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BLACK WATER PETROLEUM INC PROJECT SUMMARY

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Date: January 26, 2021

Contents

Project Description.....	2
Operator Details	3
Description of Site	4
Project Design.....	5
Site Establishment and Preliminary Activities	6
Storage Areas.....	7
ENVIRONMENTAL ISSUES.....	7
Storm water Damage Prevention	8
Education and Awareness.....	9
Worker Conduct on Site.....	9
Air Quality / Dust Pollution.....	10
Soil Erosion.....	10
Waste Management.....	10
Environmental Management.....	11
Closure	15
APPENDIX.....	16
Spill Report	16
Inspections	16
Monthly Checklist for Aboveground Storage Tanks	17

Project Description

Black Water Petroleum Inc. is a Guyanese registered company with interested in importing, wholesaling and retailing petroleum products principally for hinterland-based industries such as mining, logging and building construction.

The petroleum products would be purchased from Caricom countries such as Suriname and Trinidad and Tobago. The Petroleum cargo will be shipped to Guyana by contracted vessels and off-loaded at our project site at Friendship Village, East Bank Demerara.

Wholesaling would engage trucks for conveyance to the hinterland sites. It is anticipated that 15 – 20 workers would be employed at this facility with most workers residing in the East Bank Demerara area.

Petroleum products such as gasoline, diesel fuel, lubricants are essential to the industrial and commercial development of Guyana`s economy and Black Water Inc. is positioned in making a positive contribution to our country`s development.

Poorly managed aboveground storage of petroleum products can be costly. Spills and other consequences of poor management can involve years of cleanup efforts and lengthy legal battles. Issues of concern include the following:

- 1) Soil and water contamination
- 2) Decreased property value due to spills and releases
- 3) Cleanup costs
- 4) Evacuation of nearby neighborhoods in the event of a sizable release
- 5) Theft and vandalism
- 6) Potential for terrorist activity
- 7) Insurance specifications
- 8) High cost of insurance coverage for environmental pollution
- 9) Government regulations (State, RDC, NDC), inspections, and enforcement actions
- 10) Adverse environmental audit

It is the considerations of the above plus others that our management plan or the wholesale / retail facility was designed.

Operator Details

Name of Project: BLACK WATER PETROLEUM INC.

Names of Developers: Mr.AZRUDDIN INTIAZ MOHAMED
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Date: 27-Jan-21

Description of Site

1) Location

The project is located at Lots 11 E&F Friendship Village East Bank of Demerara.

2) Area

The proposed storage area is 2,400 square feet (40 ft. x 60 ft.) or 223 m².

This is 5.5% of the total project area.

3) Layout

The storage area consists of three (3) above the ground cylindrical metal tanks which stores 1500 gallons each. These tanks are supported individually by a concrete slab.

See drawing of project layout included.

4) Drainage

This part of the Friendship Village is well-drained by the Demerara River and the New Hope Canal a right bank tributary of the Demerara. The property would have a network of concrete conduits, sumps, and filter system to drain the project area.

5) Land Use

The district in which the project lies is a mix of residential, commercial, and industrial. Adjacent lots to the project have established a hotel, a shipyard, and a petrol service station (Guyoil) about 200 meters south.

6) Infrastructure and Services

a) Electricity

Power to service the facility would be from the national grid supplied by the Guyana Power and Light (GPL). A standby electric generator (1500v) will be installed to supply power during emergencies.

b) Water

Potable water for domestic uses (mainly washing) would be supplied by the Guyana Water Inc. (GWI). A regular supply of water for drinking purposes of staff would be made by certified suppliers with daily procurement of bottled water. Rainwater harvesting will be installed with storage tanks (450 gallons) at each of the larger buildings – this would be implemented at a later stage of facility development.

c) Communications

Telephone providers would supply services for land line (GT&T) and mobile (GT&T and Digicel). Wi-Fi would be installed to receive reliable internet services.

d) Informational Signs

Identifying tank contents is of primary importance to the management of fuels: Signs prohibiting open flames and smoking will be posted.

e) Fire Protection Equipment

Portable fire extinguishers are required when fuel is stored. Fire protection for the storage, use, and dispensing, mixing, handling, and on-site transportation of flammable and combustible liquids several fire protection posts will be assigned on the property all clearly marked.

f) Protection against Vehicular Damage to Tanks

It is important to protect your aboveground storage tanks from damage by vehicles. Pipes, valves, and fittings can be protected with steel guard posts placed at least three feet from the tanks being protected.

