

**U. S. EPA Region 8**

**Discussion of Regulatory Applicability of  
RCRA/NPDES/UIC  
to  
Three Affiliated Tribes Refinery Alternatives**

**Final Draft**  
**(Prepared in Conjunction with EPA HQ)**  
**May 24, 2006**

**U. S. EPA Region 8**

**Discussion of Regulatory Applicability of  
RCRA/NPDES/UIC  
to  
Three Affiliated Tribes Refinery Alternatives**

There are six wastewater discharge scenarios that are currently being proposed in the draft EIS. These are discussed below and are shown in Table 1 at the end of the narrative. There are three discharge scenarios under Alternative 1 (which involves the use of ponds and tank systems), and three under Alternative 4 (which only uses tank systems, except for uncontaminated stormwater). Also, draft diagrams of the wastewater treatment system for each alternative are attached.

**1. Alternative 1&A**

Under Alternative 1&A, process wastewater and contaminated (oily) stormwater would be treated in the WWTU and released to holding ponds prior to discharge through an NPDES Outfall. Uncontaminated (non-oily) stormwater would be stored in a holding pond prior to discharge through an NPDES Outfall.

**NPDES**

NPDES permit would cover discharges of treated process wastewater and contaminated (oily) stormwater from holding ponds (Outfall 002); and discharge of uncontaminated (non-oily) stormwater from a holding pond (Outfall 001).

**RCRA**

Based upon the proposed engineering diagram for Alternative “1&A,” a RCRA TSDF permit under 40 CFR Parts 264 and 270 would be required for the holding pond (surface impoundment) that is shown in the diagram as generating and storing F037 hazardous waste. This is because RCRA permits are required for surface impoundments that receive and/or generate hazardous waste, and that do not conduct aggressive biological treatment. [Note that if a tank were used here instead of the land-based unit shown, that tank would still generate F037 hazardous waste, but would likely be exempt from RCRA permitting under the wastewater treatment unit (WWTU) exemption. See 40 CFR 264.1(g)(6).] The WWTU exemption applies to tanks or tank systems that meet the definition of an exempt WWTU in 40 CFR 260.10. Regarding the other surface impoundments shown in the diagram that are downstream from the unit labeled as “Bio Reactor,” these impoundments may or may not need RCRA permits depending upon several factors.

First, based upon the diagram, it appears possible that these impoundments could generate F038 hazardous wastes (as they appear to be engaged in secondary treatment), thus requiring a RCRA permit for these land-based units. However, any sludges or floats generated in an aggressive biological treatment unit (ABTU, as defined in 40 CFR 261.31(b)(2)) are exempt from being classified as F037 or F038 hazardous wastes. This exemption also applies to sludges and floats generated in units that are downstream/after units where wastewaters have been treated in ABTUs as well. Thus, F038 hazardous wastes would not be generated in the impoundments shown downstream of the aggressive biological treatment unit, and therefore no RCRA permit would be required (assuming no other hazardous wastes are managed in these units). However, an ABTU must be operated to achieve aggressive biological treatment of these process wastewaters, as defined in the regulations. Regarding the stormwater impoundment shown in the diagram, the F037/F038 listings do not apply to sludges generated in stormwater units that do not receive dry weather flow.

Second, if the influent wastewater to any of these impoundments is hazardous waste – for example, if the wastewater contains high enough concentrations of benzene to be classified as a D018 hazardous waste – then these units would also require a RCRA permit. While elevated benzene concentrations are not likely to occur where wastewaters have undergone aggressive biological treatment, this possibility should be noted.

If required, the RCRA permit would be written to cover certain aspects of the wastewater treatment system (such as information about operation of the ABTU and other units) where hazardous waste is treated, stored, or disposed (no disposal of hazardous waste is currently contemplated at the facility), and RCRA corrective action for all SWMUs including the WWTU.

Even if no RCRA permit were required, the following selected wastes could be generated in the wastewater treatment system: D018, KO48, KO49, KO51, FO37, and FO38 (for F037/F038, depending upon applicability of the exemption at 261.31(b)(2)). Hazardous waste generator requirements (see 40 CFR Part 262) would apply as appropriate.

## **2. Alternative 1&B**

Under Alternative 1&B, process wastewater and contaminated (oily) stormwater would be treated in the WWTU and released to holding ponds prior to discharge through an NPDES outfall or land applied. Uncontaminated (non-oily) stormwater would be stored in a holding pond prior to discharge through an NPDES outfall or land applied.

## **NPDES**

NPDES permit would cover discharges of treated process wastewater and contaminated (oily) stormwater from holding ponds (Outfall 002); and discharge of uncontaminated (non-oily) stormwater from a holding pond (Outfall 001). It would not cover irrigation wastewaters.

## **RCRA**

Same as 1&A above with the following modifications. The treated wastewater that would be used for irrigation/land application would not pass through the NPDES discharge to surface waters. Therefore, the wastewater would continue to meet the definition of solid waste and the requirements for land application of solid waste under 40 CFR Part 257 would apply, as the irrigated land parcel would be classified as a solid waste land application unit (and a SWMU). The tribes do not currently have a program in place to cover this activity, however these requirements are self-implementing. Also, RCRA corrective action requirements under the RCRA TSD permit would apply. Some conditions or requirements that may be imposed include a risk assessment if the wastewaters are used for irrigation of human food-chain crops, unless the wastewaters were sufficiently treated (e.g., to drinking water standards) to remove contaminants (hazardous waste constituents) and the irrigation waters no longer met the definition of solid waste. Appropriate wastewater treatment levels would need to be established prior to irrigation to meet appropriate health standards and land use designations.

In addition, certain LDR requirements under 40 CFR Part 268 might apply where de-characterized wastewaters (i.e., wastewater that was at one point a characteristically-hazardous waste, such as D018, and treatment has since removed the characteristic) are land applied; however, LDR requirements might not apply even where de-characterized wastewaters are land applied, if the certain conditions are met as outlined in 40 CFR 268.1(c)(4), regarding the regulation of this land application under the CWA.

Also, the diagram shows units that are typically tanks in the wastewater treatment system (such the API separator, DAF unit, equalization and clarifier units.) If any of these tanks are used in the wastewater treatment system to manage hazardous wastes, such tanks are typically exempt from RCRA permitting under the wastewater treatment unit (WWTU) exemption. See 40 CFR 264.1(g)(6) and 260.10. However, as mentioned above, the irrigation wastewaters would not be subject to an NPDES permit in this situation, which is the condition of the WWTU exemption found at 40 CFR 260.10. In that case, tanks managing hazardous waste would not be eligible for the WWTU exemption..

The following selected wastes could be generated in the wastewater treatment system: D018, KO48, KO49, KO51, FO37, and FO38 (for F037/F038, depending upon applicability of the exemption at 261.31(b)(2)). Hazardous waste generator requirements (see 40 CFR Part 262) would apply as appropriate.

### **3. Alternative 1&C**

Under Alternative 1&C, process wastewater and contaminated (oily) stormwater would be treated in the WWTU and released to holding ponds prior to disposal through an UIC well (replaces NPDES Outfall (002)). Uncontaminated (non-oily) stormwater would be stored in a holding pond prior to discharge through an NPDES outfall.

#### **NPDES**

NPDES permit (Multi-sector General Permit for Stormwater) would cover discharge of uncontaminated (non-oily) stormwater from a holding pond (Outfall 001).

#### **RCRA**

Same as 1&A with the following modifications. If tanks are used anywhere in the wastewater treatment system to manage hazardous wastes (e.g., the diagram shows units that are typically tanks, such the API separator, DAF unit, equalization and clarifier units) such tanks are typically exempt from RCRA permitting under the wastewater treatment unit (WWTU) exemption. See 40 CFR 264.1(g)(6) and 260.10. However, use of a UIC well to manage treated effluent, as shown in Alternative 1&C, could affect whether this exemption applies. If the exemption does not apply, a RCRA permit may be required for these tanks.

The WWTU exemption could apply to tanks within a wastewater treatment facility where UIC wells are being used to manage wastewater, if the facility is utilizing the UIC well to comply with NPDES permit conditions or an applicable effluent guideline. However, the mere presence of a UIC well does not guarantee this (i.e., UIC wells are not “discharges” under the CWA).

Note that the existence of a NPDES-permitted discharge shown in the diagram for uncontaminated stormwater would have no bearing on whether the WWTU exemption does or does not apply to the wastewater treatment tanks managing hazardous wastes whose discharge is managed in a UIC well.

