit" analysis, which was also the subject of public comment on the FEIS. Resolution of either of these concerns may trigger the need for a Prevention of Significant Deterioration (PSD) permit prior to construction of the refinery.

On April 25, 2005, EPA issued a PSD applicability determination letter, stating that a PSD permit would not be required for the proposed refinery based on the air pollutant emissions information the Tribes' consultants submitted for the DEIS. In light of our concerns and analysis, we are withdrawing the PSD determination letter of April 25, 2005.

EPA requests that the Tribes submit additional detailed information regarding the "potential to emit" criteria air pollutants from the proposed refinery based on the likely use of Bakken crude as refinery feedstock. Specific information needed to appropriately assess the proposed refinery's "potential to emit" and related issues are included in the enclosure to this letter. Once we receive this information, we will be able to determine whether a PSD permit is needed.

EPA would like to schedule a meeting with the Tribes and BIA for purposes of developing a path forward to complete the environmental review (EIS) and to initiate the preconstruction air permit (PSD) processes. We recommend that the meeting be held in Denver in April of this year with the Tribes' attorneys and refinery consultants. Please contact Alfreda Mitre, Director of Region 8's Tribal Assistance Program at 303-312-6343.

If you have any other questions about this letter, please contact me at (303) 312-6340. Please have your staff or contractors contact Steve Wharton for clarification of these questions at 303-312-6935.

Sincerely,

Carol L. Campbell

Carol L. Campbell
Acting Deputy Regional Administrator

Enclosures

cc: Alice A. Harwood, Acting Director, Bureau of Indian Affairs Great Plains Region
Diane Mann-Klager, Bureau of Indian Affairs, Great Plains Region
Maria Wiseman, Solicitor, Department of Interior
Malcolm Wolf, Vice Chairman, Three Affiliated Tribes Business Council
V. Judy Brugh, Secretary, Three Affiliated Tribes Business Council
Frank Whitecalfe, Treasurer, Three Affiliated Tribes Business Council
Damon Williams, Attorney, Three Affiliated Tribes
Horace Pipe, Three Affiliated Tribes Refinery Project Manager, HD Geological
Bob Woolley, President, Triad Engineers, Ltd.

Enclosure – March 2010 Letter, Proposed Changes to MHA Nation's Clean Fuels Refinery and Information Request

I. Information Request -- Evaluation of Environmental Impact Statement Analysis

The environmental analysis in the Environmental Impact Statements (EIS) was based on the original proposal to refine synthetic crude. In order to complete the NEPA analysis, EPA will need to evaluate the differences in environmental impacts between refining synthetic crude and the Bakken crude. The scope of the reevaluation will be dependent on the differences between the Bakken and syncrude feedstocks as they relate to potential environmental impacts, including emissions of pollutants, impacts associated with refinery redesign, and feedstock transportation. We anticipate that the environmental analysis for many resource areas will remain the same. However, we anticipate that air emissions and transportation impacts may be affected by a change in feedstock. As more information becomes available, the environmental analysis may need to be revised for other resource areas.

To start the process of determining if the NEPA analysis needs to be revised, we request the Tribes submit the information requested below. As EPA reviews this additional information about the revised project, we may need to supplement this initial information request. As mentioned in the cover letter, EPA cannot make a decision on the NEPA analysis until we can determine whether the environmental analysis needs to be revised.

A. Project changes. Please submit a detailed description of the changes to refinery, including the following:

1. Changes to the footprint of the proposed refinery and revised layout;
2. Any process units to be added or deleted;
3. Any changes in capacity;
4. Chemistry of the Bakken feedstock as related to changes to air or water pollutant emissions (Depending on the degree of changes, the Tribes may need to reapply for the refinery NPDES permit.);
5. Changes in products or feedstocks (e.g., other crude oils such as Sweet Williston or Canadian crude);
6. Information on how the Bakken feed crude would be transported to the refinery (e.g., pipelines, trucking?);
7. Information relating to the development of the Bakken crude on the Reservation, including existing and proposed future oil and gas development and the location of the wells that would supply the Bakken crude; and
8. Any other changes that may be relevant to our assessment of environmental impacts.

II. Information Request – Evaluation of NPDES Permit Application

Please review the original National Pollutant Discharge Elimination Permit System (NPDES) discharge permit application (copy attached) and note any updates or changes. EPA needs this information to assess whether a new NPDES permit application is required or if changes to the proposed NPDES permit are necessary. If you have questions related to this request, please contact Bob Brobst with EPA Region 8's NPDES Program at (303) 312-6129.

III. Information Request -- Prevention of Significant Deterioration (PSD) Permit Applicability Evaluation

In order to determine if the proposed refinery is subject to PSD permitting requirements, the Potential to Emit (PTE) must first be determined for all emitting units at the refinery.

The definitions of "major stationary source" for PSD and "major source" for title V permits are both based on a source's PTE, which is not necessarily the same as potential controlled emissions. National EPA guidance on PTE says that air pollution control equipment can be credited as restricting PTE only if federally enforceable requirements are in place requiring the use of such air pollution control equipment. See letter dated November 27, 1995, from David Solomon, Acting Group Leader, Integrated Implementation Group, Office of Air Quality Planning & Standards, U.S. EPA, to Timothy Mohin of Intel Government Affairs. The letter is available on EPA's website for New Source Review policy and guidance, at: www.epa.gov/region07/programs/artd/air/nsr/nsrmemos/procequip.pdf.

To be federally enforceable, a PTE limit must be enforceable as a practical matter. This is explained in a national EPA guidance memorandum dated June 13, 1989 from Terrell E. Hunt, Associate Enforcement Counsel, Air Enforcement Division, Office of Enforcement and Compliance Monitoring, and from John Seitz, Director, Stationary Source Compliance Division, Office of Air Quality Planning & Standards, to the EPA Regional offices, titled "Guidance on Limiting Potential to Emit in New Source Permitting." The memorandum is available on EPA's website for New Source Review policy and guidance, at: www.epa.gov/region07/programs/artd/air/nsr/nsrmemos/lmitpotl.pdf

There are no federally enforceable requirements currently in place to use air pollution control equipment at the proposed refinery project. Therefore, the potential uncontrolled emissions would need to be used for evaluating PSD applicability. A detailed tabulation on potential uncontrolled emissions needs to be provided to EPA, including emission calculations, citation of the sources of emission factors, and any other supporting information necessary in order for us to validate the emission estimates, and therefore, determine whether or not the refinery project would be a major source under the PSD programs.

Also, please note that EPA determined in the FEIS that the refinery will need to apply for a title V operating permit within 12 months of commencing operation. The likely crude feedstock change does not change this determination.

In order for EPA to determine the PTE of the refinery and evaluate PSD applicability, in addition to the information requested above to evaluate the EIS, please include information on the following refinery emission sources.

A. Process Heaters
   1. All fuel types to be used, including the sulfur content, upper heating values, and lower heating values;
   2. Design heat rates in MMBtu/hr;
   3. Design criteria pollutant emission rates in both lb/hr and ppm dry corrected to 0% O2. Include any emission factor used and the justification or source for the selection of that emission factor.

B. Refinery Flare
   1. Maximum firing rate of pilot;
   2. Maximum input rate of any assist gas;
   3. Maximum criteria pollutant emission rates during normal steady state refinery operations;
   4. Maximum criteria pollutant emission rates expected during process unit startup and shutdown, the length of the associated process unit startup/shutdown, and the number of expected associated startups and shutdowns on a calendar basis;
   5. Include any emission factor used and the justification or source for the selection of that emission factor.

C. Sulfur Recovery Plant
   1. Design basis for the sulfur recovery plant, including elemental sulfur production in tons per day, number of reaction stages in the design, and if the design includes additional end-of-pipe controls such as a thermal oxidation system, maximum fuel firing rate in MMBtu/hr (include lower heating value and higher heating value of any fuels used);
   2. Design criteria pollutant emission rates in both lb/hr and ppm dry corrected to 0% O2, including any emission factor used and the justification or source for the selection of that emission factor.

D. Storage Tanks
   1. Include size (nominal and working volumes), material stored, criteria pollutant emissions, and hazardous air pollutant (HAP) emissions from all refinery feed, intermediate product, final product, and support system storage tanks.

E. Catalyst Regenerators
   1. Include criteria pollutant emission rates in both lb/hr and ppm dry corrected to 0% O2 for all catalyst regeneration processes located at the refinery. Include any emission factor used and the justification or source for the selection of that emission factor.

F. Cooling Tower

1. Tower design criteria (water circulation, total dissolved solids, and drift specification); and PM/PM-10/PM-2.5 and VOC emission rates in lb/hr for all cooling towers. Also include any emission factor used and the justification or source for the selection of that emission factor.

G. Refinery Roads

1. Particulate Matter – PM/PM-10/PM-2.5 emission rates from all paved/unpaved roads located on refinery property in lb/hr, including total distance roundtrip (miles), number of vehicles, number of miles traveled per vehicle, and any emission factor used.

H. Wastewater Treatment

1. VOC emissions for all wastewater treatment operations, including, but not limited to any and all API separator tanks, DAF separators, equalization tanks, and aeration tanks. In addition, include VOC uncontrolled values, control efficiency, and VOC uncontrolled values for each unit.
2. Emission rates in lb/hr of any NOx created in wastewater treatment operations and the source of that NOx, including any emission factors or models used and the justification or source for the selection of those emission factors or models.

I. Equipment Leaks

1. For all components in gas service (compressor seals, connectors, valves, sample connectors, relief valves, open ended lines) include the following:
    a. Total amount of components,
    b. Total amount of estimated leakers,
    c. Total amount of estimated non-leakers,
    d. Leak detection level in ppm,
    e. Emission factor and source of emission factor for leaking components,
    f. Emission factor and source of emission factor for non-leaking, component,
    g. Emissions in lb/yr from leaking components,
    h. Emissions in lb/yr from non-leaking components.

2. For all components in light liquid service (pump seals, connectors, valves, sample connectors, relief valves, open ended lines) include the following:
    a. Total amount of components,
    b. Total amount of estimated leakers,
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    f. Emission factor and source of emission factor for non-leaking component,
    g. Emissions in lb/yr from leaking components,
    h. Emissions in lb/yr from non-leaking components.

J. Materials Loading and Unloading

1. For all feed unloading racks (truck and rail), include estimates of VOC emissions associated with all feed unloading operations. Include VOC uncontrolled values, control efficiency, and VOC uncontrolled values. In addition, include emission rates in lb/hr of any NOx created and the source of that NOx. Include any emission factors or models used and the justification or source for the selection of those emission factors or models. Include the number of trucks and tanks unloaded, and the type and volume of material unloaded per load.
2. For all product loading racks (truck and rail), include estimates of VOC emissions associated with all feed unloading operations. Include VOC uncontrolled values, control efficiency, and VOC uncontrolled values. In addition, include emission rates in lb/hr of any NOx created and the source of that NOx. Include any emission factors or models used and the justification or source for the selection of those emission factors or models. Include the number of trucks and tanks loaded, and the type and volume of material unloaded per load.

K. Diesel Engines

1. For all diesel engines used at the facility (fire water pumps, emergency or backup generators) include the number of kilowatts per unit, hours of operation per year, criteria pollutant emission rates in g/kWh or lb/hp-h, and lb/hr.

L. Hazardous Air Pollutants (HAPs)

1. To the extent that emissions of hazardous air pollutants are not represented by the information collected above, for each emission point emitting a HAP listed in Section 112 of the Clean Air Act, the emission rate of the individual HAP in lbs/hr, the emission factor used to calculate the HAP emission rate, and the justification for the selected emission factor.

This list of emission sources is not meant to be all inclusive. Should, in the course of design, the Tribes determine that emission sources exist that are not reflected in this list, EPA requests that the Tribes notify EPA of the PTE of those sources, and the information used to

derive the PTE. This will assist EPA in determining the overall PTE of the refinery project and the determination of PSD permit status.

The Tribe may request that all or a portion of the information requested above be claimed to be confidential. Information claimed to be confidential must be accompanied by a claim of confidentiality according to the provisions of 40 CFR Part 2, subpart B. Failure to assert such a claim makes the submitted information subject to public disclosure upon request and without further notice to you, pursuant to the Freedom of Information Act, 5 U.S.C. Section 552. Information subject to a business confidentiality claim may only be made available to the public in accordance with 40 CFR Part 2, Subpart B.

If you have any questions in developing the information requested for the PSD Permit Applicability Evaluation above, please contact D.J. Law, with EPA Region 8's Air Program, at (303) 312-7015.

Enclosure 1: March 24, 2010, Proposed Changes to MHA Nation's Clean Fuels Refinery and Information Request

I. Information Request -- Evaluation of Environmental Impact Statement Analysis

The environmental analysis in the Environmental Impact Statements (EIS) was based on the original proposal to refine synthetic crude. In order to complete the NEPA analysis, EPA will need to evaluate the differences in environmental impacts between refining synthetic crude and the Bakken crude. The scope of the reevaluation will be dependent on the differences between the Bakken and syncrude feedstocks as they relate to potential environmental impacts, including emissions of pollutants, impacts associated with refinery redesign, and feedstock transportation. We anticipate that the environmental analysis for many resource areas will remain the same. However, we anticipate that air emissions and transportation impacts may be affected by a change in feedstock. As more information becomes available, the environmental analysis may need to be revised for other resource areas.