Project Design

The project will be implemented in the following phases:

Phase 1: Construction

- Site surveys
- Topographic guided by the design layout submitted with this summary
- Geotechnical soil and subsurface investigations
- Hydrographic survey
 - Building construction
 - Field trials and plant and equipment testing
 - Commissioning of operations

Phase 2: Operational

The number of workers for proposed works:

Construction phase: 25

Operational: 16

Site Establishment and Preliminary Activities

During surveys and preliminary investigations	Marking of survey points will be done with the Engineers approval.
	Vegetation clearing is already at a minimum with lawn grasses covering the project area
Setting up construction camp	<ul style="list-style-type: none"> • There will be no overnight accommodation available at the Contractors Camp. • The size of the construction camp should be kept to a minimum. • Adequate parking would be provided for staff and visitors. • The contractor would be required to attend to the drainage of the camp site to avoid standing water and / or erosion.
	<ul style="list-style-type: none"> • Temporary toilet facilities would be provided. • Bins and / or skips shall be provided at convenient intervals for disposal of waste within the construction camp. • Bins would have liner bags for efficient control and safe disposal of waste. • Recycling and the provision of separate waste receptacles for different types of waste would be encouraged.

Storage Areas

<p>Storage Areas During Construction</p>	<ul style="list-style-type: none"> a) Choice of location for storage areas must take into consideration prevailing winds, distance to River and general on-site topography. b) Storage areas would be designated, demarcated, and fenced if necessary. c) Storage areas would be secured to minimize the risk of crime. They should be safe from access by children and animals, etc. d) Fire prevention facilities (extinguishers, sand buckets, etc.) shall be present at all storage facilities.
<p>Hazardous Substances and Materials</p>	<ul style="list-style-type: none"> a) Hazardous substances are those that are potentially poisonous, flammable, carcinogenic, or toxic e.g., LPG. b) Material safety Data Sheets (MSDSs) shall be readily available on site for all chemicals and hazardous substances to be used on site. Where possible and available, MSDSs would additionally include information on ecological impacts and measures to minimize negative environmental impacts during accidental releases or escapes. c) Hazardous storage areas shall be bunded with an impermeable liner to protect groundwater and soil from contamination. The Contractor shall submit a method statement to the Engineer for approval. d) Storage areas containing hazardous substance / materials must be clearly sign posted. e) The proximity of houses, schools, etc. would be taken into consideration when deciding on storage areas for hazardous substances. f) Residents living adjacent to the construction site must be notified of the existence of the hazardous storage area. g) Staff dealing with these materials / substances must be aware of their potential impacts and follow appropriate safety measures. h) Contractors shall submit a method statement and programmes for the storage of hazardous materials and emergency procedures.

ENVIRONMENTAL ISSUES

General Maintenance

Dry grass, weeds, and combustible materials shall not be allowed to accumulate around petroleum tanks.

Containment and Filling

All outdoor storage tanks will have secondary containment large enough to accommodate a total spill from the largest tank plus a 24-hour rainfall event. Each tank may be filled to only 95 percent capacity.