The following selected wastes could be generated in the wastewater treatment system: D018, KO48, KO49, KO51, FO37, and FO38 (for F037/F038, depending upon applicability of the exemption at 261.31(b)(2)). Hazardous waste generator requirements (see 40 CFR Part 262) would apply as appropriate.

## **UIC**

As stated above, a UIC permit would be required for the discharge of wastewaters under this alternative. The well would be classified as a non-hazardous Class I injection well. All applicable RCRA LDR requirements would also have to be met.

### **4. Alternative 4&A**

Under Alternative 4&A, process wastewater and contaminated (oily) stormwater would be treated in the WWTU and held in release tanks prior to discharge through an NPDES Outfall (002). Non-comingled contaminated (oily) stormwater would be held in tanks and could be discharged through an NPDES Outfall (002a). Uncontaminated (non-oily) stormwater would be stored in a holding pond prior to discharge through an NPDES Outfall (001).

## **NPDES**

NPDES permit would cover discharges of treated process wastewater and contaminated (oily) stormwater from release tanks (Outfall 002); discharge of non-comingled contaminated stormwater only from release tanks (Outfall 002A); and discharge of uncontaminated (non-oily) stormwater from a holding pond (Outfall 001).

## **RCRA**

Alternative 4&A relies exclusively on tanks in the wastewater treatment system to manage hazardous wastes, and such tanks are typically exempt from RCRA permitting under the wastewater treatment unit (WWTU) exemption. See 40 CFR 264.1(g)(6) and 260.10. Even if no RCRA permit were required, the following selected wastes could be generated, in the wastewater treatment system: KO48, KO49, KO51, FO37, and FO38 (for F037/F038, depending upon applicability of the exemption at 261.31(b)(2)). Hazardous waste generator requirements (see 40 CFR Part 262) would apply as appropriate.

### **5. Alternative 4&B**

Under Alternative 4&B process wastewater and contaminated (oily) stormwater would be treated in the WWTU and held in release tanks prior to discharge through an NPDES Outfall (002) or land applied. Non-comingled contaminated (oily) stormwater would be held in tanks and could be discharged through an NPDES Outfall (002a). Uncontaminated (non-oily) stormwater would be stored in a holding pond prior to discharge through an NPDES Outfall (001) or land applied.

## **NPDES**

NPDES permit would cover discharges of treated process wastewater and contaminated (oily) stormwater from release tanks (Outfall 002); discharge of non-comingled contaminated stormwater only from release tanks (Outfall 002A); and discharge of uncontaminated (non-oily) stormwater from a holding pond (Outfall 001). It would not cover irrigation wastewaters.

## **RCRA**

Alternative 4&B relies exclusively on tanks in the wastewater treatment system to manage hazardous wastes, and such tanks are typically exempt from RCRA permitting under the wastewater treatment unit (WWTU) exemption. See 40 CFR 264.1(g)(6) and 260.10. However, under this Alternative, land irrigation/application is used at least part of the time to manage treated wastewater. RCRA requirements applicable to the irrigation/land application practice are described above in Alternative 1&B and are not repeated here. As mentioned above, the irrigation wastewaters would not be subject to an NPDES permit in this situation, which is a condition of the WWTU exemption found at 40 CFR 260.10. In that case, tanks managing hazardous waste would not be eligible for the WWTU exemption.

The following selected wastes could be generated, in the wastewater treatment system: D018, KO48, KO49, KO51, FO37, and FO38 (for F037/F038, depending upon applicability of the exemption at 261.31(b)(2)). Hazardous waste generator requirements (see 40 CFR Part 262) would apply as appropriate.

## **6. Alternative 4&C**

Under Alternative 4&C, process wastewater and contaminated (oily) stormwater would be treated in the WWTU and held in release tanks prior to discharge to a UIC well (replaces NPDES Outfall (002)). Non-comingled contaminated (oily) stormwater would be held in tanks and could be discharged through an NPDES Outfall (002a), or to a UIC well. Uncontaminated (non-oily) stormwater would be stored in a holding pond prior to discharge through an NPDES Outfall (001).

## **NPDES**

NPDES permit would cover discharge of non-comingled contaminated stormwater only from release tanks (Outfall 002A), which could also be routed to a UIC well; and discharge of uncontaminated (non-oily) stormwater from a holding pond (Outfall 001).

## **RCRA**

Same as described above in Alternative 1&C, except there are no hazardous waste surface impoundment issues in this case.

The following selected wastes could be generated in the wastewater treatment system: D018, KO48, KO49, KO51, FO37, and FO38 (for F037/F038, depending upon applicability of the exemption at 261.31(b)(2)). Hazardous waste generator requirements (see 40 CFR Part 262) would apply as appropriate.

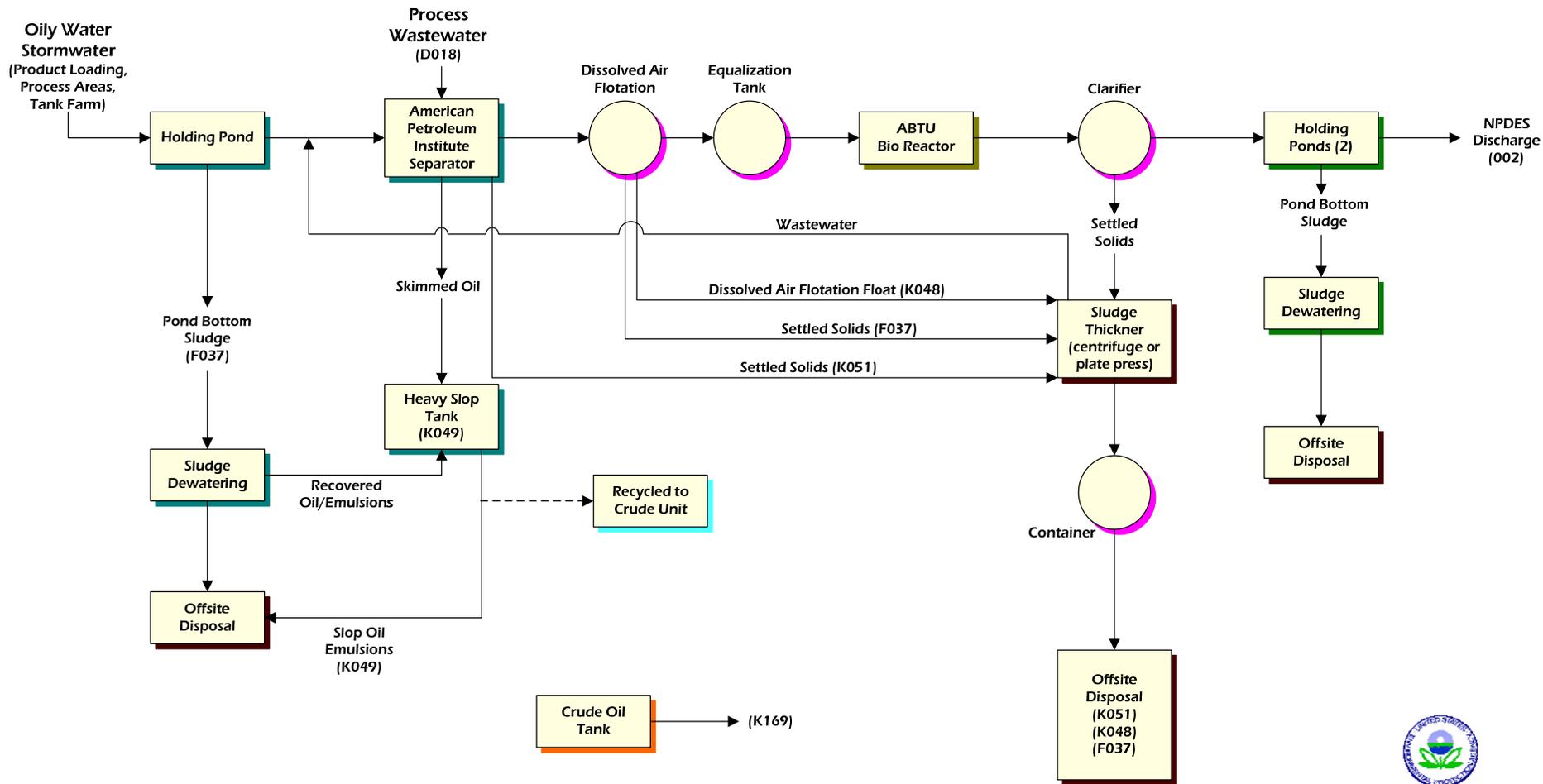
## **UIC**

As stated above, a UIC permit would be required for the discharge of wastewaters under this alternative. The well would be classified as a non-hazardous Class I injection well. All applicable RCRA LDR requirements would also have to be met.