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3. Any changes in capacity;
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5. Changes in products or feedstocks (e.g., other crude oils such as Sweet Williston or Canadian crude);
6. Information on how the Bakken feed crude would be transported to the refinery (e.g., pipelines, trucking?);
7. Information relating to the development of the Bakken crude on the Reservation, including existing and proposed future oil and gas development and the location of the wells that would supply the Bakken crude; and
8. Any other changes that may be relevant to our assessment of environmental impacts.

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III. Information Request -- Prevention of Significant Deterioration (PSD) Permit Applicability Evaluation

In order to determine if the proposed refinery is subject to PSD permitting requirements, the Potential to Emit (PTE) must first be determined for all emitting units at the refinery.

The definitions of "major stationary source" for PSD and "major source" for title V permits are both based on a source's PTE, which is not necessarily the same as potential controlled emissions. National EPA guidance on PTE says that air pollution control equipment can be credited as restricting PTE only if federally enforceable requirements are in place requiring the use of such air pollution control equipment. See letter dated November 27, 1995, from David Solomon, Acting Group Leader, Integrated Implementation Group, Office of Air Quality Planning & Standards, U.S. EPA, to Timothy Mohin of Intel Government Affairs. The letter is available on EPA's website for New Source Review policy and guidance, at: www.epa.gov/region07/programs/artd/air/nsr/nsrmemos/procequip.pdf.

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There are no federally enforceable requirements currently in place to use air pollution control equipment at the proposed refinery project. Therefore, the potential uncontrolled emissions would need to be used for evaluating PSD applicability. A detailed tabulation on potential uncontrolled emissions needs to be provided to EPA, including emission calculations, citation of the sources of emission factors, and any other supporting information necessary in order for us to validate the emission estimates, and therefore, determine whether or not the refinery project would be a major source under the PSD programs.

Also, please note that EPA determined in the FEIS that the refinery will need to apply for a title V operating permit within 12 months of commencing operation. The likely crude feedstock change does not change this determination.

In order for EPA to determine the PTE of the refinery and evaluate PSD applicability, in addition to the information requested above to evaluate the EIS, please include information on the following refinery emission sources.

A. Process Heaters

1. All fuel types to be used, including the sulfur content, upper heating values, and lower heating values;
2. Design heat rates in MMBtu/hr;
3. Design criteria pollutant emission rates in both lb/hr and ppm dry corrected to 0% O2. Include any emission factor used and the justification or source for the selection of that emission factor.

B. Refinery Flare

1. Maximum firing rate of pilot;
2. Maximum input rate of any assist gas;
3. Maximum criteria pollutant emission rates during normal steady state refinery operations;
4. Maximum criteria pollutant emission rates expected during process unit startup and shutdown, the length of the associated process unit startup/shutdown, and the number of expected associated startups and shutdowns on a calendar basis;
5. Include any emission factor used and the justification or source for the selection of that emission factor.

C. Sulfur Recovery Plant

1. Design basis for the sulfur recovery plant, including elemental sulfur production in tons per day, number of reaction stages in the design, and if the design includes additional end-of-pipe controls such as a thermal oxidation system, maximum fuel firing rate in MMBtu/hr (include lower heating value and higher heating value of any fuels used);
2. Design criteria pollutant emission rates in both lb/hr and ppm dry corrected to 0% O2, including any emission factor used and the justification or source for the selection of that emission factor.

D. Storage Tanks

1. Include size (nominal and working volumes), material stored, criteria pollutant emissions, and hazardous air pollutant (HAP) emissions from all refinery feed, intermediate product, final product, and support system storage tanks.

E. Catalyst Regenerators

1. Include criteria pollutant emission rates in both lb/hr and ppm dry corrected to 0% O2 for all catalyst regeneration processes located at the refinery. Include any emission factor used and the justification or source for the selection of that emission factor.

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G. Refinery Roads

1. Particulate Matter – PM/PM-10/PM-2.5 emission rates from all paved/unpaved roads located on refinery property in lb/hr, including total distance roundtrip (miles), number of vehicles, number of miles traveled per vehicle, and any emission factor used.

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I. Equipment Leaks

1. For all components in gas service (compressor seals, connectors, valves, sample connectors, relief valves, open ended lines) include the following:
    a. Total amount of components,
    b. Total amount of estimated leakers,
    c. Total amount of estimated non-leakers,
    d. Leak detection level in ppm,
    e. Emission factor and source of emission factor for leaking components,
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    g. Emissions in lb/yr from leaking components,
    h. Emissions in lb/yr from non-leaking components.

2. For all components in light liquid service (pump seals, connectors, valves, sample connectors, relief valves, open ended lines) include the following:
    a. Total amount of components,
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    c. Total amount of estimated non-leakers,
    d. Leak detection level in ppm,
    e. Emission factor and source of emission factor for leaking components,
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    d. Leak detection level in ppm,
    e. Emission factor and source of emission factor for leaking components,
    f. Emission factor and source of emission factor for non-leaking component,
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K. Diesel Engines

1. For all diesel engines used at the facility (fire water pumps, emergency or backup generators) include the number of kilowatts per unit, hours of operation per year, criteria pollutant emission rates in g/kWh or lb/hp-h, and lb/hr.

L. Hazardous Air Pollutants (HAPs)

1. To the extent that emissions of hazardous air pollutants are not represented by the information collected above, for each emission point emitting a HAP listed in Section 112 of the Clean Air Act, the emission rate of the individual HAP in lbs/hr, the emission factor used to calculate the HAP emission rate, and the justification for the selected emission factor.

This list of emission sources is not meant to be all inclusive. Should, in the course of design, the Tribes determine that emission sources exist that are not reflected in this list, EPA requests that the Tribes notify EPA of the PTE of those sources, and the information used to derive the PTE. This will assist EPA in determining the overall PTE of the refinery project and the determination of PSD permit status.

The Tribe may request that all or a portion of the information requested above be claimed to be confidential. Information claimed to be confidential must be accompanied by a claim of confidentiality according to the provisions of 40 CFR Part 2, subpart B. Failure to assert such a claim makes the submitted information subject to public disclosure upon request and without further notice to you, pursuant to the Freedom of Information Act, 5 U.S.C. Section 552. Information subject to a business confidentiality claim may only be made available to the public in accordance with 40 CFR Part 2, Subpart B.

If you have any questions in developing the information requested for the PSD Permit Applicability Evaluation above, please contact D.J. Law, with EPA Region 8's Air Program, at (303) 312-7015.

Enclosure 2: July 9, 2010, Priority Listing of Emissions Sources for Potential to Emit Calculations, MHA Nation's Clean Fuels Refinery

A. Refinery Flare

1. Maximum firing rate of pilot
2. Maximum input rate of any assist gas
3. Maximum criteria pollutant emission rates during normal steady state refinery operations.
4. Maximum criteria pollutant emission rates expected during process unit startup and shutdown, the length of the associated process unit startup/shutdown, and the number of expected associated startups and shutdowns on a calendar basis. Please include emissions associated with malfunctions if they are expected to be different than "routine" startups/shutdowns.
5. Include any emission factor used and the justification or source for the selection of that emission factor.

B. Sulfur Recovery Plant

1. Design basis for the sulfur recovery plant including elemental sulfur production in tons per day, number of reaction stages in the design, and if the design includes additional end-of-pipe controls such as a thermal oxidation system, maximum fuel firing rate in MMBtu/hr (include lower heating value and higher heating value of any fuels used.)
2. Design criteria pollutant emission rates in both lb/hr and ppm dry corrected to 0% O2. Include any emission factor used and the justification or source for the selection of that emission factor.

C. Process Heaters

1. All fuel types to be used, including the sulfur content, upper heating values, and lower heating values;
2. Design heat rates in MMBtu/hr.
3. Design criteria pollutant emission rates in both lb/hr and ppm dry corrected to 0% O2. Include any emission factor used and the justification or source for the selection of that emission factor.

D. Equipment Leaks

1. For all components in gas service (compressor seals, connectors, valves, sample connectors, relief valves, open ended lines) include the following:
    a. Total amount of components
    b. Total amount of estimated leakers
    c. Total amount of estimated non-leakers
    d. Leak detection level in ppm
    e. Emission factor and source of emission factor for leaking components
    f. Emission factor and source of emission factor for non-leaking component

g. Emissions in lb/yr from leaking components
h. Emissions in lb/yr from non-leaking components

2. For all components in light liquid service (pump seals, connectors, valves, sample connectors, relief valves, open ended lines) include the following:
   a. Total amount of components
   b. Total amount of estimated leakers
   c. Total amount of estimated non-leakers
   d. Leak detection level in ppm
   e. Emission factor and source of emission factor for leaking components
   f. Emission factor and source of emission factor for non-leaking component
   g. Emissions in lb/yr from leaking components
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   a. Total amount of components
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   c. Total amount of estimated non-leakers
   d. Leak detection level in ppm
   e. Emission factor and source of emission factor for leaking components
   f. Emission factor and source of emission factor for non-leaking component
   g. Emissions in lb/yr from leaking components
   h. Emissions in lb/yr from non-leaking components

E. Storage Tanks

Include size (nominal and working volumes), material stored, criteria pollutant emissions, and hazardous air pollutant emissions (HAP) from all refinery feed, intermediate product, final product, and support system storage tanks.

F. Catalyst Regenerators

Include criteria pollutant emission rates in both lb/hr and ppm dry corrected to 0% O2 for all catalyst regeneration processes located at the refinery. Include any emission factor used and the justification or source for the selection of that emission factor.

G. Refinery Roads

Include PM/PM-10/PM-2.5 emission rates from all paved/unpaved roads located on refinery property in lb/hr. Include total distance roundtrip (miles), number of vehicles, number of miles traveled per vehicle, and any emission factor used.

H. Wastewater Treatment

Include VOC emissions for all wastewater treatment operations. This includes, but is not limited to any and all API separator tanks, DAF separators,

equalization tanks, and aeration tanks. Include VOC uncontrolled values, control efficiency, and VOC uncontrolled values for each unit. In addition, include emission rates in lb/hr of any NOx created in wastewater treatment operations and the source of that NOx. Include any emission factors or models used and the justification or source for the selection of those emission factors or models.

I. Materials Loading and Unloading

1. For all feed unloading racks (truck and rail), include estimates of VOC emissions associated with all feed unloading operations. Include VOC uncontrolled values, control efficiency, and VOC uncontrolled values. In addition, include emission rates in lb/hr of any NOx created and the source of that NOx. Include any emission factors or models used and the justification or source for the selection of those emission factors or models. Include the number of trucks and tanks unloaded, and the type and volume of material unloaded per load.
2. For all product loading racks (truck and rail), include estimates of VOC emissions associated with all feed unloading operations. Include VOC uncontrolled values, control efficiency, and VOC uncontrolled values. In addition, include emission rates in lb/hr of any NOx created and the source of that NOx. Include any emission factors or models used and the justification or source for the selection of those emission factors or models. Include the number of trucks and tanks loaded, and the type and volume of material unloaded per load.

J. Diesel Engines

For all diesel engines used at the facility (fire water pumps, emergency or backup generators) include the number of kilowatts per unit, hours of operation per year, criteria pollutant emission rates in g/kWh or lb/hp-h, and lb/hr.

K. Cooling Tower

Include design criteria (water circulation, total dissolved solids, and drift specification) and PM/PM-10/PM-2.5 and VOC emission rates in lb/hr for all cooling towers. Include any emission factor used and the justification or source for the selection of that emission factor.

L. Hazardous Air Pollutants (HAPs)

To the extent that emissions of hazardous air pollutants are not represented by the information collected above, for each emission point emitting a listed HAP, the emission rate of the individual HAP in lbs/hr, the emission factor used to calculate the HAP emission rate, and the justification for the selected emission factor shall be provided.

Attachment 1: June 17, 2010, Email to Horace Pipe

Fw: MHA Nation Refinery- draft response- all please review, revise, get comments to Steve

Carol Campbell hpipe 06/17/2010 08:47 AM

Steve Wharton, Alfreda Mitre, Bohan.Suzanne, Dana Allen, Peter Ornstein, Carl Daly, Tuber.Steve Hide Details

Carol Campbell/R8/USEPA/US

hpipe@mhanation.com

Horace (Mr. Pipe)

Since our meeting on April 20, 2010, we have been working with your consultants to help them better understand our requests for more air information on the refinery. Also, we thought we made it clear with our March 2010 letter and again in our April meeting that we did not have adequate information to show that your facility was a minor air source, and that the previous information you submitted to us appeared to be incorrect. Our calculations with similar refinery units lead us to believe that your facility would likely be a major source. We reiterated the need to prepare an air permit application for a PSD permit or to provide the list of information requested in our March letter to help us make a PSD determination. We also stated that the NEPA process is on hold pending this information. If it is determined that you need a PSD permit, once we get a complete air application we will make every effort to do a parallel process with NEPA and air to expedite the facility's construction start date. EPA does not currently have a minor source permitting program, and therefore, your facility cannot be a synthetic minor source (where emission controls you plan to build into the facility can be considered in calculating potential emissions). This leaves obtaining a PSD permit as your only option if in fact your project's potential to emit exceeds the 100 ton per year emissions threshold.