Storm water Damage Prevention

<p>Serious financial and environmental impacts can be caused by unmanaged stormwater.</p>	<ul style="list-style-type: none">a) To prevent storm water damage, the increase in storm water runoff resulting from the construction activities must be estimated and the drainage system accessed accordingly. A drainage programme would be submitted to the Civil Engineer in Charge for approval.b) During site establishment, stormwater culverts and drains are to be located and covered with metal grids to prevent blockages if deemed necessary by the Engineer.c) Temporary cut-off drains and berms maybe required to capture stormwater and promote infiltration, or to divert stormwater flow to avoid erosion.
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Education and Awareness

<p>Worker Education on General Environmental Conduct</p> <p><i>These points need to be made clear to staff on site before the project begins and reinforced during the project</i></p>	<p>Topics to be covered should include:</p> <ul style="list-style-type: none">• What is meant by “environment”?• Why the environment needs to be protected and conserved.• How construction activities can impact on the environment• What can be done to mitigate against such impacts?• Awareness of emergency and spills response provisions• Social responsibility during construction, e.g., being considerate to residents. <p>It is the contractors` responsibility to provide the site foreman with no less than 1 hour’s environmental training and to ensure that the foreman has sufficient understanding to pass this information onto the construction staff</p>
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Worker Conduct on Site

During staff induction, followed by ongoing monitoring.

<p>A general regard for the social and ecological well-being of the site and adjacent areas is expected of the site staff. Workers need to be made aware of the following general rules:</p> <ol style="list-style-type: none">1) No alcohol / drugs to be present on site.2) No firearms allowed on site or in vehicles transporting staff to / from site (unless used by security personnel.3) Prevent excessive noise.4) Prevent unsocial behavior.5) Bringing pets e.g., caged birds onto the site is forbidden.6) No harvesting of firewood from the site or from the adjacent areas.7) Construction staff are to make use of the facilities provided for them, as opposed to ad-hoc alternatives, (e.g., fires for cooking, the use of surrounding areas / bush as a toilet is forbidden).8) Trespassing on private / commercial properties adjoining the site is forbidden.9) Driving and operating plant and equipment under the influence of alcohol is prohibited.10) Other than the pre-approved security staff, no workers shall be permitted to live on site.

Air Quality / Dust Pollution

- Vehicles and mobile equipment travelling along the internal access road must adhere to the speed limits to avoid creating excessive dust.
- Building construction– areas that have been stripped of vegetation must be dampened periodically to avoid excessive dust.

Soil Erosion

The stripping of vegetation during preliminary activities on site greatly increases the risk of soil erosion.

- a) The time that stripped areas are left open to exposure would be minimized wherever possible. Care would be taken to ensure that lead times are not excessive.
- b) Stormwater control should be undertaken to prevent soil loss from the site, especially during periods of heavy downpour.
- c) During site set up to manage all excavations.
- d) Procedures that are in place to conserve topsoil during the construction phase of the project are to be applied to the set-up phase, i.e., topsoil is to be conserved while providing access to the site and setting up the structures.

Waste Management

All protective measures should be taken to ensure that wastes management systems are put in place if pollution is to be avoided:

- 1) Minimize waste production.
- 2) Practice correct handling and disposal of all waste materials in an environmentally friendly manner.
- 3) Reuse and reclaim materials whenever possible.
- 4) All hazardous materials (reactive, flammable, radioactive, corrosive), solvents, oils, process residues and wastes water shall be disposed of in a manner so as to prevent contamination of soil and of surface and groundwater.
- 5) Care should be taken in the handling and disposal of used engine oil, hydraulic fluids from lorries, buses, or mechanical plants, which can be carcinogenic (cancer causing) and must never be discharged in surface waters. This and other hazardous wastes can be collected and sent to be recycled.
- 6) Used oils may be burned for energy recovery; however, testing is necessary to ensure that it is free of hazardous contaminants.
- 7) Used oil can also be treated before disposal either by solidification and stabilization which makes it less likely to be transported by water or by solvent extraction which reduces the volume of wastes to be transported. Wastewater from car wash bay should not pass through the interceptors.
- 8) Promote continuous monitoring, assessment and improvement of the waste management plan and facilities, to recognize faults in the system or leakage in equipment, which should be promptly remedied.