**Attachments** (12 – Draft Wastewater Treatment System Diagrams)

Table 1- EPA Permits Required for Possible Discharge Alternatives

<b><i>Construction &amp; Effluent Discharge Alternatives*</i></b>	<b><i>EPA Permits Required</i></b>
<p><b>Alternatives 1&amp;A</b> – refinery constructed w/stormwater and effluent holding ponds, and tank system; would have 2 NPDES discharge permit outfalls</p> <p><b>Alternatives 1&amp;B</b> - refinery constructed w/stormwater and effluent holding ponds, and tank system; would have 2 NPDES discharge permit outfalls and would land apply discharges as allowed</p> <p><b>Alternatives 1&amp;C</b> - refinery constructed w/stormwater and effluent holding ponds, and tank system; would send effluent to a Class I, Non-hazardous UIC well; stormwater NPDES permit would be required</p>	<p><b>NPDES and RCRA</b> NPDES: Outfall 001 (Uncontaminated Stormwater) Outfall 002 (Process and Contaminated Stormwater)</p> <p><b>NPDES and RCRA</b> NPDES (Periodic Discharge): Outfall 001 (Uncontaminated Stormwater) Outfall 002 (Process and Contaminated Stormwater)</p> <p><b>NPDES, RCRA and UIC</b> NPDES: Outfall 001 (Uncontaminated Stormwater) Multi-Sector General Permit for Stormwater</p>
<p><b>Alternatives 4&amp;A</b> - refinery constructed w/tank system; would have 3 NPDES discharge permit outfalls</p> <p><b>Alternatives 4&amp;B</b> - refinery constructed w/tank system; would have 3 NPDES discharge permit outfalls and would land apply discharges as allowed</p> <p><b>Alternatives 4&amp;C</b> - refinery constructed w/tank system; would send effluent to a Class I, Non-hazardous UIC well</p>	<p><b>NPDES</b> NPDES: Outfall 001 (Uncontaminated Stormwater) Outfall 002 (Process and Contaminated Stormwater) Outfall 002a (Contaminated Stormwater)</p> <p><b>NPDES and RCRA</b> NPDES (Periodic Discharge): Outfall 001 (Uncontaminated Stormwater) Outfall 002 (Process and Contaminated Stormwater) Outfall 002a (Contaminated Stormwater)</p> <p><b>NPDES, RCRA and UIC</b> NPDES: Outfall 001 (Uncontaminated Stormwater) Outfall 002a (Contaminated Stormwater)</p>



**Note:**  
The ABTU must be operated according to RCRA requirements to prevent the generation of F037/F038 in the ABTU and in downstream units.

Source: Based on information from Greystone Environmental Consultants, Inc.



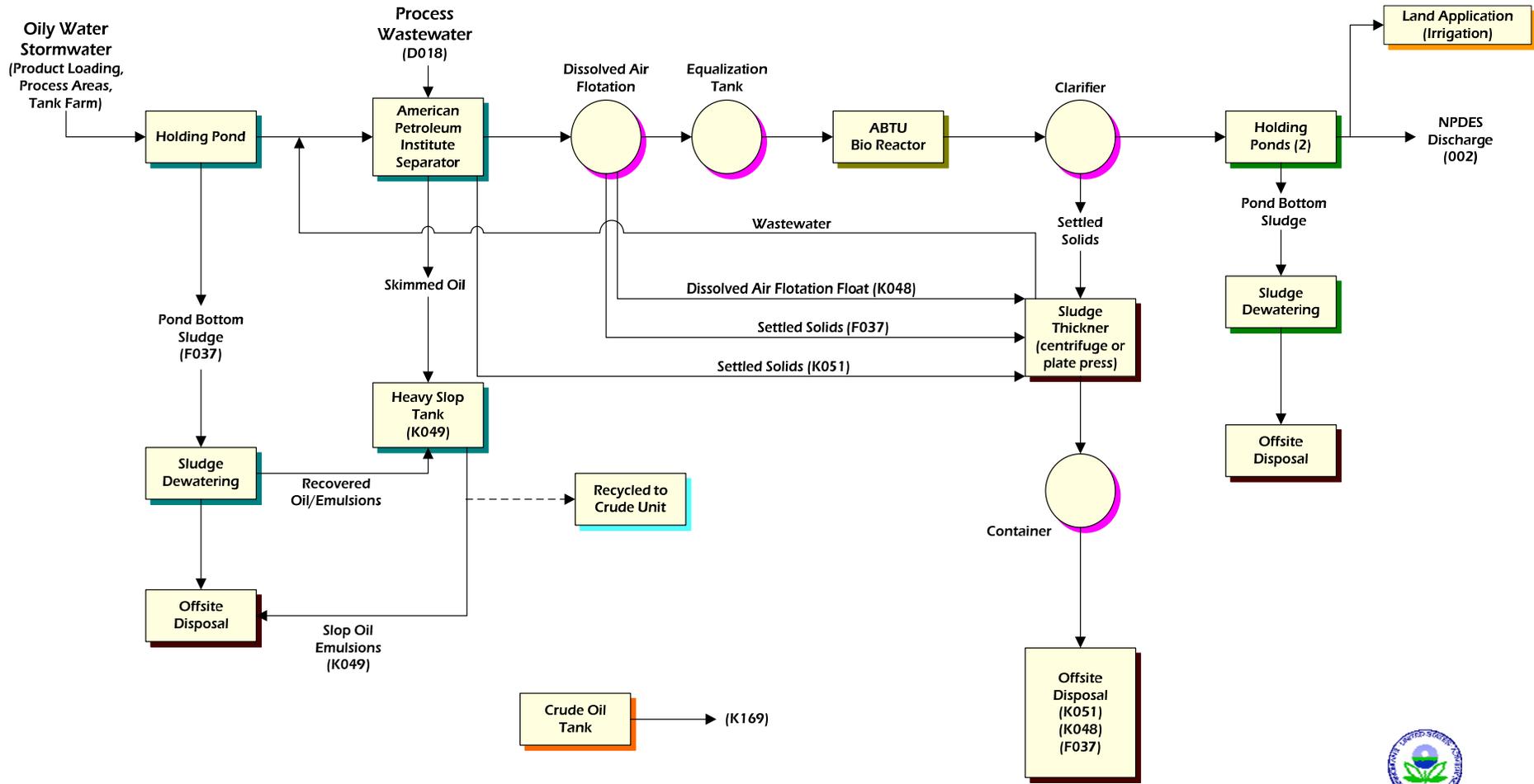
**MHA NATION FEE-TO-TRUST AND REFINERY EIS**