To avoid further confusion, we will ensure that you are provided the opportunity to participate in all phone calls we have with your consultants so that you are fully knowledgeable of where we are in this process. Triad Engineering has made a recent request for further discussions on this matter. I strongly recommend that the tribe retain an environmental consultant with expertise in Clean Air Act permitting matters to help you develop an air permit application in an expeditious manner.

We will also send you a letter soon to reiterate our March letter with emphasis placed on the most important information needed so you can focus on preparing it as quickly as possible.

Thanks. cc

Carol L. Campbell, Assistant Regional Administrator
United States Environmental Protection Agency, Region 8

1595 Wynkoop Street
Denver, Colorado
80202

303-312-6340 (W)
303-312-6071(fax)

Attachment 2: June 23, 2010, Email to Horace Pipe

Response to your 6/23/10 email

Carol Campbell hpipe

06/25/2010 05:59 PM

Steve Wharton, Kimi Matsumoto, Alfreda Mitre, Dana Allen, bohan.Suzanne

Show Details

This message has been forwarded.

Horace, I have asked the TAT Refinery Team to prepare responses to the questions you raised in your email to me dated June 23. 2010. Those responses, as well as our understanding of your questions, are included below. The intent of this email is to clarify and respond to the points raised in your email only. It does not supplant in any way the request EPA made to the Tribes on March 24, 2010.

I also understand that you. Scott Eagle and Frank Whitecalfe of the Tribal Business Council, and representatives from Triad Engineering, had a conference call with Steve Wharton and Donald Law of my office on June 23, 2010, during which you further discussed EPA's requests for technical information on the proposed refinery. Please continue to work with Steve and the rest of the TAT Refinery Team to resolve the outstanding information requests.

Carol L. Campbell, Assistant Regional Administrator
United States Environmental Protection Agency, Region 8
1595 Wynkoop Street
Denver, Colorado
80202

303-312-6340 (W)
303-312-6071(fax)

"Carol,

Thanks for the response. I have a couple of issue that I would need you to clarify. The first point is your calculations with a similar refinery. Can we

see them and also the refinery that is similar to ours. Since the last refinery permitted in the US was in 1976, technology has come a long way. Number 2 is the EPA's lack of a Minor Source Permit. Since EPA does not have this capability, we automatically fall into a major source? The last point is the Tribe retaining an environmental consultant. Remember that two Federal Agencies, the BIA and the EPA were the two co-leads and wrote the EIS.As a Federal Agency, don't you have a trust responsibility to the Tribe? Thanks for clearing up these points.

Horace Pipe, Refinery Project Manager"

Question 1: Can TAT see EPA's emissions calculations and which refinery is similar to the TAT refinery?

Answer: It is highly unlikely that any two refineries would operate with identical processes, identical process units, and process identical feedstocks. In looking at smaller refineries operating within the United States (see table below), one can see that each of the refineries examined reported criteria pollutants above PSD major source thresholds. Without definitive documentation to prove otherwise, in our professional judgment, even with the new advances in operations and technology you are planning, a refinery the size that you are proposing could have emissions above the PSD major sources thresholds. By addressing the questions EPA presented to the Tribes in our March 24, 2010 letter, and providing appropriate documentation, EPA will be able to determine if the proposed project qualifies as a minor source or as a major source.

Selected Refineries in EPA Region 8						
Refinery	Location	Barrels per stream day	Reported CO	Reported NOx	Reported SO2	Reported VOC
Silver Eagle	Woods Cross, Utah	11000	36.1	92.2	3.38	168
Holly	Woods Cross, Utah	26400	679	314	542	166
Wyoming Refining	New Castle, Wyoming	14200	70	246	778	97.3
Montana Refining	Great Falls, Montana	10000	34	83	691	234

Notes: Emissions data (Tons/Year) from EPA's Envirofacts Warehouse (www.epa.gov/enviro)
Process size data from US Energy Information Administration (www.eia.doe.gov)

Question 2: Since EPA currently does not have the ability to issue Minor Source air permits in Indian country, does that automatically make the TAT refinery a major source?

Answer: EPA's current lack of a Minor Source Permitting Program for sources operating in Indian country does not necessarily mean that the proposed refinery project is a major source. The project's major or minor source status is based solely upon the project's Potential to Emit. Based upon that determination, we would be able to then assist the Tribe in complying with federal environmental statutes and regulations..

Question 3: Doesn't EPA have a trust responsibility to the Tribes?

Answer: Please be assured that EPA is fully aware of the federal government's trust responsibility to the Three Affiliated Tribes. Throughout our Agency's involvement in this project, we have consulted extensively with the Tribal government. EPA is committed to continuing to work with the Tribes, with the goal of ensuring that, as the project proceeds, it does so in compliance with federal environmental statutes and regulations. EPA's recommendation that the Tribes acquire expertise to prepare an air permit application is consistent with this goal.

THIS PERMIT APPLICATION FORM WAS ELECTRONICALLY GENERATED BY P.A.S.S.

FORM APPROVED. OMB No. 2040-0086

FORM 1 GENERA

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

S		T/A	C
F	-		D

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to **waters of the U.S.?** (FORM 2A)		X		B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge** to **waters of the U.S.?** (FORM 2B)		X	
C. Is this a facility which currently results in **discharges** to **waters of the U.S.** other than those described in A or B above? (FORM 2C)		X		D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge** to **waters of the U.S.?** (FORM 2D)	X		
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)				F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)			
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)				H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel or recovery of geothermal energy? (FORM 4)			
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)				J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)			

III. NAME OF FACILITY

C 1: MHA Nation Clean Fuels Refinery

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first & title)*	B. PHONE *(area code & no.)*
C 2: Horace Pipe Refiery Project Manager	7017265894

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

C 3: 25300 366 Street S.W.

B. CITY OR TOWN	C. STATE	D. ZIP CODE
C 4: Makoti	ND	58756

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

C 5: 25300 366 Street S.W.

B. COUNTY NAME

Ward

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
C 6: Makoti	ND	58756	

VII. SIC CODES *(4-digit, in order of priority)*

A. FIRST		B. SECOND	
C 7 2911	(specify) Petroleum Refinery	C 7	(specify)
C. THIRD		**D. FOURTH**	
C 7	(specify)	C 7	(specify)

VIII. OPERATOR INFORMATION

A. NAME	B. Is the name listed in Item VIII-A also the owner?
C 8 Three Affiliated Tribes	Yes

C. STATUS OF OPERATOR *(Enter the appropriate letter into the answer box; if "Other", specify.)*			D. PHONE *(area code & no.)*
F=FEDERAL S=STATE P=PRIVATE M=PUBLIC *(other than federal or state)* O=OTHER *(specify)*	O	(specify) Indian Tribe	C A 7016274781

E. STREET OR P.O. BOX			
404 Frontage Road			
F. CITY OR TOWN	**G. STATE**	**H. ZIP CODE**	**IX. INDIAN LAND**
C 6 New Town	ND	58763	Is the facility located on Indian lands? Yes

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES *(Discharges to Surface Water)*		D. PSD *(Air Emissions from Proposed Sources)*	
C T I 9 N		C T I 9 P	
B. UIC *(Underground Injection of Fluids)*		**E. OTHER**	
C T I 9 U		C T I 9	(specify)
C. RCRA *(Hazardous Wastes)*		**E. OTHER**	
C T I 9 U		C T I 9	(specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS *(provide a brief description)*

The MHA Nation proposes to construct a petroleum refinery to process 10,000 barrels per stream day (BPSD) of synthetic crude from northern Alberta obtained from a nearby existing pipeline. The refinery will be a new state-of-the-art facility that will be able to meet current and proposed 2008 EPA regulations. The facility will be the most technologically advanced refinery in the United States and it will produce the cleanest gasoline and diesel in the country. The project would employ 600 to 1,000 positions during construction and 65 to 70 positions during operation. See attached description of the refinery for more information.

XIII. CERTIFICATION *(see instructions)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in teh application, I believe that the information is true, accurate and complete. I am aware that there are significant penalities for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE *(type or print)*	B. SIGNATURE	C. DATE SIGNED
Tex Hall Chairman of the MHA Nation		

COMMENTS FOR OFFICIAL USE ONLY

C C

EPA I.D. Number (copy from item 1 of Form 1)	*Form Approved* *OMB No. 2000-0060* *Approval expires 3-31-86*	This permit application form was electronically generated by P.A.S.S.
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FORM 2D NPDES

EPA New Sources and New Dischargers Application for Permit to Discharge Process Wastewater

I. Outfall Location

For each outfall, list the latitude and longitude, and the name of the receiving water.

Outfall Number *(list)*	Latitude			Longitude			Receiving Water *(name)*
	Deg	Min	Sec	Deg	Min	Sec	
01	101.00	52.00	8.72	47.00	58.00	29.14	East Fork Shell Creek
02	10.00	52.00	10.73	47.00	58.00	25.09	East Fork Shell Creek

II. Discharge Date *(When do you expect to begin discharging?)* 10/01/2006

III. Flows, Sources of Pollution, and Treatment Technologies

A. For each outfall, provide a description of (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and stormwater runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

EPA MHA-010715

EPA I.D. Number (copy from item 1 of Form 1)	Form Approved OMB No. 2000-0060 Approval expires 3-31-86	This permit application form was electronically generated by P.A.S.S.
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Outfall Number	1. Operations Contributing Flow *(list)*	2. Average Flow *(include units)*	3. Treatment *(Description or List Codes from Table 2D-1)*
01	Boiler Blowdown	10 gpm	1-F Evaporation
01	Uncontaminated Storm Water	30 gpm	1-H Flotation
02	Stormwater in Product Loading Area	< 1 gpm	1-F Evaporation
02	Stormwater in Process Area	3.4 gpm	1-H Flotation
02	Process closed drains	20 gpm	API Separator (see attached sheets)
02	Process water drains with benzene	10 gpm	Bioreactor System (see attached sheets)
02			Sour Water Stripper
02			Clarifier
02			4-C Waste Water Recycling
02			Thickening
02			Drying

B. Attach a line drawing showing the water flow through the facility. Indicate the sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item III-A. Construct a water balance in the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for vertain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or

C. Except for storm runoff, leaks, or spills, will any of the discharges described in item III-A be internittent or seasonal? ☐ Yes *(complete the following table)* ☒ No *(go to Item IV)*

IV. Production

If there is an applicable production-based effluent guideline or NSPS, for each outfall list the estimated level of production (projection of actual production level, not design), expressed in the terms and units used in the applicable effluent guidline or NSPS, for each of the first 3 years of operation. If production is likely to vary, you may also submit alternative estimates (attach a separate sheet).

V. Effluent Characteristics

A, and B: These items require you to report estimated amounts (both concentration and mass) of the pollutants to be discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and should be completed in accordance with the specific instructions for that part. Data for each outfall should be on a separate page. Attach additional sheets of paper if necessary.

General Instructions *(See table 2D-2 for Pollutants)*
Each part of this item requests you to provide an estimated daily maximum and average for certain pollutants and the source of information. Data for all pollutants in Group A, for all outfalls, must be submitted unless waived by, the permitting authority. For all outfalls, data for pollutants in Group B should be reported only for pollutants which you believe will be present or are limited directly by an effluent limitations guideline or NSPS or indirectly through limitations on an indicator pollutant.

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OUTFALL NO.: **01**

1. Pollutant	2. Maximum Daily Value *(include units)*		3. Average Daily Value *(include units)*		4. Source *(see instructions)*
	a. mass	b. concentration	a. mass	b. concentration	
Total Suspended Solids (TSS)	75.00 lbs	125.00 ppm	60.00 lbs	125.00 ppm	1, 2
Selenium, Total	0.00 lbs	0.01 ppm	0.00 lbs	0.01 ppm	estimated - concentration depends on quality of water supply

OUTFALL NO.: **02**

1. Pollutant	2. Maximum Daily Value *(include units)*		3. Average Daily Value *(include units)*		4. Source *(see instructions)*
	a. mass	b. concentration	a. mass	b. concentration	
Biochemical Oxygen Demand (BOD)	15.00 lbs	30.00 ppm	12.00 lbs	30.00 ppm	1, 2
Chemical Oxygen Demand (COD)	59.00 lbs	115.00 ppm	47.00 lbs	115.00 ppm	1, 2
Total Suspended Solids (TSS)	7.50 lbs	15.00 ppm	6.00 lbs	15.00 ppm	1, 2
Oil and Grease	1.63 lbs	25.00 ppm	1.30 lbs	25.00 ppm	1, 2
Nickel, Total	0.03 lbs	0.05 ppm	0.02 lbs	0.05 ppm	estimated
Selenium, Total	0.00 lbs	0.01 ppm	0.00 lbs	0.01 ppm	estimated - depends on quality of water supply
Benzene	0.00 lbs	0.01 ppm	0.00 lbs	0.01 ppm	1, 2
Phenol	2.50 lbs	5.00 ppm	2.00 lbs	5.00 ppm	1, 2

C. Use the space below to list any of the pollutants listed in Table 2D-3 of the instructions which you know or have reason to believe will be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it will be present.