- 9) De-waxing, degreasing, and cleaning of vehicles should only take place in designated wash bays. Such operations should never be carried out in open ground or areas where they can reach the drainage systems or watercourses.
- 10) Wash bays, vehicle maintenance and dismantling activities must be carried out on an impervious surface and should be separated from other areas by a kerb. Effluent should be disposed of via oil separator; if however this is not installed then wastes should be sent to a sealed sump; and
- 11) Precautions should be taken in the use of white spirits and paraffin as degreasers since they may poison aquatic life.

Environmental Management

Gas stations can be the source of several contaminants when oil and gas spilled onto paved areas are easily washed away by water, either from hoses, piping or rainfall. The following actions are planned for implementation on a sustained basis at the facility:

Facility – General

- "Spot clean" leaks and drips routinely. Leaks are not cleaned up until the absorbent is picked up and disposed of properly.
- A spill response plan will be rolled-out and ensure that employees are trained on the elements of the plan.
- Manage materials and waste to reduce adverse impacts
- Training of all employees upon hiring and annually thereafter on proper methods for handling and disposing of waste.
- Make sure that all employees understand storm water discharge
- Use a training log or similar method to document training.
- Label drains within the facility boundary, by paint / stencil (or equivalent), to indicate whether they flow to an oil/water separator, directly to the sewer, or to a storm drain.

Fuel Dispensing Areas

- Maintain fuel dispensing areas using dry cleanup methods such as sweeping for removal of litter and debris, or use of rags and absorbents for leaks and spills. Fueling areas should never be washed down unless the wash water is collected and disposed of properly.
- Fit fuel dispensing nozzles with "hold-open latches" (automatic Shut-offs) except where prohibited by Guyana Fire Service.

Outdoor Waste Receptacle Area

- Spot clean leaks and drips routinely to prevent runoff of spillage.
- Minimize the possibility of storm water pollution from outside waste receptacles by doing at least one of the following:
 - Use only watertight waste receptacle(s) and keep the lid(s) closed, or
 - Grade and pave the waste receptacle area to prevent run-on of storm water, or
 - Install a roof over the waste receptacle area, or
 - Install a low containment berm around the waste receptacle area, or
 - Use and maintain drip pans under waste receptacles.

Fuel Dispensing Areas

Fuel dispensing areas must be paved with Portland cement concrete (or, equivalent smooth impervious surface), with a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of storm water to the extent practicable. The fuel dispensing area is defined as extending 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus 1 foot, whichever is less. The paving around the fuel dispensing area may exceed the minimum dimensions of the "fuel dispensing area" stated above.

The fuel dispensing area must be covered, and the cover's minimum dimensions must be equal to or greater than the area within the grade break or the fuel dispensing area, as defined above. The cover must not drain onto the fuel dispensing area.

Outdoor Waste Receptacle Area

Grade and pave the outdoor receptacle area to prevent run-on of storm water to the extent practicable

Maintenance of Water Quality

Incorrect disposal of substances and materials and polluted run-off can have serious negative effects on groundwater quality.

- a) Storage areas that contain hazardous substances must be banded with an approved impermeable liner.
- b) Spills in banded areas must be cleaned up, removed and disposed of safely from the banded area as soon after detection as possible to minimise pollution risk and reduced banding capacity.
- c) A designated, banded area is to be set aside for vehicle washing and maintenance. Materials caught in this banded area must be disposed of to a suitable waste site or as directed by the Engineer.

- d) d) Provision should be made during set up for all polluted runoff to be treated to the Engineers approval before being discharged into the stormwater system (this will be required for the duration of the project).

Management of Mitigation Measures

The possibility of spills during fueling operations always exists, and spills of gasoline and diesel fuel during discharges from vessels or tankers fueling are a common source of pollution and these will be effectively managed.

Design and construction of facility: Therefore, installation of equipment that can minimize the occurrence of spills and taking precautions to contain, absorb, and minimize the spread of petroleum products spilled during fueling operations.

Spill Prevention, Control, and Countermeasures (or SPCC) Plan is being designed and developed for the facility.