**ALTERNATIVE 1 & A REFINERY WASTEWATER TREATMENT PLANT HAZARDOUS WASTE GENERATION**

ANALYSIS AREA: MOUNTRAIL & WARD COUNTIES, ND

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**Tetra Tech EM Inc.**

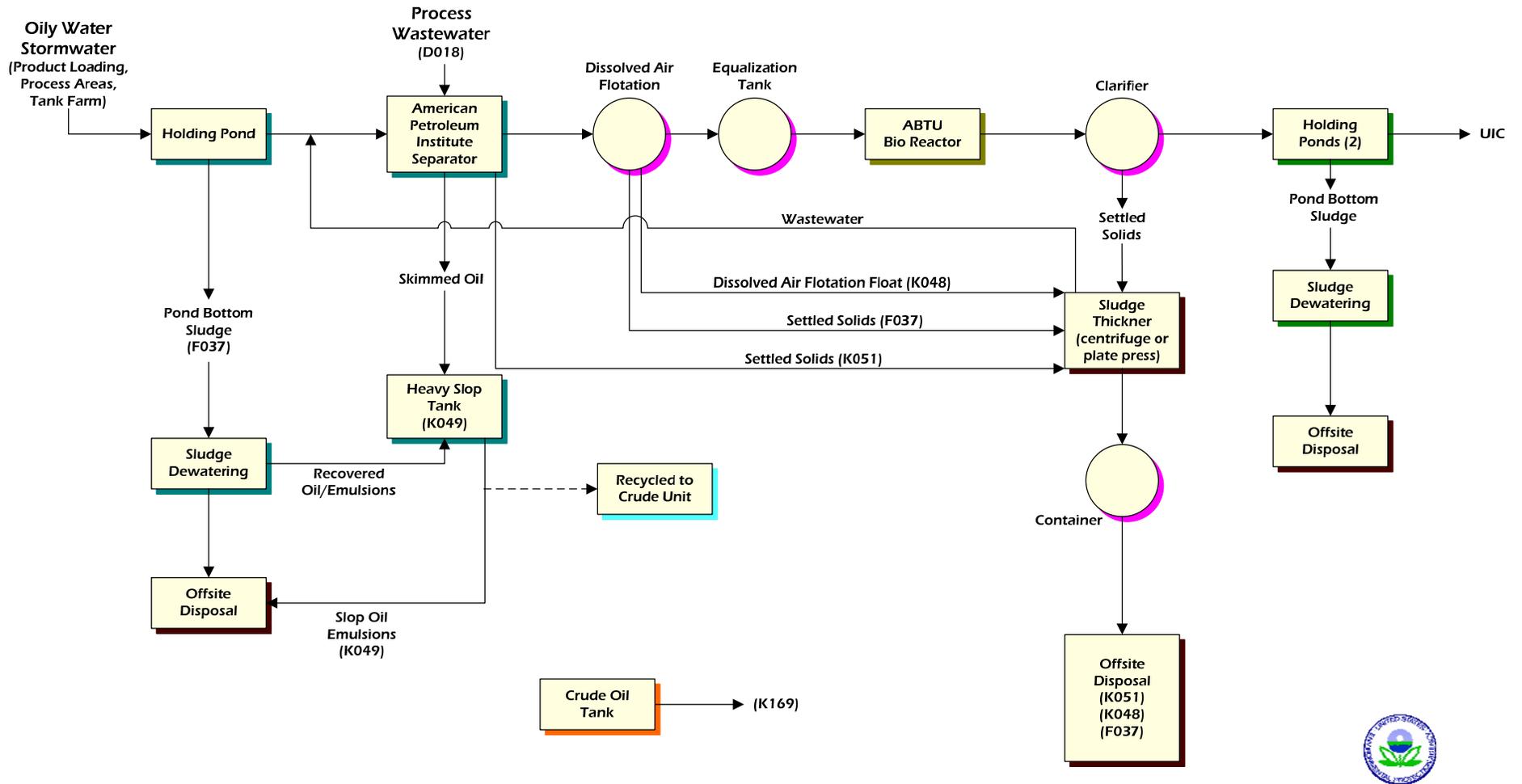


**Note:**  
The ABTU must be operated according to RCRA requirements to prevent the generation of F037/F038 in the ABTU and in downstream units.

Source: Based on information from Greystone Environmental Consultants, Inc.



<b>MHA NATION FEE-TO-TRUST AND REFINERY EIS</b>	
<b>ALTERNATIVE 1 &amp; B REFINERY WASTEWATER TREATMENT PLANT HAZARDOUS WASTE GENERATION</b>	
ANALYSIS AREA: MOUNTRAIL & WARD COUNTIES, ND	
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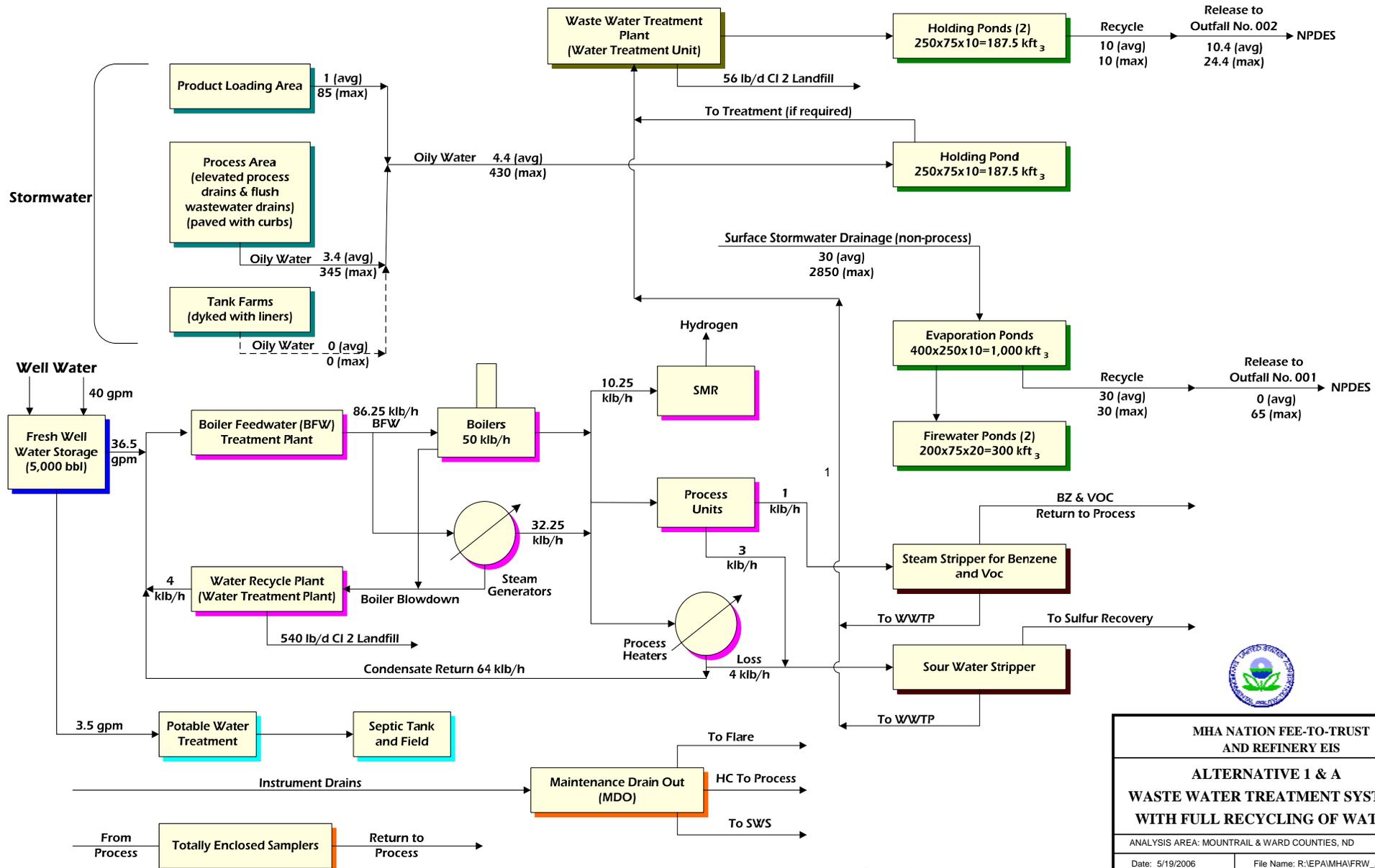


**Note:**  
The ABTU must be operated according to RCRA requirements to prevent the generation of F037/F038 in the ABTU and in downstream units.

Source: Based on information from Greystone Environmental Consultants, Inc.