EPA I.D. Number (copy from item 1 of Form 1)	*Form Approved* *OMB No. 2000-0060* *Approval expires 3-31-86*	This permit application form was electronically generated by P.A.S.S.
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1. Pollutant	2. Reason for Discharge
Carbon Disulfide	Production in crude
Diethyl amine	Sulfur extraction solvent
Methyl mercaptan	No measurable concentration - may have some left on inside of pipeline from transporting natural gas
Napthenic acid	In crude in very small quantities
Monomethyl amine	Sulfur extraction solvent
Vanadium	In crude oil

VI. Engineering Report on Wastewater Treatment

A. If there is any technical evaluation concerning your wastewater treatment, including engineering reports or pilot plant studies, check the appropriate box below.

☐ Report Available ☒ No Report

B. Provide the name and location of any existing plant(s) which, to the best of your knowledge, resembles this production facility with respect to production processes, wastewater constituents, or wastewater treatments.

Name	Location

VII. Other Information

Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer any other information you feel should be considered in establishing permit limitations for the proposed facility. Attach additional sheets if necessary.

See attached information on the refinery and processes.

VIII. Certification

A. Name and Official Title (type or print)	B. Phone Number
Tex Hall Chairman, Three Affiliated Tribes	(701) 627-4781
C. Signature	D. Date Signed

EPA I.D. Number (copy from item 1 of Form 1)	*Form Approved*	This permit application
-	*OMB No. 2000-0060*	form was electronically
	Approval expires 3-31-86	generated by P.A.S.S.

FORM 2F NPDES

EPA Application for Permit to Discharge Stormwater Discharges Associated with Industrial Activity

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 28.6 hours per application, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate, any other aspect of this collection of information, or suggestions for improving this form, including suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency 401 M St., SW, Washington, DC 20460, or Director, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

I. Outfall Location

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. Outfall Number *(list)*	B. Latitude			C. Longitude			D. Receiving Water *(name)*
	Deg.	Min.	Sec.	Deg.	Min.	Sec.	
02	101.0(	52.00	10.73	47.00	58.00	25.09	East Fork Shell Creek

II. Improvements

A. Are you now required by any Federal, State, or local authority only to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

B. You may attach additional sheets describing any additional water pollution (or other environmental projects which may affect your discharges) you now have under way or which you plan. Indicate whether each program is now under way or planned, and indicate your actual or planned schedules for construction.

1. Project Description	2. Project Schedule	3. Project Underway

III. Site Drainage Map

Attach a site map showing topography (or Indicating the outline of drainage areas served by the outfall(s) covered in the application if a topographic map is unavailable) depicting the facility including: each of its intake and discharge structures; the drainage area of each storm water outfall; paved areas and buildings within the drainage area of each storm water outfall, each known past or present areas used for outdoor storage or disposal of significant materials, each existing structural control measure to reduce pollutants in storm water runoff, materials loading and access areas, areas where pesticides, herbicides, soil conditioners and fertilizers are applied; each of its hazardous waste treatment, storage or disposal units (including each area not required to have a RCRA permit which is used for accumulating hazardous waste under 40 CFR 262.34); each well where fluids from the facility are injected underground; springs, and other surface water bodies which receive storm water discharges from the facility.

EPA I.D. Number (copy from item 1 of Form 1)	*Form Approved* *OMB No. 2000-0060* *Approval expires 3-31-86*	This permit application form was electronically generated by P.A.S.S.
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IV. Narrative Description of Pollutant Sources

A. For each outfall, provide an estimate of the area (include units) of impervious surfaces (including paved areas and building roofs) drained to the outfall, and an estimate of the total surface area drained by the outfall.

Outfall Number	Area of Impervious Surface *(provide units)*	Total Area Drained *(provide units)*
02	200,000 square feet	1,350,000 square feet

B. Provide a narrative description of significant materials that are currently or in the past three years have been treated, stored or disposed in a manner to allow exposure to storm water; method of treatment, storage, or disposal; past and present materials management practices employed, in the last three years, to minimize contact by these materials with storm water runoff; materials loading and access areas; and the location, manner, and frequency in which pesticides, herbicides, soil conditioners, and fertilizers are applied.

Not applicable - new facility

C. For each outfall, provide the location and a description of existing structural and nonstructural control measures to reduce poilutants in storm water runoff; and a description of the treatment the storm water receives including the schedule and type of maintenance for contr ol and treatment measures and the ultimate disposal of any solid or fluid wastes othar than by discharge.

Outfall Number	Treatment	List Codes from Table 2F-1
02	Evaporation	1-F
02	Flotation	1-H
02	API Separator (see attached sheets)	
02	Bioreactor System (see attached sheets)	
02	Sour Water Stripper	
02	Clarifier	
02	Waste Water Recycling	4-C
02	Thickening	
02	Drying	

V. Nonstormwater Discharges

A. I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of nonstormwater discharges, and that all nonstormwater discharges from these outfall(s) are identified in either an accompanying Form 2C or Form 2E application for the outfall.

Name and Official Title (type or print)	Signature	Date Signed
Tex Hall Chairman, Three Affiliated Tribes		

B. Provide a description of the method used, the date of any testing, and the onsite drainage points that were directly observed during a test.

VI. Significant Leaks or Spills

Provide existing information regarding the history of significant leaks or spills of toxic or hazardous pollutants at the facility in the last three years, including the approximate date and location of the spill or leak, and the type and amount of material released.

Not applicable - new facility

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VII. Discharge Information

A, B, C & D: See instructions before proceeding. Complete one set of tables for each outfall. Annotate the outfall number in the space provided.
Parts VII-A, VII-B, VII-C, and VII-D will be printed at the end of the permit application.

E: Potential discharges not covered by analysis - Is any pollutant listed in Table 2F-2 a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐ Yes *(list all such pollutants below)* ☒ No *(go to Section IX)*

VIII. Biological Toxicity Testing Data

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☐ Yes *(list all such pollutants below)* ☒ No *(go to Section IX)*

A. Test Name	B. Test Description

IX. Contract Analysis Information

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☐ Yes *(list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)* ☒ No *(go to Section X)*

A. Name	B. Address	C. Area Code & Phone No.	D. Pollutants Analyzed

X. Certification

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 person directly responsible for gathering the information, the information submitted is, to the best of my knowledge an 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.

A. Name and Official Title (type or print)	B. Area Code & Phone No.
Tex Hall Chairman, Three Affiliated Tribes	
C. Signature	D. Date Signed

VII. Discharge Information *(continued)*

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Outfall Number: 02

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*				Average Values *(include units)*				Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 30 Minutes		Flow-Weighted Composite		Grab Sample Taken During First 30 Minutes		Flow-Weighted Composite			
	Conc.	Mass	Conc.	Mass	Conc.	Mass	Conc.	Mass		
Oil and Grease										
Biological Oxygen Demand (BOD5)										
Chemical Oxygen Demand (COD)										
Total Suspended Solids (TSS)										
Total Kjeldahl Nitrogen										
Nitrate plus Nitrite Nitrogen										
Total Phosphorous										
pH	Minimum		Maximum		Minimum		Maximum			

EPA I.D. Number (copy from item 1 of Form 1)	*Form Approved*	This permit application
-	*OMB No. 2000-0060*	form was electronically
	Approval expires 3-31-86	generated by P.A.S.S.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Outfall Number:

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*				Average Values *(include units)*				Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 30 Minutes		Flow-Weighted Composite		Grab Sample Taken During First 30 Minutes		Flow-Weighted Composite			
	Conc.	Mass	Conc.	Mass	Conc.	Mass	Conc.	Mass		

EPA I.D. Number (copy from item 1 of Form 1)	*Form Approved*	This permit application
-	*OMB No. 2000-0060*	form was electronically
	Approval expires 3-31-86	generated by P.A.S.S.

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete on table for each outfall.

Outfall Number:

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*				Average Values *(include units)*				Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 30 Minutes		Flow-Weighted Composite		Grab Sample Taken During First 30 Minutes		Flow-Weighted Composite			
	Conc.	Mass	Conc.	Mass	Conc.	Mass	Conc.	Mass		

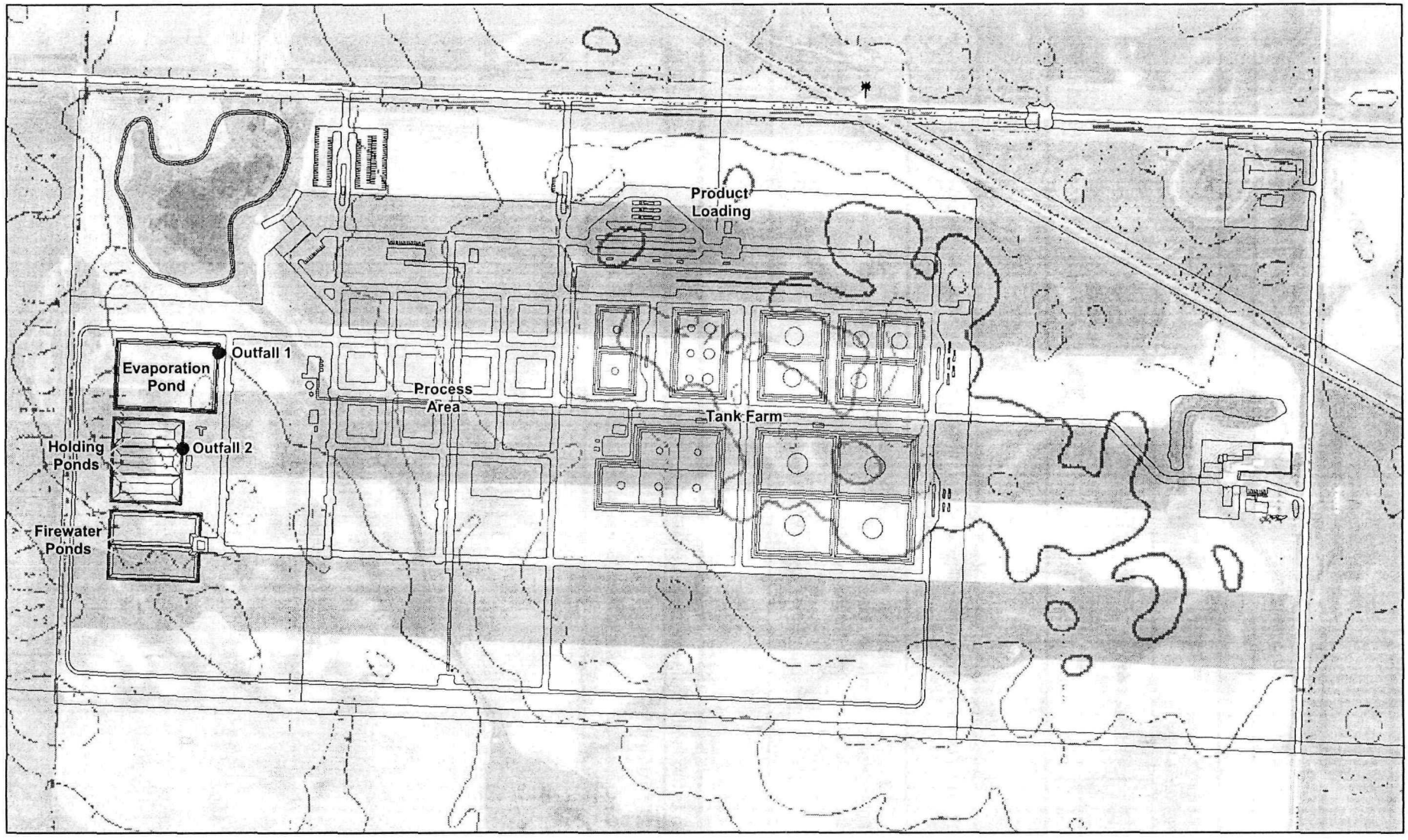
Part D - Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample.

1. Date of Storm Event	2. Duration of Storm *(in minutes)*	3. Total rainfall during storm event *(in inches)*	4. Number of hours between beginning of storm measured and end of previous measureable rain event.	5. Maximum floe rate from rain event *(gallons or specify units)*	6. Total flow from rain event *(gallons or specify units)*	7. Season sample was taken	8. Form of Precipitation *(rainfall, snowmelt)*

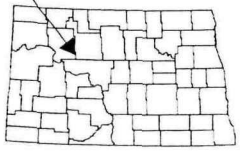
9. Provide a description of the method of flow measurement or estimate.

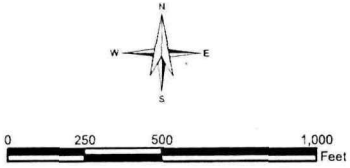
RAINFALL FREQUENCY ATLAS OF THE UNITED STATES

The Rainfall Frequency Atlas of the United States shows the 100-year, 24-hour storm event would generate about 4.5 inches of rainfall. The estimates were developed using 5 inches as the storm event.