Short-Term Actions

- Take immediate action to safely stop and contain the release.
- Report the release to the National Response Center, CDC, EPA and local regulatory authority within 24 hours.
- Make sure the release poses no immediate hazard to human health and safety by removing explosive vapors and fire hazards. The fire department would be able to help or advise with this task.
- Removal of petroleum from the UST or AST system to prevent further release into the environment.
- Find out how far the petroleum has moved and begin to recover the leaked petroleum (such as product floating on the water table). Report progress and any information collected to EPA and CDC, NDC no later than 20 days after confirming a release.
- Investigate if the release has impacted the soil and subsurface environment. This investigation will determine the extent of contamination both in soils and groundwater. Report to EPA.

Use automatic shutoffs on fuel lines and at hose nozzles to reduce fuel loss.

A commercial fuel line shutoff will be located between the fuel storage tank and the dockside fuel pump. The shutoff automatically stops fuel movement when the system senses passage of a high volume of fuel through the line. This shutoff can also be manually closed when the fuel dock is not in operation or during emergencies.

Regular inspection, maintenance, and replacement fuel hoses, pipes, and tanks as part of Reliability Centered Maintenance programme.

Installation of a spill monitoring system - a real-time monitoring system that can detect spilled crude and petroleum-based products 24 hours a day in any weather condition. The floating instrument detects sheen as well as emulsion layers below the surface, and it also determines the type of spill.

Install easy-to-read signs at strategic locations that explain proper fueling, spill prevention, and spill reporting procedures.

Spill response

In event of any spill all practical and reasonable actions must be taken immediately to minimize the effect of the spill on the environment and to safeguard the health of the public, self and employees. The EPA will be notified of a spill within 24 hours;

All spills and leakage must be recorded with the necessary prevention measures implemented to avoid recurrences; and

A spill kit would be provided at all sites that are prone to spills. Kits should contain absorbent material, drain seals disposal container and others appropriate tools.

Aboveground Storage Tanks

Provision of corrosion protection for ASTs and any buried piping. Options include elevating tanks, resting tanks on continuous concrete slabs, installing double-walled tanks, or cathodically protecting the tanks and piping.

Prevent rainwater from filling containment areas, you may need to cover the tank with a roof structure.

To prevent evaporative losses and moisture condensation, you may want to paint tanks a reflective color, as shown in the above photos.

Regularly check the dispenser hoses and piping for any leaks (a common problem).

On-site staff should be trained to handle emergencies, such as leaks or explosions.

Checklist for AGT

Key components of the Spill Prevention, Control and Countermeasure (SPCC) Plan

All ASTs should have a secondary means of containment capable of holding 100% of the largest tank capacity plus sufficient room to hold stormwater/rainwater. Options include either having double-walled tanks; berms, dikes, or vaults; or leak-proof retention ponds or holding basins.

Buried piping must be protectively wrapped and/or coated to prevent corrosion, and periodically tested for structural integrity.

Routinely monitor ASTs to ensure they are not leaking. Areas to inspect include tank foundations, connections, coatings, tank walls, and piping systems. The new SPCC rule requires combining tank inspection with integrity testing based on industry standards.

Control drainage from diked containment areas with manually controlled valves. Any discharge should be inspected for petroleum and chemicals prior to disposal.

Provide adequate security including fencing and lighting. Tank valves must be closed and locked when not operating. Starter controls must be closed and locked when not operating, and accessible only to authorized personnel.

Oil handling employees must be trained in proper handling of oil and applicable pollution control laws, rules, and regulations. Training records will be maintained for at least three years.