<b>MHA NATION FEE-TO-TRUST AND REFINERY EIS</b>	
<b>ALTERNATIVE 1 &amp; C REFINERY WASTEWATER TREATMENT PLANT HAZARDOUS WASTE GENERATION</b>	
ANALYSIS AREA: MOUNTRAIL & WARD COUNTIES, ND	
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<b>TETRA TECH EM INC.</b>	



**MHA NATION FEE-TO-TRUST  
AND REFINERY EIS**

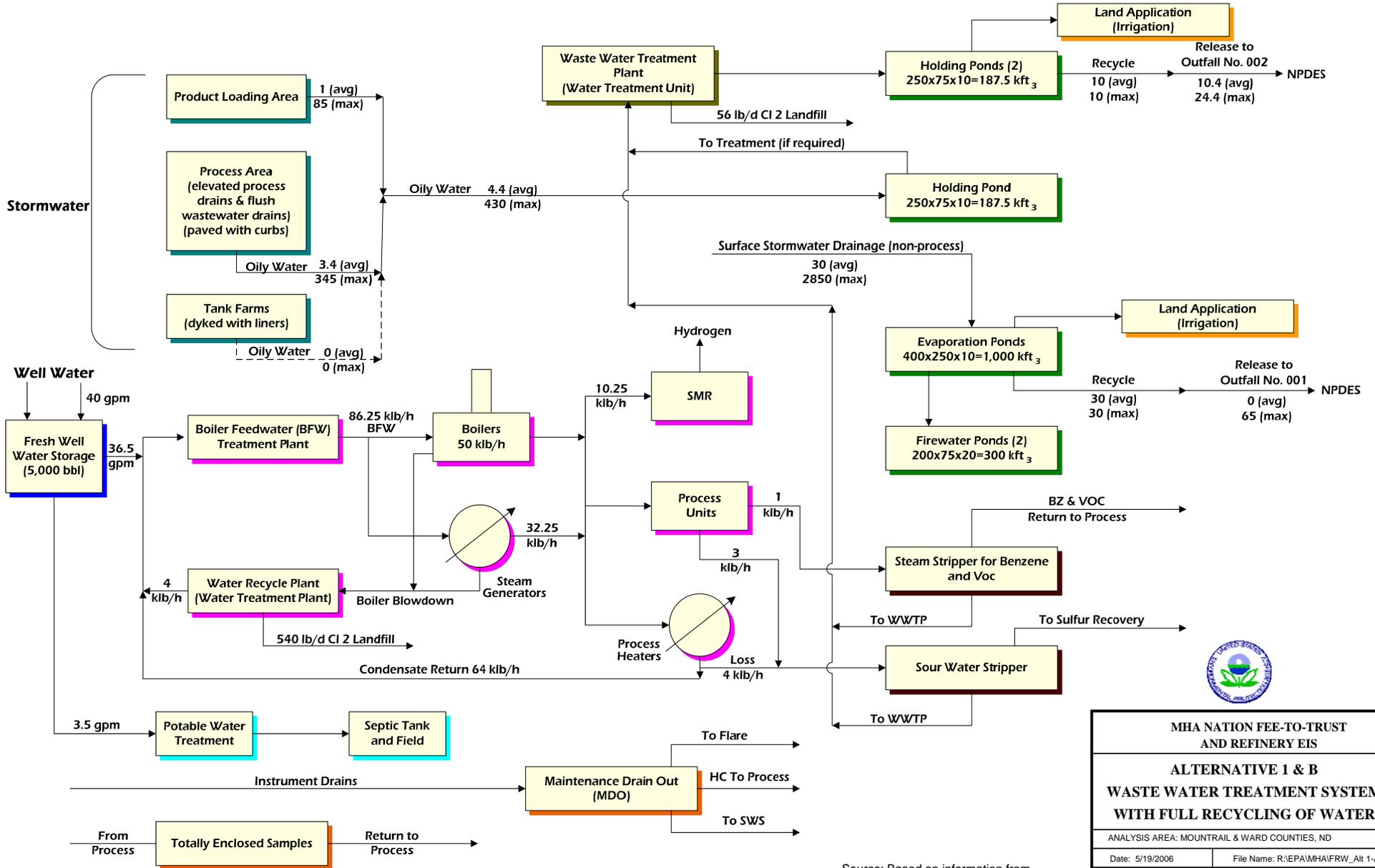
**ALTERNATIVE 1 & A  
WASTE WATER TREATMENT SYSTEM  
WITH FULL RECYCLING OF WATER**

ANALYSIS AREA: MOUNTRAIL & WARD COUNTIES, ND

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**TETRA TECH EM INC.**

Source: Based on information from Greystone Environmental Consultants, Inc.



**MHA NATION FEE-TO-TRUST  
AND REFINERY EIS**

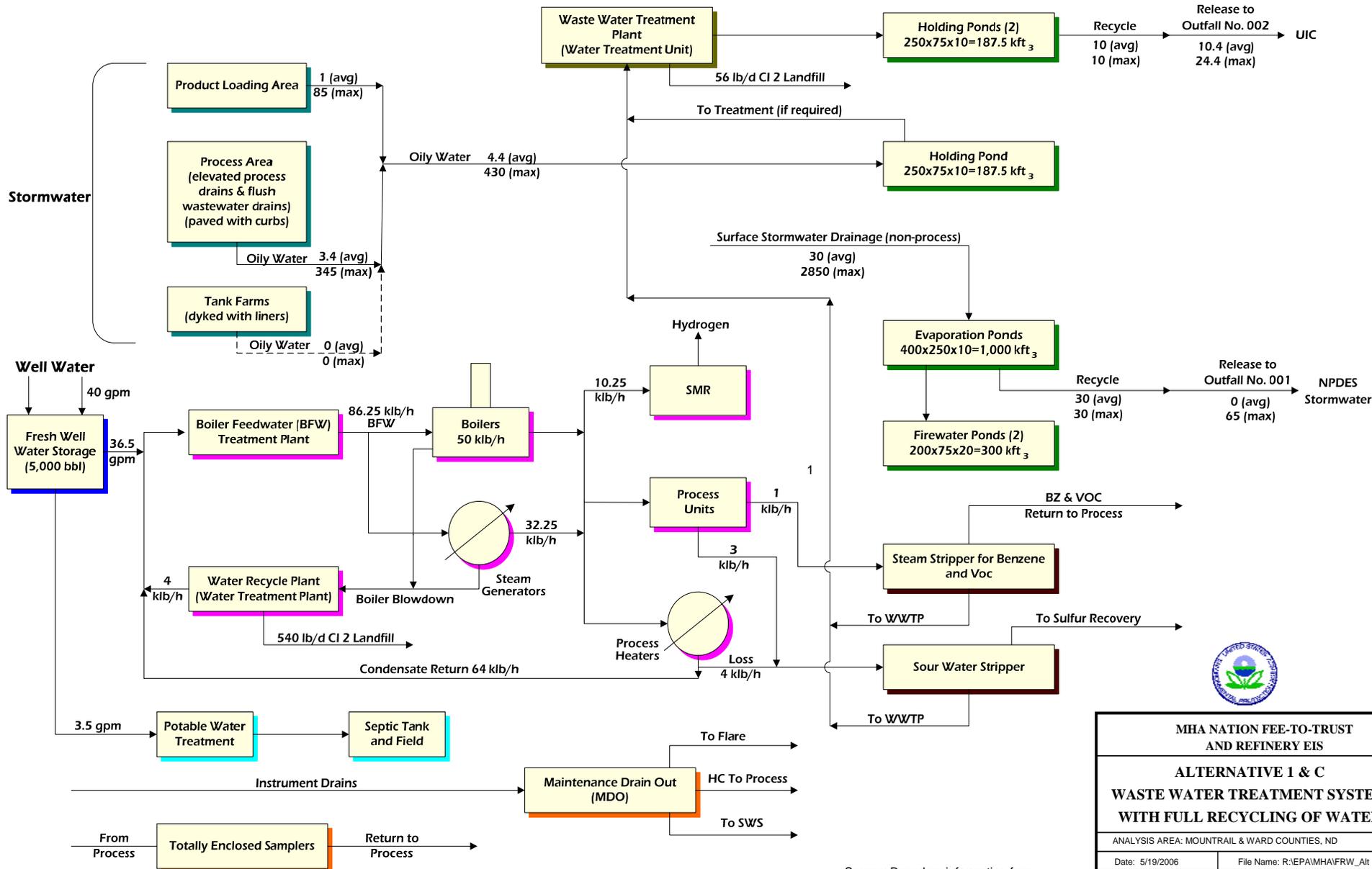
**ALTERNATIVE 1 & B  
WASTE WATER TREATMENT SYSTEM  
WITH FULL RECYCLING OF WATER**

ANALYSIS AREA: MOUNTRAIL & WARD COUNTIES, ND

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Source: Based on information from Greystone Environmental Consultants, Inc.