Area of Detail





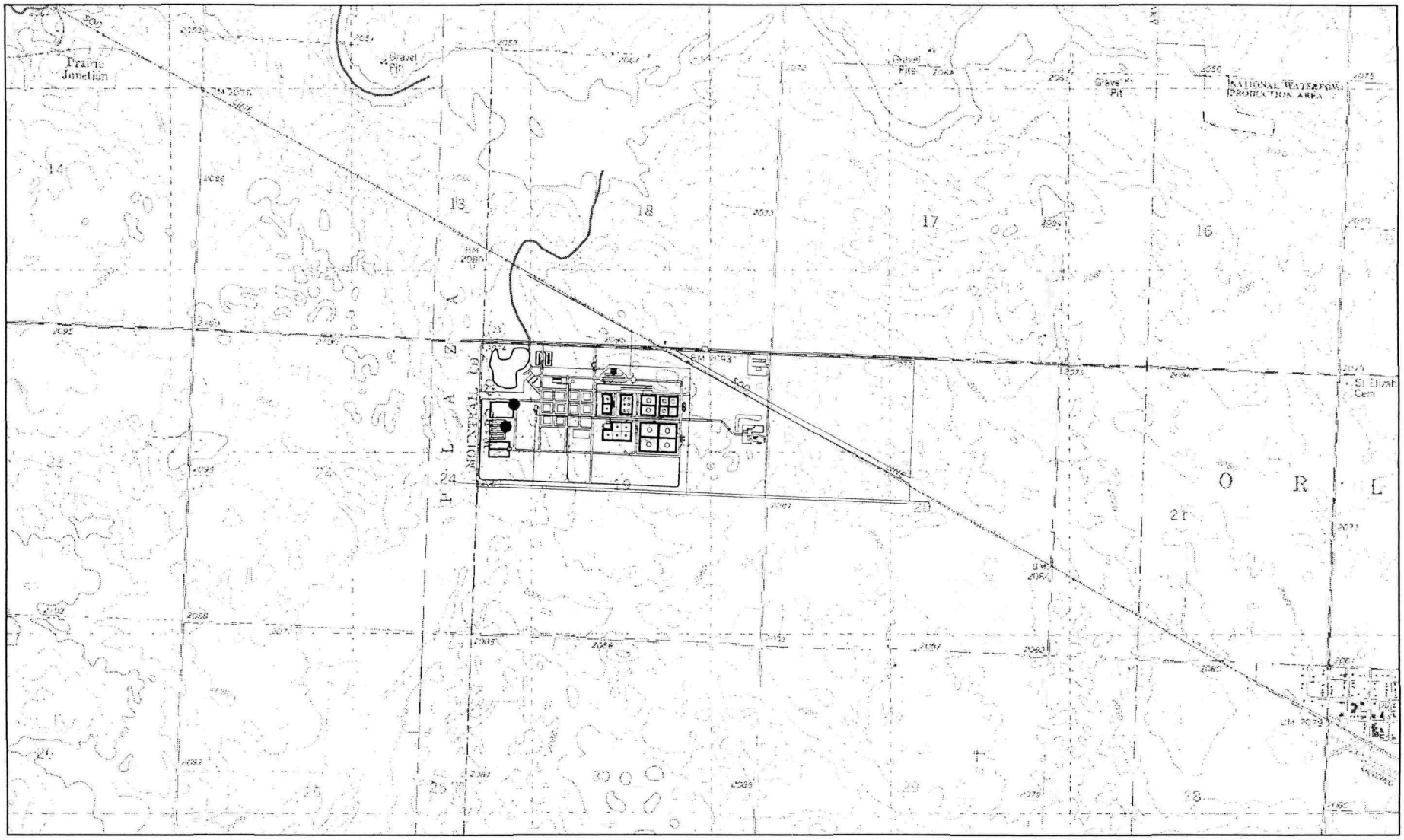
Transverse Mercator Projection
1983 North American Datum
Zone 14

FT. BERTHOLD REFINERY EIS

FIGURE 1
SITE FACILITY LAYOUT

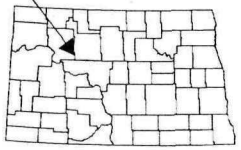
ANALYSIS AREA: MOUNTRAIL & WARD COUNTIES, ND	
Date: 05/07/04	File: I:/1600/../site.mxd
Drawn By: MSH	

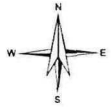
EPA MHA-010726



Source Quad: USGS 7.5' Quadrangle--Makoti, ND; Wabek, ND

Area of Detail





0 250 500 1,000 1,500 2,000 2,500 3,000 3,500 4,000 Feet

Transverse Mercator Projection
1983 North American Datum
Zone 14

Legend

- Outfall Locations
- East Fork Shell Creek

FT. BERTHOLD REFINERY EIS

FIGURE 2
GENERAL LOCATION OF REFINERY

ANALYSIS AREA: MOUNTRAIL & WARD COUNTIES, ND	
Date: 03/16/04	File: I:/1600/../FacilityQuad.mxd
Drawn By: MSH	

EPA MHA-010727

Application Data Sheet
ADS 2900-08
August 2002

Petroleum Refining Industry

API SEPARATORS

BACKGROUND

API (American Petroleum Institute) Separators are the first step in the treatment of refinery wastewater contaminated by oil and oil bearing sludge. In addition to gross oil contamination, the wastewater also contains oil entrained as an emulsion.

The API separator removes only non-emulsified oil and oil bearing sludge from refinery wastewater, by allowing it to float to the surface of the water, where it can be skimmed off (Figure 1) and deposited in a recovery holding tank.

Following this primary step, further treatment processes are used to more completely remove entrained oil in all forms, including emulsified oil, and to condition the water to meet the specifications for release into a stream or body of water. Treatment downstream of the API separators can include chemical flocculation to remove emulsified oil and special processes for the removal of phenols and sulfides.

PROCESS

pH control is used at the discharge from the API Separator to enhance the efficiency of secondary waste treatment processes, such as flocculation. However, because the entrained oil is not completely removed by the separator, the pH sensor can become fouled by the oil remaining in the emulsion form. As a result, the pH sensor has to be removed and cleaned frequently.

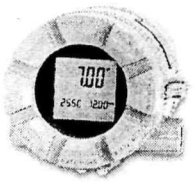
This creates the need for increased maintenance attention, and raises the cost of having an accurate pH measurement at this point.

INSTRUMENTATION

The sensor of choice for this application is the 396R pH Sensor, which employs the TUpH™ junction, to provide the fouling resistance required to minimize maintenance cost in this application. The transmitter recommended for this application is the 3081 Smart Two-Wire Transmitter. It has been designed for the rugged environment found in refineries and chemical plants. The Model 3081 provides advanced sensor diagnostics, which can alert the user to the build up of a coating and help predict maintenance schedules.

INSTRUMENTATION

Model 3081 pH/ORP HART Smart Two-Wire Transmitter



- Hand-held infrared remote control link to activate all the transmitters functions.
- Large custom LCD display.
- NEMA 4X (IP65) weatherproof, corrosion-resistant enclosure.
- Comprehensive pH glass and reference diagnostics.
- Non-volatile EEPROM memory to hold data in event of power failure.

Model 396R pH/ORP TUpH Retractable Sensor

- Patented polypropylene reference junction[1] and secondary reference pathway[2] mean longer sensor life and reduced maintenance in process solutions containing heavy solids.
- Advanced on-line sensor diagnostics for use with the Models 54e pH/ORP Analyzer[2] or the 3081 pH/ORP Transmitter.
- Versatile. Can be used in numerous loop configurations with all Rosemount Analytical and other manufacturers instruments.

1 U.S. Patent No. 5,152,882, Foreign Patent Pending

2 U.S. and Foreign Patents Pending

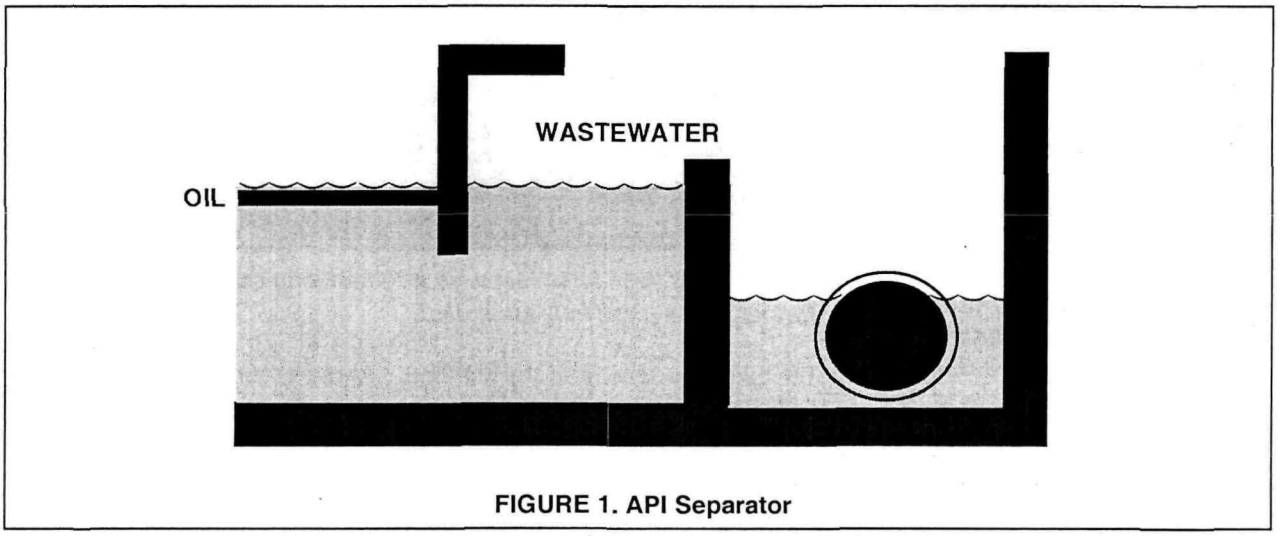


FIGURE 1. API Separator

The right people, the right answers, right now.

ROSEMOUNT ANALYTICAL
CUSTOMER SUPPORT CENTER
1-800-854-8257

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Irvine, CA 92606 USA
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Fax: (949) 474-7250
http://www.RAuniloc.com

EMERSON
Process Management

EPA MHA-010729

MONROE
API Oil/Water Separator

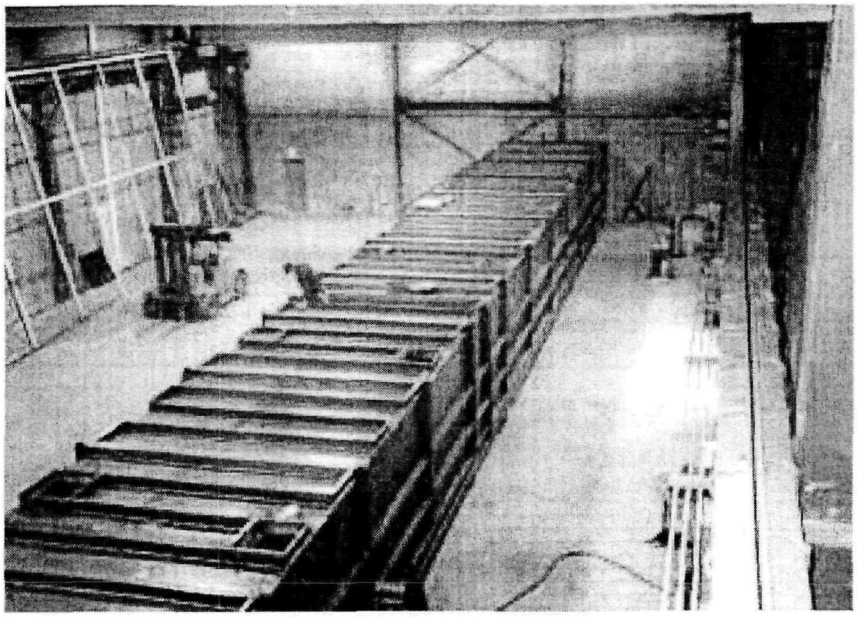
MONROE ENVIRONMENTAL
Manufacturer of Industrial Filtration Systems

Monroe custom oil/water separators are designed per American Petroleum Institute standards (API) for above and below ground installations.

The Monroe API Separator is designed for the removal of free oil and solids. If the removal of soluble substances is required, Monroe can provide additional treatment equipment or will recommend other Monroe Clarifiers.