Closure

Decommissioning and/or closure of the facility is not anticipated. However, should this be required for any reason, the Environmental Protection Agency will be consulted for guidance. The following conditions are envisaged at this stage:

- e) A soil and groundwater contamination investigation will be conducted to determine the presence, nature, and extent of any contamination. This will provide information as to the status of the site in terms of the level of contamination, which will ultimately influence the level or type of remediation that needs to be undertaken, if any.
- f) Any water used for flushing the pipes and tanks would be disposed of safely if it is not suitable for disposal via the sewer system. The relevant department at the NDC would be contacted regarding the discharge of water containing waste to the sewer system.
- g) The water containing any waste generated would pass through an oil/water separator prior to discharge to the municipal sewer system.
- h) All solid waste generated from the removal of the tanks would be handled according to the precautionary principle. This implies that waste (including soils, metals, and other material) must be treated as hazardous unless proven otherwise.
- i) All contaminated soil and other material would be disposed of at a permitted landfill site that is authorized to accept such wastes.
- j) Waste would not be allowed to be stockpiled on site for extensive periods but will be disposed of as generated.

APPENDIX

Spill Report

The format of spill report will contain the following:

- 1) Product name and description
- 2) Date and time of spill
- 3) Cause of spill
- 4) Spill location (include site specific map with address and GPS coordinates).
- 5) Description of area affected (m² or m³)
- 6) Amount spilled.
- 7) Amount recovered.
- 8) Containment and cleanup activities (with dates).
- 9) Disposal of recovered material.
- 10) Individuals present at the scene (names, positions, organizations).
- 11) Presence or absence of a contingency plan, and whether it was implemented.
- 12) List of preventive measures implemented.
- 13) Respondent's signature and position within company.
- 14) Incident number (included in all correspondence).

Inspections

Thorough monthly inspections of the fuel storage tanks will be undertaken.

Documentation of the inspections will be kept for at least three years or for a period requested by relevant state agencies. Deficiencies noted during the inspection would be corrected as soon as possible.

Inspections would include at least the following:

- 1) A visual examination of the tank system for deterioration, including but not limited to the tank and its coating, hoses and fittings, pipes, foundation, and drainage mechanism.
- 2) A dipstick inspection of tank contents, at the lowest point, for the presence of water.
- 3) A check of the interstitial space (i.e., the space between the walls) of a double-walled tank for accumulation of fuel or water.
- 4) Confirmation that all drain valves are securely closed when not in use.
- 5) An inspection for accumulation of water or fuel in the containment area.
- 6) A check of the spill basket to make sure it is clean and functional.
- 7) A check of normal and emergency vents for obstructions or restrictions that could interfere with proper operation.
- 8) A check of auxiliary equipment for operational malfunctions.
- 9) An investigation of conditions that may pose a fire, safety hazard, or environmental hazard.
- 10) A search for evidence of a release from the tank system.
- 11) Confirmation that spill kits are immediately accessible.

Monthly Checklist for Aboveground Storage Tanks

Monthly Checklist for Aboveground Storage Tanks			
Date _____		Completed by: _____	
Location: _____		Tank No: _____	
Is there any deterioration of the tank, tank coating, pipes, valves, foundation, drainage mechanism, or safety equipment? If yes, specify below or on the back of this document	Yes	No	
Does the hose show evidence of deterioration?	Yes	No	
Is the fire extinguisher fully operational?	Yes	No	
Is there any water at the lowest possible point inside the primary tank? <i>State below if water was discovered and removed.</i>	Yes	No	
Is there any evidence of liquid (fuel or water) in the interstitial space of double-walled tank?	Yes	No	N/A
Are all drain valves secured in the closed position?	Yes	No	N/A
Is there any accumulation of water or fuel in the containment area? State details of remedial action (absorption and disposal of fuel, or removal of water) below or on a separate sheet of paper	Yes	No	N/A
Is the spill basket clean and functional?	Yes	No	N/A
Are there any obstructions or restrictions that prevent normal function of the normal and emergency vents? If yes, specify below or on a separate sheet of paper. Ensure that the emergency vent moves freely.	Yes	No	N/A
Are there any operational malfunctions of auxiliary equipment?	Yes	No	N/A
Is there any evidence of a fuel release?	Yes	No	
Is a complete spill kit easily accessible?	Yes	No	
Are there any conditions that may pose fire, safety, or environmental hazards? If yes, specify below or on a separate sheet of paper.	Yes	No	

Comments; _____

Correct any deficiencies immediately. Keep checklist on file.

Signature: _____