MHA NATION FEE-TO-TRUST AND REFINERY EIS

ALTERNATIVE 1 & C

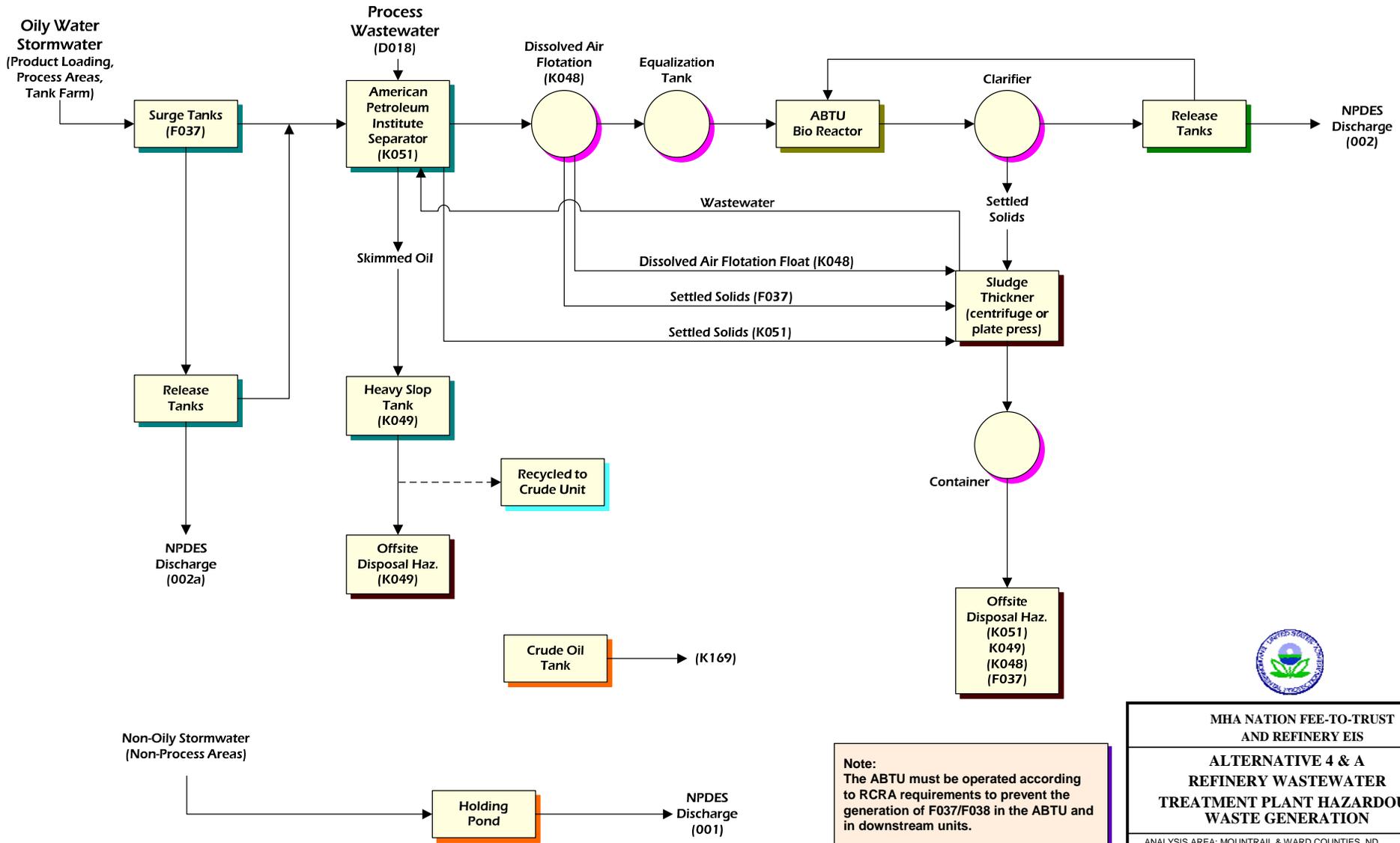
WASTE WATER TREATMENT SYSTEM WITH FULL RECYCLING OF WATER

ANALYSIS AREA: MOUNTRAIL & WARD COUNTIES, ND

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**TETRA TECH EM INC.**

Source: Based on information from Greystone Environmental Consultants, Inc.

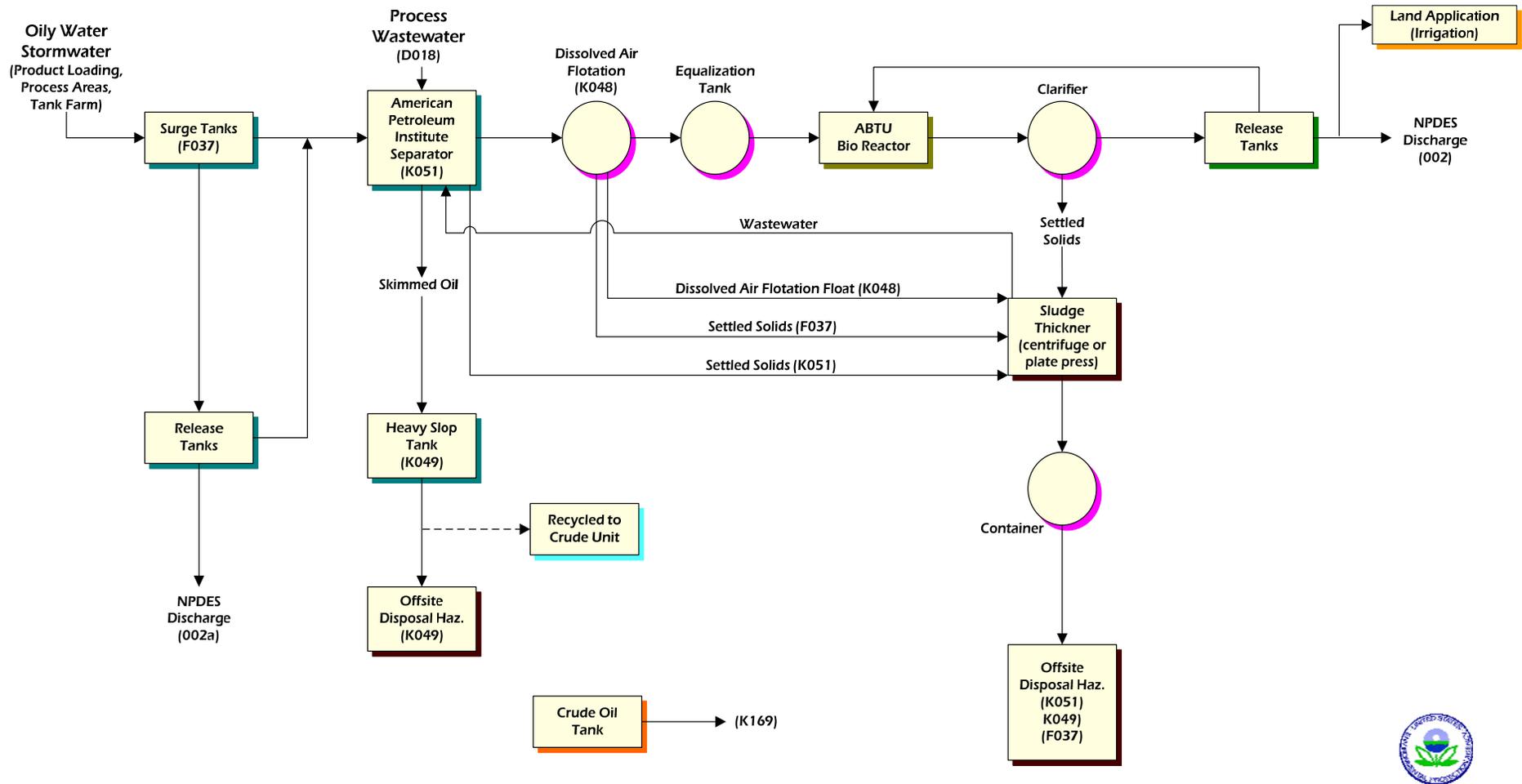


**Note:**  
The ABTU must be operated according to RCRA requirements to prevent the generation of F037/F038 in the ABTU and in downstream units.

Source: Based on information from Greystone Environmental Consultants, Inc.