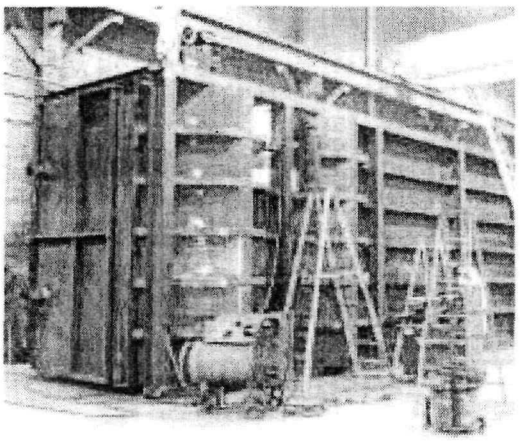
Gravity differential settling is used to separate the oil from water. Monroe engineers will evaluate the type and state of the oil and the characteristics of the waste stream to determine the proper design and size of the separator. Oil globule size, specific gravity of the oil and wastewater, temperature and viscosity should be considered. Suspended solids will also be settled from the wastewater and provisions of this will be part of the design.

Monroe is able to provide API Separators in large shop-fabricated and assembled units to reduce installation costs. Separators as large as 14 feet wide x 70 feet long can be shipped from our factory in one piece fully assembled.



Separators as large as 14 feet wide x 70 feet long can be shipped from our factory in one piece fully assembled.

The basic components of the Monroe Separator include an inlet section with diffusion wall, separator channel, an oil retention baffle and an outlet section. Depending on your requirements, additional options can include trash screens, a slotted pipe skimmer, surface conveyors, and a bottom drag or screw conveyor for solids handling.

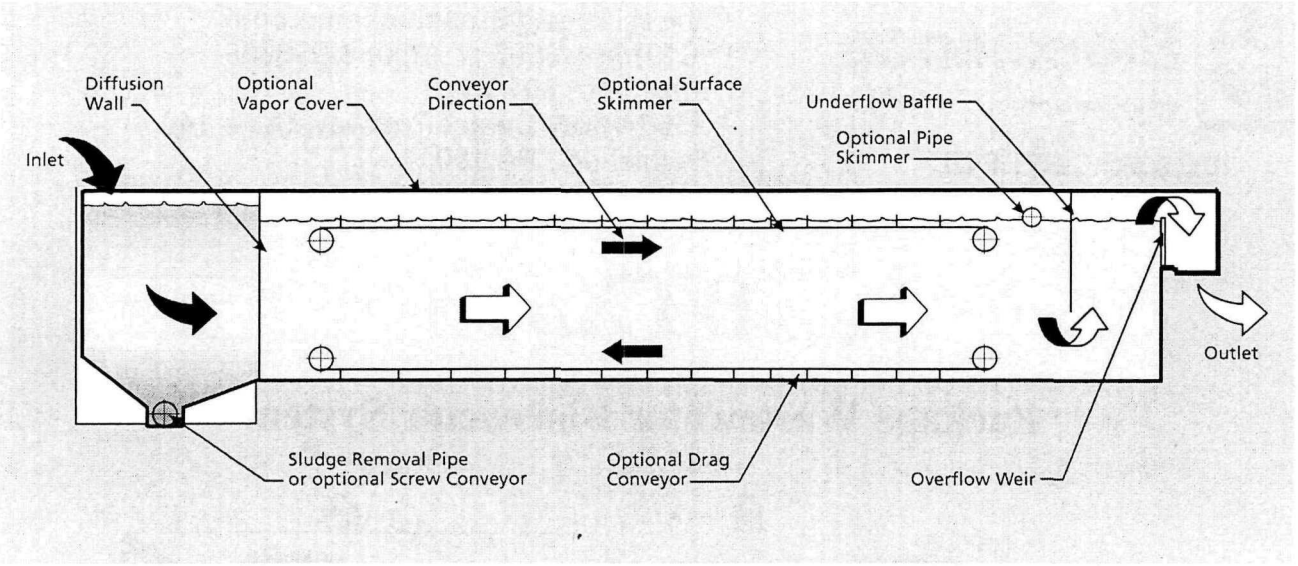


Complete covers of various materials are available including the necessary environmental and safety requirements. These provisions may include a nitrogen blanketing system, carbon filtering to remove hydrocarbons from the blanket gas, exhaust flares and pressure relieving valves and access doors.

Above ground Separators are normally constructed from carbon steel with corrosion resistant coatings. Below ground Separators are normally fabricated from steel or concrete and may include the additional requirements for containment and leak detection.

Existing API Separators can be upgraded with new internal components. In addition, Monroe parallel plate packs can be added to existing API Separators to increase the effective surface area which will provide increased oil removal and increased wastewater flow capacity.

MONROE API Oil/Water Separator



Special Features

- Remove oil from wastewater
- Custom designed for your application
- Prefabricated units from 10 to 500 gallons per minute
- Separators shipped one piece up to 14 feet wide x 70 feet long
- Mechanical surface skimmer and pipe skimmer available
- Mechanical drag conveyor available
- Vapor covers available with environmental and safety equipment
- Retrofit components to upgrade existing separators
- Monroe Parallel Plate packs to improve oil removal in existing separators

Monroe Environmental designs and builds other liquid cleaning and recycling equipment including:

- Compact Clarifiers (horizontal flow)
- Oil Skimmers
- Circular Clarifiers
- API Separators
- Complete Engineered Systems

MONROE ENVIRONMENTAL
Manufacturer of Industrial Filtration Systems
810 West Front St., P.O. Box 806
Monroe, Michigan 48161 USA
Phone: **1-800-992-7707** or 734-242-7654
Fax: 734-242-5275
www.mon-env.com

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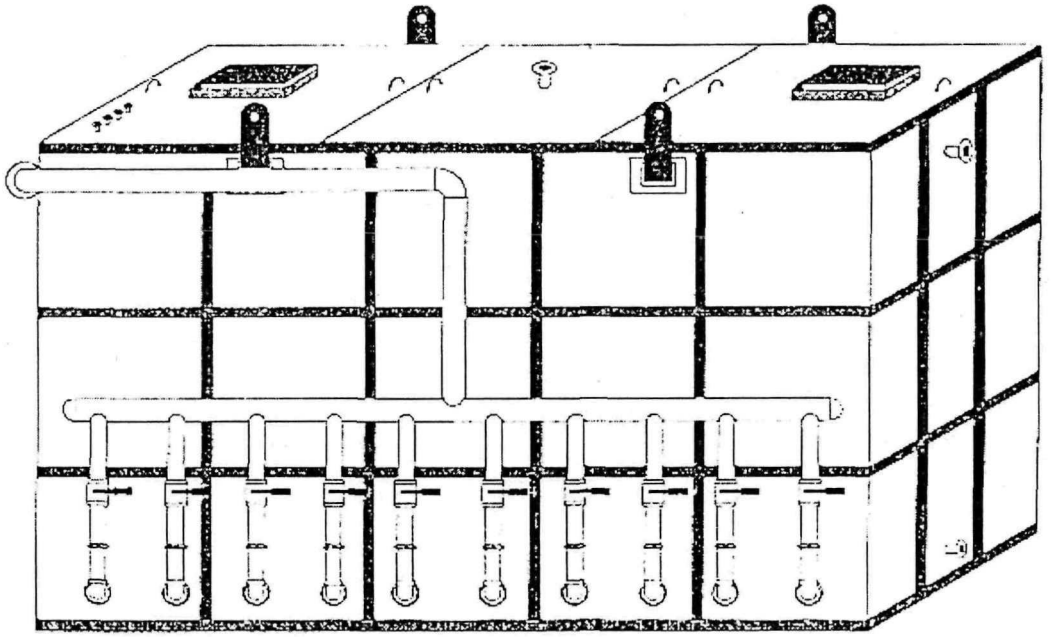
1550 Valley Center Parkway, Suite 140
Bethlehem, PA 18017

BTXò

Package Wastewater Bioreactor System



Package Biotreatment from Bioscience, Inc.

Introduction

The BTX^{TM} system is a factory-fabricated, package treatment plant for biodegradation of organic chemicals in wastewater and groundwater. The BTX system is a biological submerged, fixed-film system incorporating high efficiency air diffusers for oxygen transfer and mixing. The system is packed with rigid polyvinyl chloride (PVC) medium to supply a high surface area for bacterial growth ("fixed film"). The BTX system is engineered to continuously provide proper conditions for microbial growth. As bacteria consume organics from the wastewater, they form a slime layer on the PVC media. This slime layer continuously metabolizes the organics in the wastewater converting the organics into CO_2 and forming new biological growth as the old sloughs off the media. This self-perpetuating microbial layer accumulates on and adheres to the media forming a "fixed" (or stationary) film past which the contaminated water is

pumped by the BTX system. Thus:

$$C_x H_y \text{ (waste organics)} + O_2 + \text{microbial layer} \rightarrow CO_2 + H_2O + \text{more microbes}$$

Better Oxygen/CO_2 Transfer

Oxygen is supplied to the microbial layer by air blowers and a high efficiency diffuser manifold system. Diffusers beneath the PVC matrix transfer oxygen from the air to the wastewater and from there it is transferred to the microbial growth layer. Simultaneously, the CO_2 produced in the microbial metabolic reactions is transferred from the biomass to the circulating water. Induced movement of the oxygen/carbon dioxide laden wastewater occurs in the alternating sections of the system where diffusers are not installed directly beneath the PVC media.

PVC Media and Excellent Microbial Growth

The PVC medium provides a high surface area for the microorganisms to populate. The PVC medium has 42 square feet (3.9 square meters) of surface area for each cubic foot (.028 cubic meters) of media. The high ratio of media surface area to media volume and to tank volume allows for accumulation of substantial quantities of bacteria within a relatively small reactor volume. This means the system is quite efficient.

As the bacteria grow on the PVC matrix, the microbial growth layer gets thicker. As this layer becomes thicker, its lower portion becomes anaerobic and unable to remain attached to the PVC matrix. The forces of water and air movement flowing through the matrix tear this portion of biological film from the PVC matrix. This process is called sloughing. This sloughed material flows out of the BTX units as suspended solids, generally with excellent settling properties. A clarifier then removes the sloughed solids from the wastewater stream. New microbial growth populates the newly exposed surface of the PVC media providing for the continuation of microbial growth which is the basis of the wastewater decontamination process.

Multiple Operating Modes

The BTX system can be operated in an aerobic, anoxic or anaerobic mode by changing the air supply and mixing configuration. Combinations of anaerobic, aerobic and anoxic treatments can be achieved by the appropriate placement of diffuser heads and control of mixing. This allows the treatment of more complex wastewaters containing a variety of organic and inorganic substances (e.g. ammonia, chlorinated organics and nitrate).

Easy to Operate

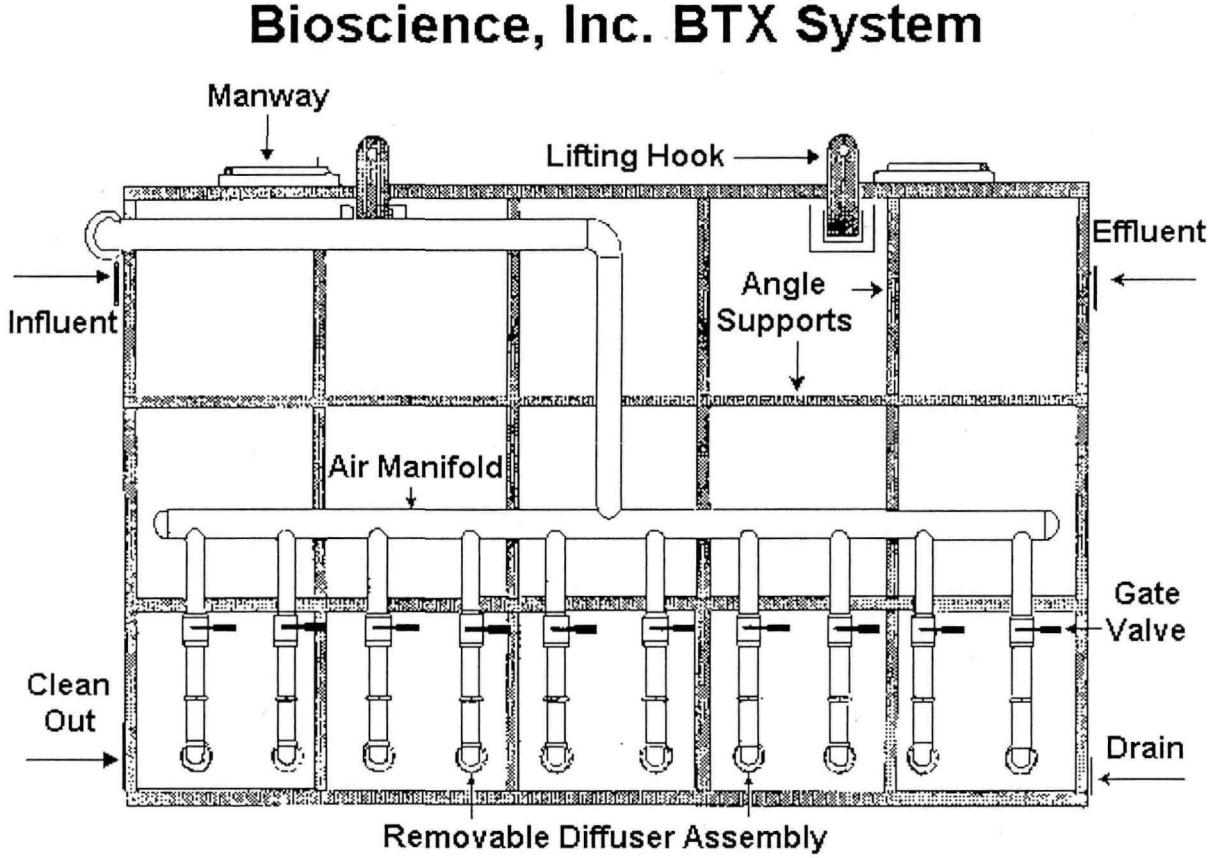
The BTX system is much easier to operate and control than conventional activated sludge for several reasons:

1. The BTX system is self regulating with respect to sludge age (SRT) – No daily sludge wastage calculations need be made. There is no sludge recycle.
2. The suspended solids generated by the BTX system consistently settle well. Only a small clarifier is required yielding dense settled solids and low effluent suspended solids.
3. BTX system startup, restart and recovery are generally very rapid because of the solids retained in the

system.

Modular Design/Easy Installation/Low Maintenance

The BTX system is available in 8 standard sizes. Each is designed to ease the installation process. Lifting lugs and manways are provided to make installation and maintenance straightforward.



BTX™ WASTEWATER BIOREACTOR
DESIGN DIAGRAMS, WEIGHTS & CAPABILITIES
(US UNITS)

Model Number	1	2	5	7.5	10	15	20	25
BOD removal est. max.	7-9 (lbs./day)	12-15 (lbs./day)	15-85 (lbs./day)	86-175 (lbs./day)	176-260 (lbs./day)	261-330 (lbs./day)	331-400 (lbs./day)	401-470 (lbs./day)
Hydraulic Limits	2,500 gpd	10,000 gpd	37,500 gpd	75,000 gpd	112,500 gpd	150,000 gpd	187,500 gpd	225,000 gpd

Media Volume	72 ft^3	120 ft^3	700 ft^3	1,400 ft^3	2,100 ft^3	2,800 ft^3	3,500 ft^3	4,200 ft^3
Tank Length (liq. phase)	6 ft.	10 ft.	10 ft.	20 ft.	30 ft.	40 ft.	50 ft.	50 ft.
Tank Width (liq. phase)	4 ft.	4 ft.	10 ft.	10 ft.	10 ft.	10 ft.	10 ft.	12 ft.
Tank Depth (liq. phase)	4.5 ft.	5.5 ft.	8.5 ft.	8.5 ft.	8.5 ft.	8.5 ft.	8.5 ft.	8.5 ft.
Tank Volume (liq. phase)	132 ft^3	220 ft^3	850 ft^3	1,700 ft^3	2,550 ft^3	3,400 ft^3	4,250 ft^3	5,100 ft^3
Tank Volume (liq. phase)	898 gal.	1,646 gal.	6,358 gal.	12,716 gal.	19,074 gal.	25,432 gal.	31,790 gal.	38,148 gal.
Air required (cfm) Horsepower (hp)	15 cfm 1 hp	25 cfm 2 hp	125 cfm 5 hp	225 cfm 7.5 hp	325 cfm 10 hp	425 cfm 15 hp	525 cfm 20 hp	625 cfm 25 hp
Tank Length (outside)	6.5 ft.	10.5 ft.	10.5 ft.	20.5 ft.	30.5 ft.	40.5 ft.	50.5 ft.	50.5 ft.
Tank Width (outside)	4.5 ft.	4.5 ft.	10.5 ft.	10.5 ft.	10.5 ft.	10.5 ft.	10.5 ft.	12.5 ft.
Tank Depth (outside)	5.5 ft.	6.5 ft.	10 ft.	10 ft.	10 ft.	10 ft.	10 ft.	10 ft.
Weight (Shipping)	2,800 lbs.	4,200 lbs.	10,000 lbs.	22,000 lbs.	32,000 lbs.	42,000 lbs.	52,000 lbs.	62,000 lbs.
Weight (Operating)	10,300 lbs.	18,000 lbs.	116,100 lbs.	128,100 lbs.	191,200 lbs.	254,300 lbs.	317,300 lbs.	380,400 lbs.

Note:

(1) All systems operate at approximately 3.5 psi and include two blowers for cycling load requirements.
(2) Air headers and control panels extend width approximately one foot on each side of unit.
(3) Custom units are available to meet client specifications.

BTX™ WASTEWATER BIOREACTOR DESIGN DIAGRAMS, WEIGHTS & CAPABILITIES (METRIC UNITS)

Model Number	1	2	5	7.5	10	15	20	25
BOD removal est. max.	3-4 (KG/day)	5-7 (KG/day)	8-39 (KG/day)	40-80 (KG/day)	81-120 (KG/day)	121-150 (KG/day)	151-180 (KG/day)	181-215 (KG/day)
Hydraulic Limits	10 m^3/d	40 m^3/d	150 m^3/d	285 m^3/d	425 m^3/d	570 m^3/d	710 m^3/d	850 m^3/d
Media Volume	2.0 m^3	3.4 m^3	20.0 m^3	40.0 m^3	59.4 m^3	79.2 m^3	99.1 m^3	118.9 m^3
Tank Length (liq. phase)	1.8 m	3.1 m	3.1 m	6.1 m	9.1 m	12.2 m	15.2 m	15.2 m
Tank Width (liq. phase)	1.2 m	1.2 m	3.1 m	3.1 m	3.1 m	3.1 m	3.1 m	3.7 m
Tank Depth (liq. phase)	1.4 m	1.7 m	2.6 m	2.6 m	2.6 m	2.6m	2.6 m	2.6 m
Tank Volume (liq. phase)	3740 l	6200 l	24,000 l	48,000 l	72,000 l	96,000 l	120,000 l	144,000 l
Tank Volume (liq. phase)	3.74 m^3	6.2 m^3	24 m^3	48 m^3	72 m^3	96 m^3	120 m^3	144 m^3
Air required (l/s) Horsepower (hp)	7.1 l/s 1 hp	11.8 l/s 2 hp	59.0 l/s 5 hp	106 l/s 7.5 hp	153 l/s 10 hp	200 l/s 15 hp	248 l/s 20 hp	295 l/s 25 hp
Tank Length (outside)	1.98 m	3.2 m	3.2 m	6.25 m	9.30 m	12.3 m	15.4 m	15.4 m
Tank Width (outside)	1.37 m	1.37 m	3.2 m	3.2 m	3.2 m	3.2 m	3.2 m	3.8 m
Tank Depth (outside)	1.68 m	1.98 m	3.05 m	3.05 m	3.05 m	3.05 m	3.05 m	3.05 m
Weight (Shipping)	1,270 KG	1,905 KG	4,540 KG	9,980 KG	14,500 KG	19,100 KG	23,600 KG	28,000 KG

Weight (Operating)	4,670 KG	8,170 KG	52,700 KG	58,100 KG	86,700 KG	115,000 KG	144,000 KG	173,000 KG

Note:

(1) All systems operate at approximately 0.25 kg/cm^2 and include two blowers for cycling load requirements.
(2) Air headers and control panels extend width approximately one foot on each side of unit.
(3) Custom units are available to meet client specifications.

Specifications (Typical)

The BTX System factory-fabricated tanks conform to the latest American Petroleum Institute (API) standards for welded oil storage tanks.

All welding is arc welding, done in accordance with the code of arc welding in building construction of the American Welding Society (AWS). Welding on all braces is continuous. All welds are ground to smoothness.

All flange drilling and diameter conform to or exceed American National Standards Institute (ANSI) B16.5 for steel pipe flanges, fittings and valves, 150 pound type.

Construction

All tanks are fabricated with ¼" carbon steel sides, 3/8" carbon steel bottoms, and (if supplied) 3/16" carbon steel covers. Tanks conform to American Society for Testing and Materials (ASTM) A-26, FY-36,000 psi or better.

Fittings

Inlet and outlet are flanged. The sludge drain is threaded and capped. The clean-out port is flanged, gasketed and bolted.
The dual air manifold is hard piped with multiple diffusers.

Paint Specifications

The interior and exterior are painted with epoxy primer, intermediate coat and final coat. The interior paint is resistant to chemicals.

Covers and Manways

The steel covers and manways are gasketed and bolted. Covers are removable for access to the tank internals.

Diffusers

Oxygen transfer is accomplished with high efficiency diffusers. Diffusers are petroleum resistant and are stainless steel in construction. All diffusers contain check valve assemblies to prevent backflow.

Manifold Assembly

Manifold assembly contains manual gate valve shut-offs for each diffuser. Each assembly is removable from the outside of the tank. All piping is hard piped with unions and valves.

Blower System

1. The blower is a complete, skid mounted unit. The unit is sized to handle the liquid transport and oxygen transfer requirements for the BTX tank.

2. Specifications:

Continuous Duty
Rated 230/460 3 phase
Rated H.P.
Inlet and Outlet Filter Silencers
Pressure Gauges
1800 rpm
Belt Driven

3. Dual blower for cycling load requirements and backup

Control Panel

The control panel includes all switch gear and system controls.

Recommended Peripherals (optional)

1. **primary clarifier**
2. **pH control**
3. **nutrient addition**
4. **secondary clarifier**
5. **sludge dewatering**
6. **chlorination**
7. **ORP monitoring and control**

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DAF Product Information Page

Pan America Environmental

DAF Series Dissolved Air Flotation System Engineering Specification

DAF8 through DAF600

Print this file for use as your project specification
or copy to your clipboard

SECTION 1.0 DAF Equipment

Performance

The Pan America Environmental DAF Series systems are designed to remove fats, oils & greases (FOG) and suspended solids. Clarification rates as high as 97% can be achieved using the DAF systems.
A percentage of the clean effluent is recycled and super-saturated with air, mixed with the wastewater influent and injected into the DAF separation chamber. The dissolved air comes out of solution, producing millions of microscopic bubbles. These bubbles attach to solids and float them to the surface where they are skimmed and removed from the tank.

1.01 Design

The DAF Dissolved Air Flotation system will be designed and fabricated per the following specifications. The tank shall be a rectangular design with features as described.

1.02 Float/Separation Chamber

The separation chamber provides a velocity decreasing horizontal separation surface area that minimizes turbulence and maximizes flow and solids throughput. The mixed wastewater enters this chamber where separation and flotation occur. The Separation chamber includes the float storage chamber, float baffle, water baffle with adjustable water weir, settleable sludge hopper, surface float skimmer, clean water effluent chamber and the skim ramp.

1.03 Float Storage Chamber

As the surface float skimmer continuously skims float from the water surface it conveys float up the skim

ramp and deposits it in the float storage chamber which is provided to allow temporary float storage. The chamber has sloped sides to allow solids to slide to the bottom sludge outlets.

1.04 Effluent Chamber

The waste flow and float run into the float baffle at the effluent end of the tank. The float is contained while the water is directed under the baffle and over the adjustable 304 stainless steel weir plate. The clean water accumulates in this chamber where a portion is recycled to continue the process cycle and the residual is discharged.

1.05 Sludge Hopper

A sludge hopper is located under the separation chamber to provide temporary storage of any settleable solids.

1.06 Surface Float Skimmer

A mechanical surface drag skimmer assembly is provided to sweep the floating solids (float) from the effluent end of the separation chamber toward the influent end. The skimmer consists of stainless skimmer flights and neoprene wiper blades, steel flight chain, sprockets, variable speed drive, sprocket shafts, bearings and chain adjustment bearing frames. The flights will be bolted to the roller chain spanning the width of the tank and will be designed to wipe the tank sides and float ramp. The chains will ride on steel sprockets.

1.07 Air Saturation System

The DAF is provided with an air saturation system that is designed to direct a portion of the water from the effluent chamber, super-saturate the water with air and then mix this solution with incoming wastewater facilitating intimate mixing of both flows. Recycle saturation pump and schedule 80 PVC piping are mounted on DAF tank.

1.08 Recycle Pump

A centrifugal, 70-100 psi recycle pump mounted to the DAF tank is included to provide air saturated water under pressure to the air/wastewater mixing inlet prior to entering the separation chamber.

1.09 Influent Mixing Chamber

The saturated flow mixes with the wastewater flow at the DAF influent via a "Y" connection.

1.10 Controls

A Nema 4 control panel with pump control switch, lights, starter and variable speed motor controls for flight skimmer is provided mounted and wired to the DAF tank for convenient operation. 230/460V/3 ph/60Hz power required. Control of any options can be integrated into this panel for centralized control by the factory prior to shipping.

Section 2.0 Materials of Construction

2.01 Steel Construction

Tank shell, baffles and internal structural members shall be constructed of A-36 steel. Weld joints are to be double welded. External structural members to be coated A-36 carbon steel.

2.02 Surface Preparation

Interior surfaces shall be prepared to an SSPC-SP10 near white metal blast. Exterior surfaces shall be prepared to an SSPC-SP6 commercial blast.

2.03 Coatings

Interior coating shall be a self-priming, coal tar epoxy (12 DFT). Exterior coating shall be primer coat followed by industrial epoxy coat (6 DFT). Color is Rain Forest Green.