<b>MHA NATION FEE-TO-TRUST AND REFINERY EIS</b>	
<b>ALTERNATIVE 4 &amp; A REFINERY WASTEWATER TREATMENT PLANT HAZARDOUS WASTE GENERATION</b>	
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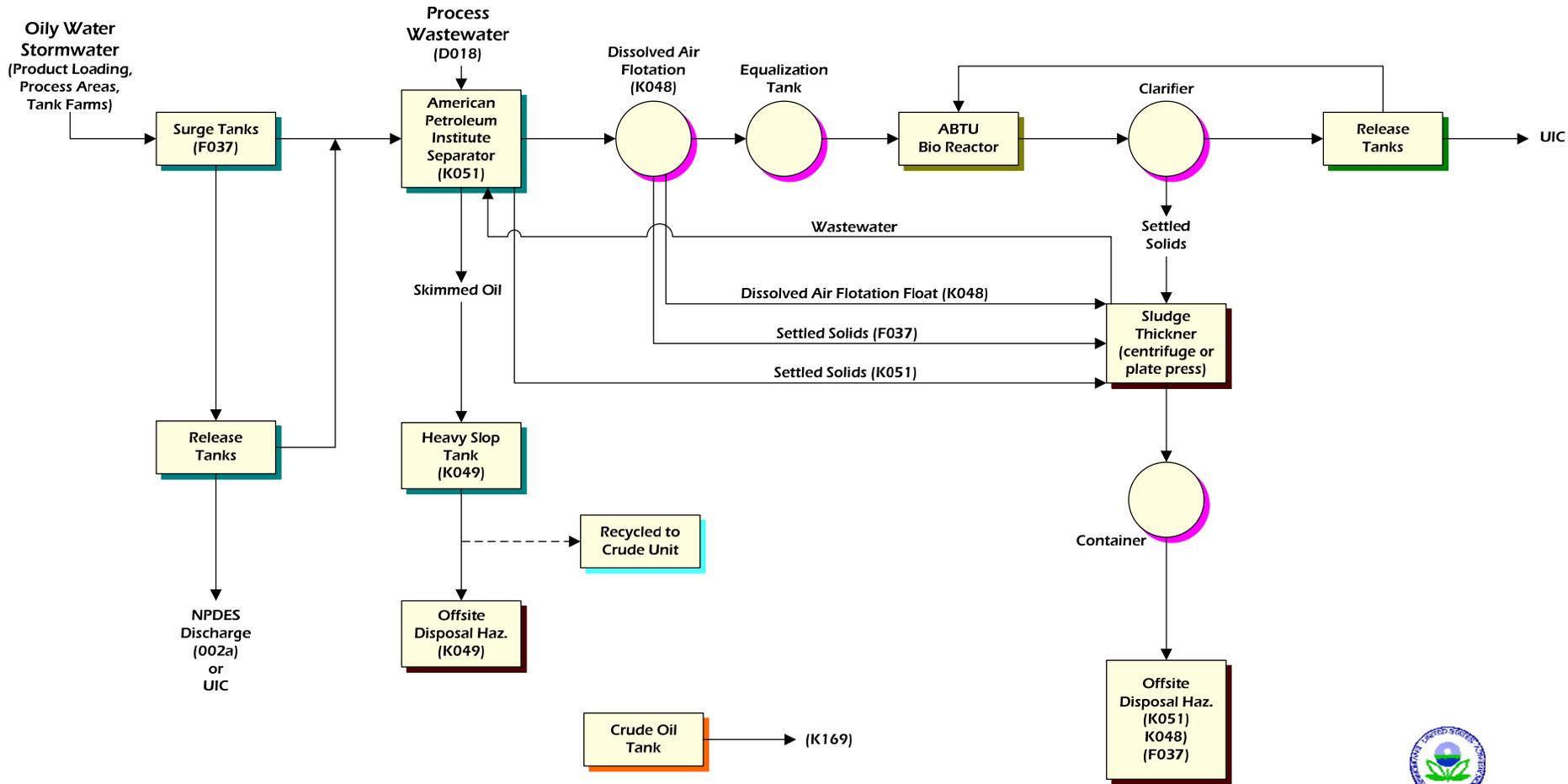


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The ABTU must be operated according to RCRA requirements to prevent the generation of F037/F038 in the ABTU and in downstream units.

Source: Based on information from Greystone Environmental Consultants, Inc.



<b>MHA NATION FEE-TO-TRUST AND REFINERY EIS</b>	
<b>ALTERNATIVE 4 &amp; B REFINERY WASTEWATER TREATMENT PLANT HAZARDOUS WASTE GENERATION</b>	
<small>ANALYSIS AREA: MOUNTRAIL &amp; WARD COUNTIES, ND</small>	
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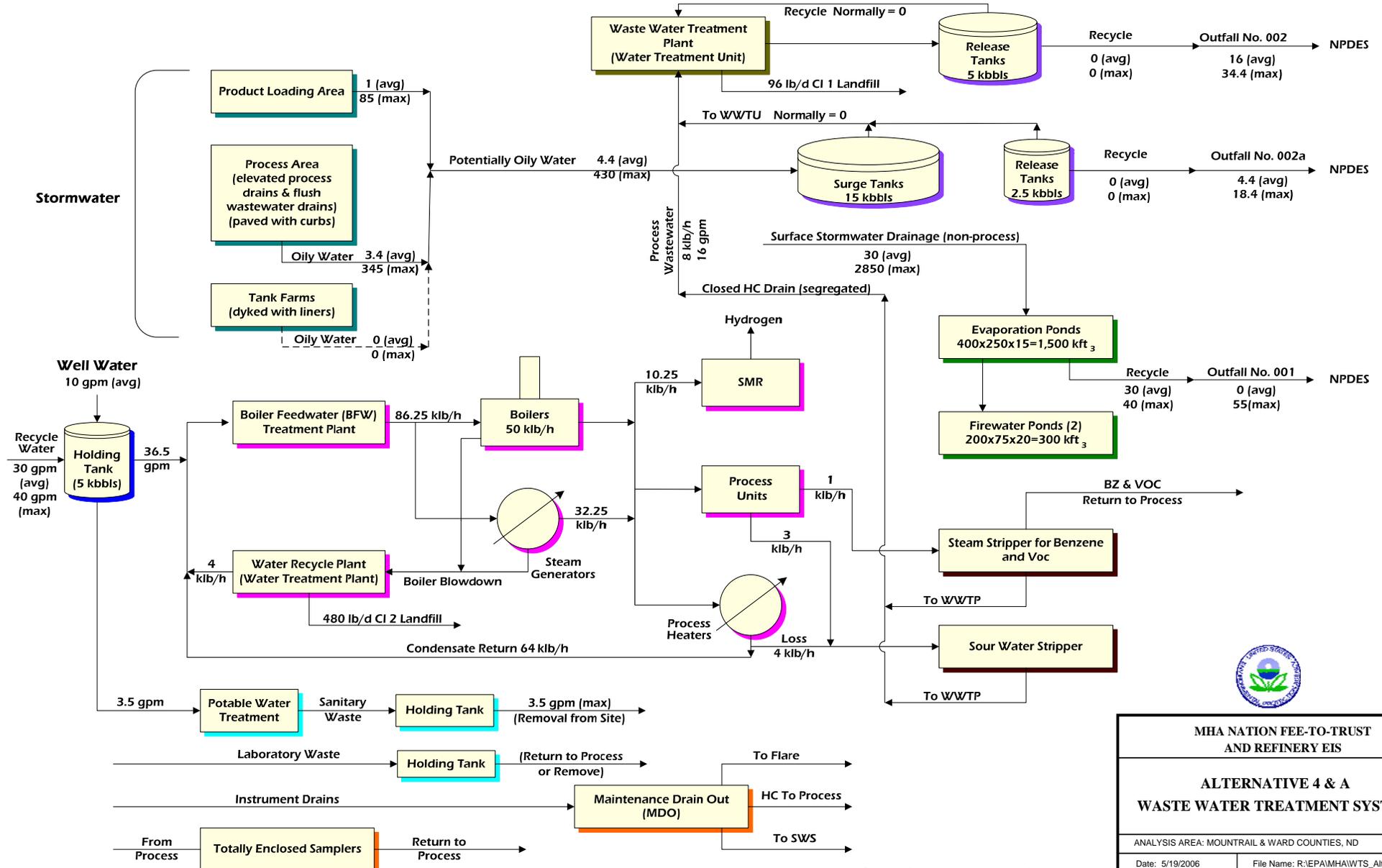