2.04 Piping

Internal piping shall be ASTM, A-53 steel.

2.05 Manufacturer

The manufacturer of preference shall be: Pan America Environmental
2385 Hammond Dr. Ste 3 Schaumburg, IL 60173 847/882.5855 Fax: 847/882.5630

2.06 Warranty

Pan America Environmental warrants its products to be free of defect in materials and workmanship for a period of one year from the date of shipment.

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MHA Nation's
Clean Fuels Refinery
Background Information for the
NPDES Application

The Clean fuels refinery project has been designed to fulfill a need for clean gasoline and distillate fuels in PAD II. The facility will be owned and operated by the MHA Nation, and will be located on their site near Makoti, North Dakota within the boundary of the Fort Berthold Reservation. The refinery will have an economic life of at least 20 years, and with a planned maintenance program will operate successfully for many years thereafter.

The refinery is designed to make high quality fuels. It will be a Hydrocracker based facility that will produce ultra low sulfur gasoline and distillate blending components. Hydrotreating units are included to provide all the streams with desulfurization facilities. A new hydrogen plant will be included to supply the hydrogen needed to accomplish production of clean fuels. High quality blending components will also be prepared to provide the octane necessary for modern vehicles and the energy content needed to provide the best mileage to minimize the consumption of fuels needed to move each vehicle to its destination. The sulfur and aromatic content will also be minimized to substantially reduce the products of combustion. This will have the effect of substantially reducing the exhaust contaminants produced by the vehicles currently on the roads. Immediately upon completion of the refinery, clean fuels will be available to begin this reduction of vehicle exhaust pollutants as a source of contamination.

The components within the refinery will be designed with current technology to provide clean operation. This approach begins with the selection of clean feeds, to minimize the ingestion of contaminants delivered to the refinery in the first instance. The refinery is designed to utilize synthetic crude oil that is readily available by pipeline adjacent to the refinery site. This feedstock has already been deeply processed with hydrogen to reduce the sulfur content, and to remove the heavy bottoms normally associated with other feedstocks. The crude has also been thoroughly hot-water washed to remove naturally occurring salt, metals, and other contaminants to amounts less than other feedstocks available. For example, the metals content of heavy crude oil is over 500 ppmw (parts per million by weight), light crude oil is in the range of 5 to 10 ppmw, and synthetic crude oil is <0.2 ppmw. In addition, billions of dollars have been spent to develop the upgrading facilities adjacent to the tar sands in Canada, and billions more are currently planned to increase the supply of this synthetic crude. So, while traditional supplies of light, sweet crude oil are diminishing in the US and being replaced by heavier, sour (more sulfur content) crudes, the Clean Fuels Refinery will have the capability and location logistics to use the clean synthetic crude oil that is available in increasing supply well beyond the economic life of the refinery.

In addition, the refinery is designed to use local supplies of natural gas and field butanes. Local suppliers are already capable of providing these feeds to the refinery. This will provide clean burning natural gas for the application of low NO_x burner technology for the refinery, and indeed for the entire community. Butanes will be used to prepare the high octane, high energy, clean gasoline fuels needed by the market.

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In addition to producing clean fuels, the refinery has been designed for clean operation. The whole concept begins with the selection of the cleanest feedstock available in plentiful supply by pipeline. This is synthetic crude oil manufactured from bitumen in north eastern Alberta. The upgrading process there consists of mining the bitumen from the sand by hot water washing to extract the oil and remove contaminants. The bitumen is then hydrocracked (with hydrogen) and fractionated leaving behind the majority of contaminants. The synthetic crude oil produced there is distinguished by its very low sulfur content, very low metals content, and removal of the heavy boiling components found in conventional crude oil. Selection of the synthetic crude is the largest step in reducing refinery pollutants by never admitting them into the refinery.

The design has simplified the job of treating the wastewater by using clean feed and minimizing the use of water as well. These steps are described in detail herein. So, the refining process starts cleaner and provides the following treatment as shown on the wastewater treatment flow diagram.

The wastewater treatment plant (WWTP) is for oily, contaminated water and consists of the following units:

API separator → DAF → Equalization tank → Bio treatment reactors → Clarifier tank → Sludge handling equipment. This equipment will produce non-hazardous Class 2 landfill.

A water recycle plant (WRP) is included to handle non-oily waste from the boiler plant. This stream is segregated from the WWTP to minimize hazardous sludge in the first place. There is also no cooling tower blowdown to contend with, thereby reducing the magnitude of the cleanup even further.

The water flows shown on the wastewater treatment system diagram are in gallons per minute (gpm). The average flows are calculated by using an annual precipitation of 18 inches. The maximum flows are based upon a 100-year, 24-hour event maximum of 5 inches. This stormwater would be contained in the holding ponds and processed through the WWTP over a 30-day period.

Contaminated water is held before and after treatment in the three holding ponds, and tested prior to release to the two outfalls disclosed on Form 2D. The average daily values show concentration in ppmw (mg/L) and pounds for each pollutant. The maximum daily values are 1.25 times the average values at the same concentration. The 100-year, 24-hour storm event shows the same mass of pollutants (no increase) diluted by the higher water rates. The selenium content is assumed to be at 5 ppbw (μg/L).

The solid waste inventory from the refinery totals an estimated 662 lb/day. This is substantially below the norm for refineries because of the cleaner feedstock, no cooling

tower, and no desalter. The solid waste streams are segregated between WWTP and WRP to minimize hazardous waste. The breakdown is about:

- Hazardous waste 62 lb/day
- Non hazardous waste 600 lb/day

Presently, treatment of the hazardous waste is designed to occur on site to produce all Class 2 landfill that would be removed by truck or rail. However, the option of exporting the hazardous waste to an approved site remains a consideration if economics are more favorable.

The refinery's configuration also includes a bio-diesel process unit to convert locally grown soybeans to bio-diesel. Although bio-diesel has an excellent cetane index and no sulfur content, the pour point is relatively high for cold weather use. Consequently, it will be blended into the refinery diesel pool to produce a saleable bio-diesel product. The plant has been designed to produce about 300 BPSD of bio-diesel from 8,500 bushels per day of locally grown soybeans. The residual solids from the bio-diesel process have market value as animal feed. The soybean feed will be imported into the refinery and the solid residue exported all by truck.

The refinery will be designed to use air cooling equipment to control the operating units with the minimum utilization of water. This will eliminate the need for a cooling tower. Heat exchange equipment will be used to recover heat from effluent streams and increase energy efficiency. The crude distillation tower will use four pump-around circuits to improve separation and minimize energy usage. As a result of the synthetic crude oil feedstock, a vacuum distillation unit would not be needed, thereby, eliminating the attendant production of sour water condensate. The side strippers on the atmospheric crude column will be reboiled with hot oil to avoid commingling steam condensate with the oil in the column to further reduce sour water production.

Segregated drains will be provided to separate storm water from wastewater to minimize water contamination in the industrial process. There will be a WWTP and a WRP to purify and recycle water to further minimize its usage. Water containing sulfur or benzene will be purified in the sour water stripper or the benzene steam stripper, respectively. The following list is a summary of water and energy management system items that will be incorporated.

All the process and loading areas will be paved with concrete surrounded by curbs. All the process drains will be sealed and elevated above the grade. Stormwater drains inside the battery limits (ISBL) will be mounted flush with grade. The hydrocarbon drains will be segregated and direct hydrocarbon to a slop storage vessel and be returned to the process.

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Oily water drains will be segregated and deliver contaminated wastewater to the WWTP. This plant will consist of an API Separator complete with VOC controls, and an air flotation unit to remove hydrocarbon and release the treated water to a holding pond. This water will be tested prior to release to the evaporation pond, and thereafter to the outfall.

Wastewater will be minimized by installing a WRP to process water plant sludge, boiler blowdown, boiler feedwater treatment effluent, steam condensate drains, and other mildly contaminated wastewaters. These streams will be segregated in a separate drainage system for delivery to the WRP. This non oily process water will bypass the API separator to minimize the production of API separator sludges.

The WRP would consist of a solids clarifier with sludge thickening and drying to produce non-hazardous Class 2 landfill.

Storm water collected within ISBL is considered to be contaminated and is carried by the oily water drain system to the WWTP.

Potentially contaminated storm water is collected in a separate drain system and delivered to a holding pond for testing, and release or to the WWTP if contaminated.

Uncontaminated storm water will be segregated in a surface drainage system and delivered to the evaporation pond for release.

Oily water containing benzene will be segregated from the oily water drainage system. This material will be delivered to a steam stripper to recover benzene and VOC and return these to the process. The stripped water will be recycled or released for discharge.

All instrument drains (level bridles, control valves etc) will be collected in a separate drain header and delivered to a maintenance drain out (MDO). The vapors will be flared, the liquid hydrocarbon will be delivered back to the process, and the water will be directed to the sour water stripper (SWS).

All stream samplers will be totally enclosed systems from and back to the process with no net discharge.

There will be no desalter water thereby minimizing the wastewater volume significantly. However, the system as designed would provide treatment if it were required.

There will be no vacuum unit thereby eliminating this as a source of contaminated water.

Inclusion of four pumparound systems for energy efficiency, and reboil strippers with hot oil rather than using live stripping steam.

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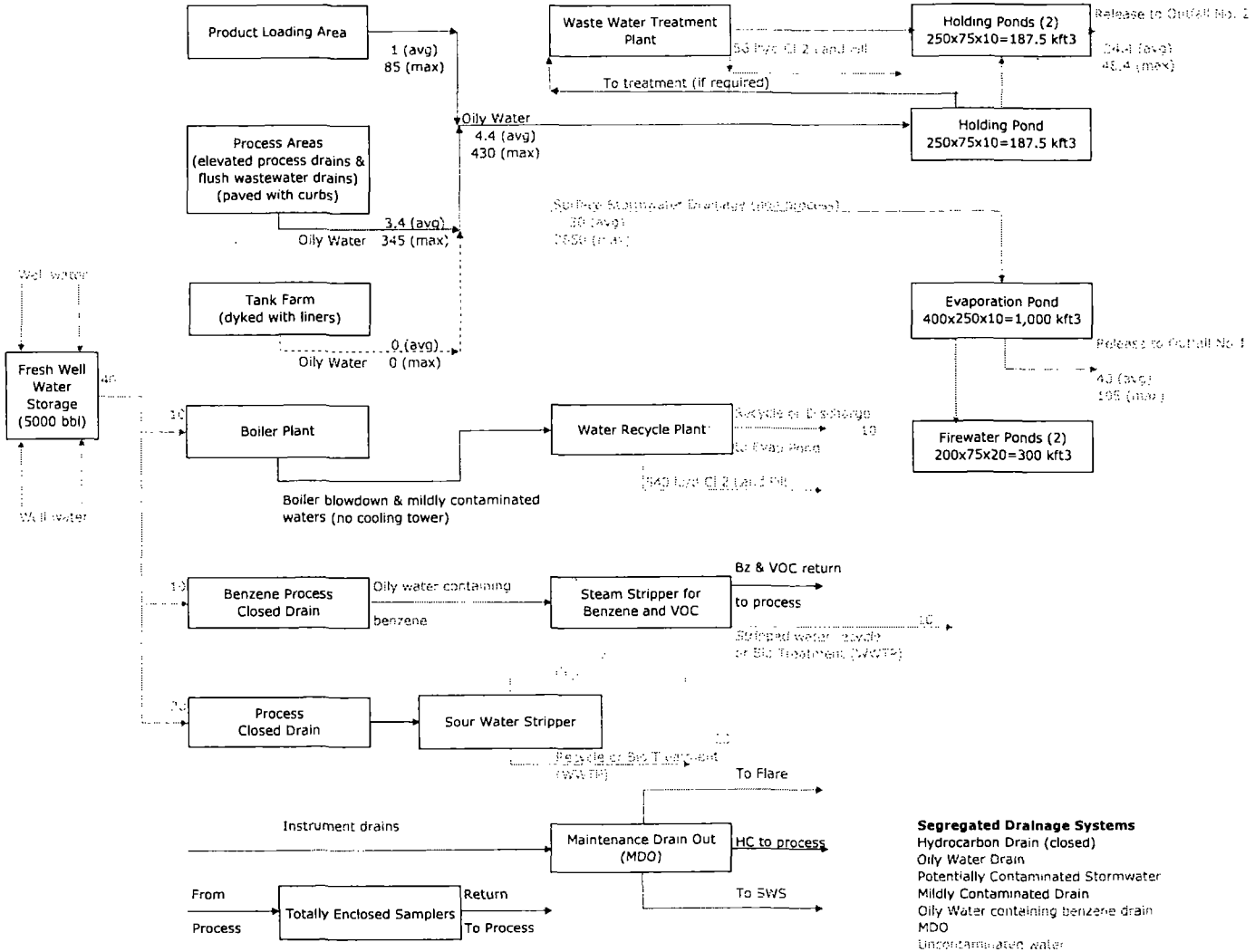
Block flow diagrams of the refinery process and wastewater treatment are included as attachments to the NPDES application.



MHA Nation Clean Fuels Refinery Flow Diagram