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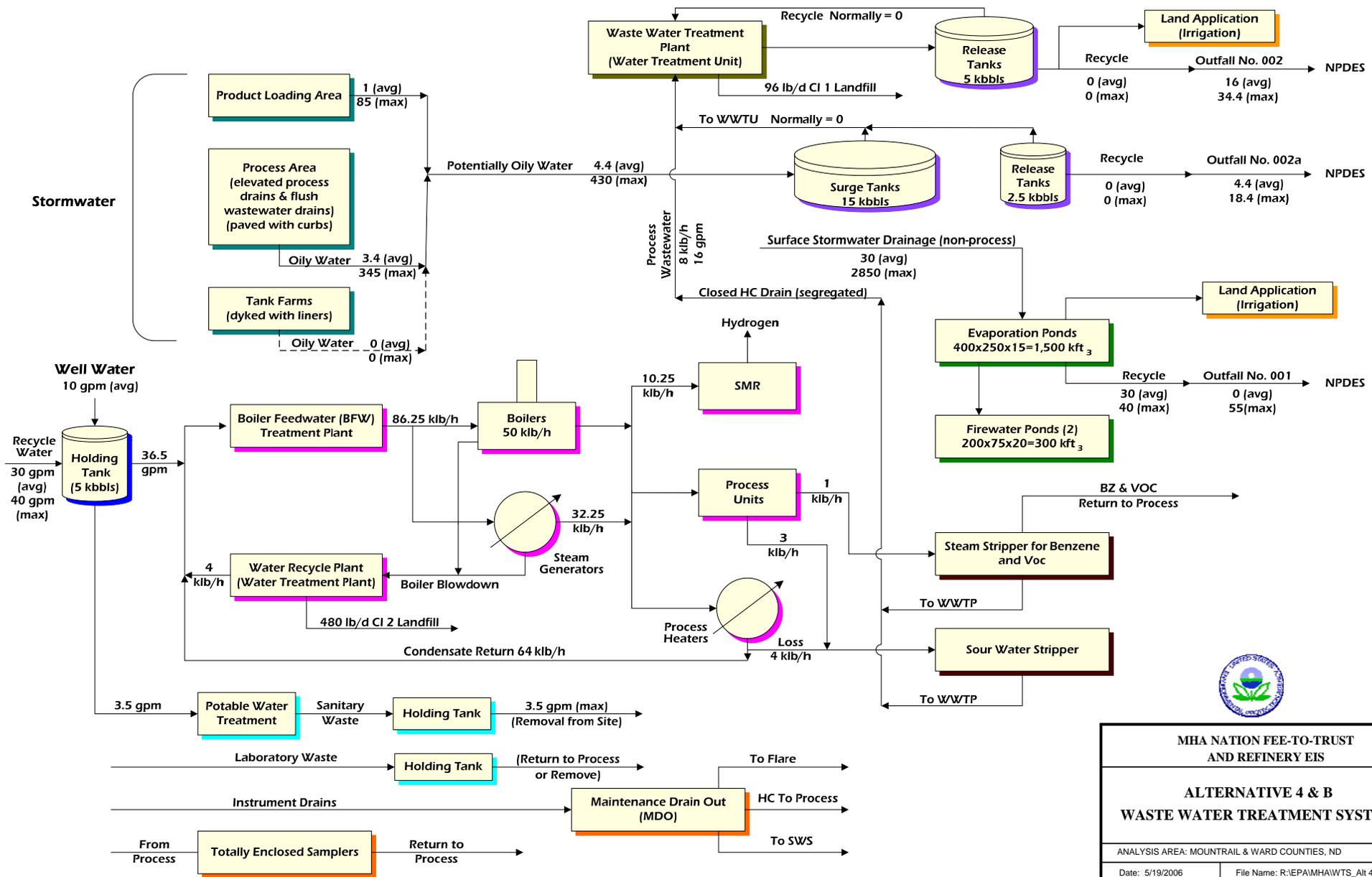


<b>MHA NATION FEE-TO-TRUST AND REFINERY EIS</b>	
<b>ALTERNATIVE 4 &amp; C REFINERY WASTEWATER TREATMENT PLANT HAZARDOUS WASTE GENERATION</b>	
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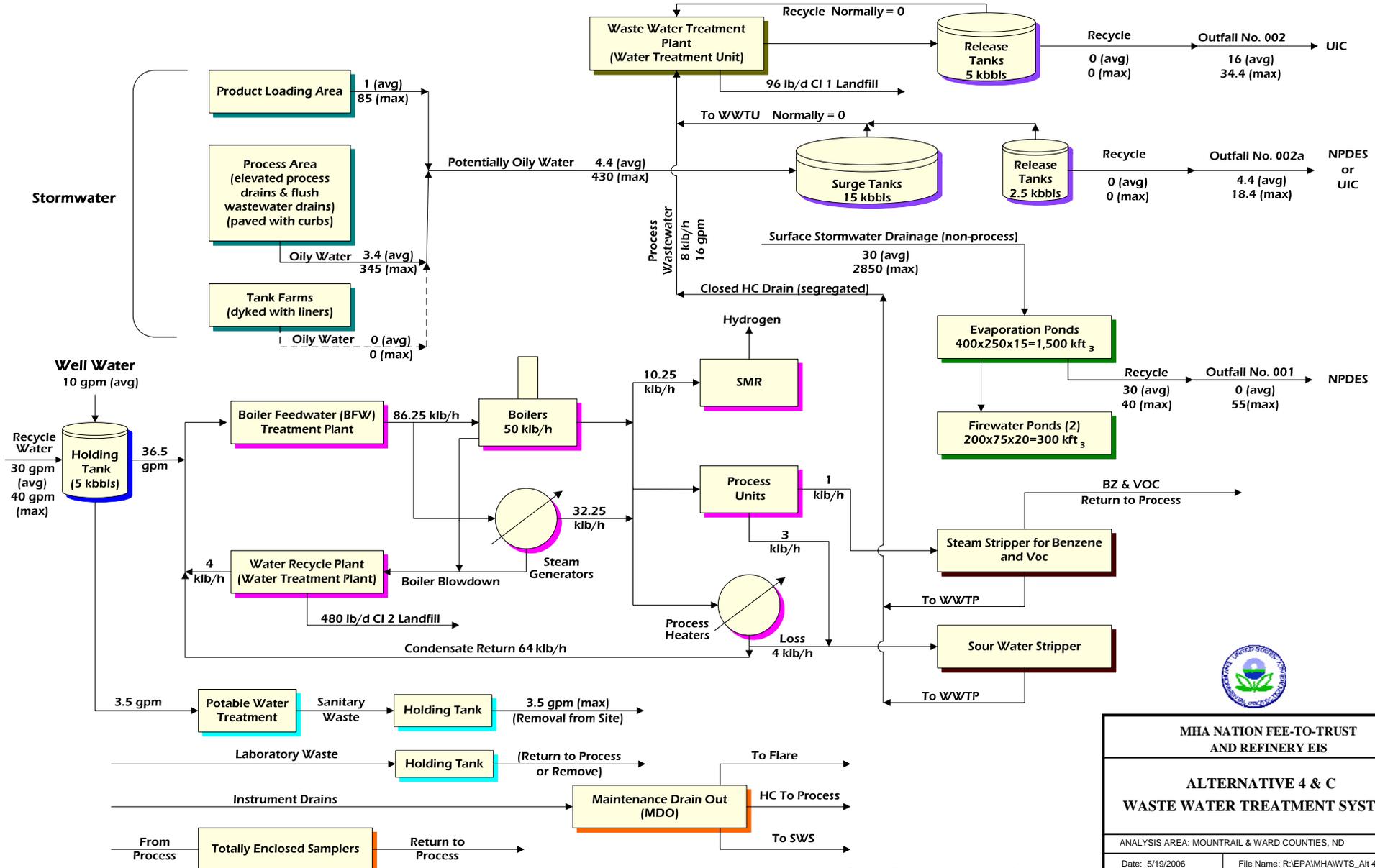
MHA NATION FEE-TO-TRUST AND REFINERY EIS	
ALTERNATIVE 4 & A WASTE WATER TREATMENT SYSTEM	
ANALYSIS AREA: MOUNTRAIL & WARD COUNTIES, ND	
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<b>TETRA TECH EM INC.</b>	

Source: Based on information from Greystone Environmental Consultants, Inc.



MHA NATION FEE-TO-TRUST AND REFINERY EIS	
ALTERNATIVE 4 & B WASTE WATER TREATMENT SYSTEM	
ANALYSIS AREA: MOUNTRAIL & WARD COUNTIES, ND	
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Source: Based on information from Greystone Environmental Consultants, Inc.



<b>MHA NATION FEE-TO-TRUST AND REFINERY EIS</b>	
<b>ALTERNATIVE 4 &amp; C WASTE WATER TREATMENT SYSTEM</b>	
ANALYSIS AREA: MOUNTRAIL & WARD COUNTIES, ND	
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<b>TETRA TECH EM INC.</b>	

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